

RUSSIAN JOURNAL OF AGRICULTURAL AND SOCIO- ECONOMIC SCIENCES

ISSN 2226-1184



#1(61)

January 2017

"RJOAS is an interdisciplinary open access journal of agriculture and socio-economic studies. The journal aims at establishing a bridge between theory and practice in the fields of agriculture and socio-economic research..."

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**РОЛЬ ЦЕНТРАЛЬНОГО БАНКА РФ В ОБЕСПЕЧЕНИИ УСТОЙЧИВОСТИ
БАНКОВСКОЙ СИСТЕМЫ**

**THE ROLE OF THE CENTRAL BANK OF RUSSIA IN ENSURING STABILITY
OF THE BANKING SYSTEM**

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АННОТАЦИЯ

В статье представлены и раскрыты механизмы банковского регулирования и надзора. Систематизированы различные подходы экономистов в определении понятия банковского надзора и контроля. Центральный банк рассматривается, как регулирующее звено банковской системы государства. В заключении изложены перспективы развития банковского сектора в области регулирования и надзора деятельности кредитных организаций в Российской Федерации.

ABSTRACT

The article presented and disclosed the mechanisms of banking regulation and supervision. Systematized the different approaches of economists in determining the supervisory and control concepts. The central bank is seen as governing unit of the state banking system. In conclusion, outlined the prospects for the development of the banking sector in the field of regulation and supervision of credit institutions in the Russian Federation.

КЛЮЧЕВЫЕ СЛОВА

Банковское регулирование, банковский надзор, Центральный банк Российской Федерации, проверки кредитных организаций, инспекционная деятельность.

KEY WORDS

Banking regulation, banking supervision, Central Bank of the Russian Federation, inspection of credit institutions, inspection activities.

Традиционно перед Центральным банком, являющимся регулирующим звеном банковской системы, ставится пять основных задач. В ряде стран они закреплены законодательно: монопольное право на эмиссию банкнот (эмиссионный центр страны); осуществление надзора, поддержание необходимого уровня стандартизации и профессионализма в кредитной системе страны (банк банков); поддержание государственной экономической программы, кредитуя и выполняя расчетные операции для правительства (банк правительства); посредничество между другими банками страны при безналичных расчетах (главный расчетный центр страны); регулирование экономики денежно-кредитными методами (орган регулирования экономики страны).

При решении этих задач Центральный банк выполняет три основные функции менеджмента: регулирующую; контролирующую (банковский надзор); информационно-исследовательскую.

За счет функции регулирования происходит стабилизация денежной массы в обращении. Это достигается сокращением или расширением денежной наличной

массы или безналичной эмиссии и проведением дисконтной политики, политики минимальных резервов валютной политики и открытости рынка.

Функция регулирования тесно связана с контролирующей функцией, включающей определение соответствия требований к качественному составу системы банков, то есть принятие решения, допускать ли данный кредитный институт на банковский рынок. Согласно п.9 ст.4 Федерального закона №86 ФЗ «О Центральном банке Российской Федерации (Банк России)» от 10.07.2002 г. одной из функций главного банка страны является осуществление надзора за деятельностью кредитных организаций и банковских групп (далее – банковский надзор) [5]. Ни один нормативно-правовой акт Российской Федерации не содержит конкретного определения термина «банковский надзор». Анализируя нормы действующего российского законодательства и научную литературу, можно столкнуться с отождествлением «надзора» с таким понятием, как «регулирование» и «контроль» [8].

Информационно-исследовательская функция присуща всем банкам. В широком понятии банк выступает как научно-исследовательский и информационно-статистический центр. Предполагается, что банк обязан опубликовывать свои решения в одной из центральных газет. Анализируя и публикуя объективную информацию о ситуации в денежно-кредитной сфере, Центральный банк может оперативно реагировать на экономические процессы как локального значения, так и глобального. При принятии решения о дополнительном выпуске денежных средств, эмиссионное управление основывается на соответствующем экономическом анализе ситуации в стране, и Центральный банк при необходимости дает рекомендации и координирует действие государственных органов.

С 1 сентября 2013 года Банку России были переданы полномочия Федеральной службы по финансовым рынкам по регулированию, контролю и надзору в сфере финансовых рынков (в соответствии с Федеральным законом от 23 июля 2013 года №251-ФЗ «О внесении изменений в отдельные законодательные акты Российской Федерации в связи с передачей Центральному банку Российской Федерации полномочий по регулированию, контролю и надзору в сфере финансовых рынков»). Банк России стал органом, осуществляющим регулирование, контроль и надзор в сфере финансовых рынков за некредитными финансовыми организациями и (или) в сфере их деятельности [2].

При изучении вопроса о понятии банковского надзора А.А. Пономарева находит данный термин разновидностью государственного финансового контроля, как «обязательное звено в замкнутой системе управления государственными финансами», позволяющее достичь стабильности банковской системы «посредством активных упорядочивающих действий Банка России», направленных на соблюдение кредитными организациями банковского законодательства, нормативных актов Банка России и установленных ими обязательных нормативов [9].

Стоит отметить определение банковского надзора, сформулированное Т.Э. Рождественской, как вид публично-правовой деятельности, основной целью которой является поддержание стабильности, развитие банковской системы страны и защита интересов вкладчиков и кредиторов [8]. Статья 56 ФЗ «О Центральном Банке РФ» вышеизложенные цели относит не только к банковскому надзору, но и к банковскому регулированию. Согласно данной статье, Центральный банк РФ является органом и банковского регулирования, и банковского надзора [5].

Можно сделать вывод об отсутствии единого толкования рассматриваемых понятий, в том числе, на уровне банковского законодательства, что усложняет их понимание и практическое применение.

Нельзя не согласиться с мнением С.Л. Ермакова, рассматривающий банковское регулирование как систему мер, с помощью которой государство через Банк России или иной надзорный орган обеспечивает стабильное и безопасное функционирование банковской системы. Под системой мер подразумевается разработка и издание конкретных правил или инструкций, основанных на действующем законодательстве и определяющих структуру и способы осуществления банковского дела в стране [4].

В соответствии со ст. 57 Федерального закона №86-ФЗ Банк России устанавливает обязательные для кредитных организаций и банковских групп правила: проведения банковских операций, бухгалтерского учета и отчетности; организации внутреннего контроля; составления и представления бухгалтерской и статистической отчетности; составления и представления другой информации, предусмотренной федеральными законами Российской Федерации [5].

Банковский надзор отождествляется с системой норм государственно-властного характера, целью которой является обеспечение стабильного функционирования банковской системы в целом, а также защита интересов вкладчиков с помощью государственной регистрации и лицензирования банковской деятельности, юридического установления экономических нормативов функционирования банков и осуществления иных мер банковского надзора, главным инструментом которого выступает применение мер воздействия от имени государства [4].

Регулирующие и надзорные функции Центрального Банка Российской Федерации осуществляются через действующий на постоянной основе орган, Комитет банковского надзора [5], в состав которого входят: Председатель Комитета и его заместители; Департамент банковского надзора; Департамент банковского регулирования; Департамент лицензирования деятельности и финансового оздоровления кредитных организаций; Главная инспекция кредитных организаций; Департамент финансового мониторинга и валютного контроля; Департамент финансовой стабильности; Юридический департамент; Главное управление безопасности и защиты информации; Московское главное территориальное управление Центрального банка Российской Федерации [7].

В целях осуществления своих функций Банк России в соответствии с перечнем, установленным Советом директоров, имеет право запрашивать и получать у кредитных организаций необходимую информацию об их деятельности, которая требуется для составления консолидированной отчетности.

В целях составления банковской и денежной статистики, платежного баланса Российской Федерации, анализа экономической ситуации Банк России имеет право запрашивать и получать необходимую информацию на безвозмездной основе у федеральных органов исполнительной власти, их территориальных органов, юридических лиц. Данная информация не подлежит разглашению без согласия соответствующих юридических лиц, за исключением случаев, предусмотренных федеральными законами Российской Федерации. Банк России в целях осуществления банковского регулирования и надзора публикует сводную статистическую и аналитическую информацию о банковской системе Российской Федерации.

В случае выявления нарушений или предоставления кредитными организациями неполной и недостоверной информации, Банк России, в зависимости от вида нарушений имеет право: взыскать штраф; ограничить проведение кредитной организацией отдельных банковских операций, предусмотренных выданной ей лицензией; ограничить открытие кредитной организацией филиалов; потребовать от кредитной организации осуществления мероприятий по ее финансовому оздоровлению, замены ее руководителей и осуществления реорганизации банка и др. [5, 9].

Согласно формулировке А.З. Арсланбековой, банковский надзор и банковское регулирование как система состоит из: регистрации и лицензирования; дистанционного (документарного) надзора; инспектирования; работы с проблемными банками; ликвидационных процедур [3].

Согласно статье 59 Федерального закона №86-ФЗ Банк России принимает решение о государственной регистрации кредитных организаций и в целях осуществления им контрольных и надзорных функций ведут Книгу государственной регистрации кредитных организаций, выдает кредитным организациям лицензии на осуществление банковских операций, приостанавливает действие указанных лицензий и отзывает их [5]. Согласно официальному отчету Центрального Банка РФ о развитии банковского сектора и банковского надзора 1 января 2014 г. лицензией на

осуществление банковских операций обладало 923 кредитных организаций [5]. Общее количество действующих кредитных организаций, имеющих лицензию на осуществление банковских операций уменьшилось на 3,5%.

Дистанционный или документарный надзор (пруденциальный) подразумевает проверку форм отчетности, которую предоставляет кредитная организация в Центральный Банк РФ, об осуществляемой деятельности за определенный период времени. Если отчеты заполняются достоверно, в полном объеме и своевременно, то пруденциальный надзор может быть использован «как система раннего предупреждения сбоев в работе банковского сектора». Систематический анализа достаточности уровня капитала и положительных, отрицательных тенденций в деятельности конкретного банка дает возможность заранее выявить проблемы, способные привести к неплатежеспособности и, возможно, как результат к банкротству кредитной организации [4].

Третий элемент системы банковского надзора - проведение инспекционных проверок кредитных организаций – предусматривает оценку общего состояния банков или отдельных направлений их деятельности непосредственно на месте. Контроль над деятельностью банков с выездом на место осуществляется сотрудниками главной инспекции кредитных организаций. Перед надзорно-инспекционным блоком Центрального банка России стоят такие важные задачи как определение фактического финансового состояния банка, выявление ситуаций, угрожающих интересам кредиторов и вкладчиков, а также проверка соблюдения кредитной организацией действующего банковского законодательства и нормативных актов ЦБ РФ [4]. Проверки осуществляются либо с уведомления кредитной организации, либо без предварительного уведомления [3].

Работа с проблемными банками подразделяется на: - выявление финансовых трудностей, - изучение особенностей возникновения проблем, - формирование политики их решения, - применение мер воздействия. Необходимо ответить, что банковский надзор «не должен и не может ставить целью применение карательных мер». Напротив, вследствие своевременного выявления ошибок, допущенных кредитной организацией, выявляются возможности банка в дальнейшем обеспечивать принятые на себя обязательства перед вкладчиками. Если таковые возможности не обнаружены, то применяется крайняя мера – отзыв лицензии и последующая ликвидация.

Согласно отчету, представленному Центральным Банком РФ в 2012 году Банком России отозваны лицензии на осуществление банковской деятельности 22 кредитных организации, в 2013 году – 32 кредитных организаций [6], а по данным Центрального Банка РФ на 01.12.2014 г. 80 кредитных организаций лишились лицензии на осуществление банковской деятельности за период с 01.01.2014 г.

Банк России в рамках работы по повышению эффективности банковского надзора, в том числе на консолидированной основе, а также в связи со вступлением в силу Федерального закона №146-ФЗ издал указание Банка России от 25.10.2013 №3089-У «О порядке осуществления надзора за банковскими группами» [6]. Данный нормативный документ устанавливает порядок осуществления Банком России надзора за деятельностью банковских групп, в том числе порядок формирования и организации работы надзорных групп, порядок проведения ежеквартальной оценки выполнения банковской группы (участниками банковской группы) обязательных нормативов, соблюдения лимитов открытых валютных позиций, предъявленных требований, порядок осуществления сбора и хранения информации о деятельности банковской группы и крупных участников банковской группы. Данный нормативный акт Банка России вступил в силу с января 2014 года.

В целях совершенствования надзорной оценки деятельности кредитных организаций в 2014 году Банк России ужесточил подход к оценке финансовой устойчивости банков. Установлено, что экономическое положение банка не может быть признано удовлетворительным, в случае, если правила внутреннего контроля банка в целях противодействия легализации доходов, полученных преступным путем, и

финансированию терроризма не соответствует требованиям Банка России, либо если данные правила, по оценке Банка России, не соблюдаются, либо если система внутреннего контроля в целях ПОД/ФТ не позволяет уделять повышенное внимание операциям клиентов с повышенной степенью риска.

Ежегодно Банк России работает по совершенствованию своей законодательной и нормативной базы в соответствии с международно признанными подходами. Также Банк России участвует в разработке Федеральных законов. Перспективы развития системы банковского регулирования и банковского надзора в Российской Федерации направлены на повышение «прозрачности» деятельности, т.е. осуществление публикаций финансовых отчетов; разработку и внедрение системы раннего реагирования; разработку действенного механизма предупреждения банкротства кредитных организаций и их ликвидация в рамках банкротства [4, 6].

Можно сделать вывод о том, что действующая политика государства и Банка России направлена на сокращение числа неэффективных финансовых структур, повышение капитализации и собственного капитала кредитных организаций, консолидацию российской банковской системы путем ее укрупнения. Центральный банк Российской Федерации играет ключевую роль в системе государственного менеджмента с помощью регулирования и надзора за деятельностью кредитных организаций РФ и призван, в целом, способствовать укреплению финансовой устойчивости и, в конечном итоге, безопасности национальной банковской системы государства.

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DOI <https://doi.org/10.18551/rjoas.2017-01.02>

GREEN BANKING: BANGLADESH PERSPECTIVE AND INTERNATIONAL EXPERIENCES

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ABSTRACT

Climate change is the most complicated issue the world is facing. Across the globe there have been continuous endeavors to measure and mitigate the risk of climate change caused by human activity. Many countries the world over have made commitments necessary to mitigate climate change. Although banks are considered environment friendly and do not impact the environment greatly through their own 'internal' operations, the 'external' impact on the environment through their customers activities is substantial. The banking sector is one of the major sources of financing industrial projects such as steel, paper, cement, chemicals, fertilizers, power, textiles, etc., which cause maximum carbon emission. Therefore, the banking sector can play an intermediary role between economic development and environmental protection, for promoting environmentally sustainable and socially responsible investment. 'Green banking' refers to the banking business conducted in such areas and in such a manner that helps the overall reduction of external carbon emission and internal carbon footprint. To aid the reduction of external carbon emission, banks should finance green technology and pollution reducing projects. Although, banking is never considered a polluting industry, the present scale of banking operations have considerably increased the carbon footprint of banks due to their massive use of energy (e.g., lighting, air conditioning, electronic/electrical equipments, IT, etc), high paper wastage, lack of green buildings, etc. Therefore, banks should adopt technology, process and products which result in substantial reduction of their carbon footprint as well as develop a sustainable business.

KEY WORDS

Green banking, climate change, sustainable, developing countries, Bangladesh.

Bangladesh can lessen significant amount of carbon emission and conserve its forests and environment through adopting energy efficient clean technology in brick kilns. However, there is hardly any research work on securing environment with special focus on energy saving automated brickfield role in Bangladesh. Rapid urbanization and industrialization help improve the live hood of the beings simultaneously, it create strain on natural resource such as energy water and food supplies our plants ability to meet the growing demand of urbanities may be depleted if we don't become environment conscious .climate change has become a global concern as it direct impact on biodiversity, agriculture forestry dry land water resource and human health. Environmentalism is a broad philosophy and social movement. Regarding concern for environmental concern conservation and improvement of the state of the environmental .Environmentalism and environmental concern are often represented by color of "green "Global warming also called Green house effect is a global issue that calls for a global response. The warming effect of certain man-made gas emission such as carbon-dioxide methane, nitrous oxide and hydro-fluro carbon is found responsible for distortion in climate changes. The rapid to change in climate will probably be too great

allow many eco systems to suitably adapt, since the changes have direct impact on bio diversity, agriculture, forestry, dry land, water resources and human health. However, there is general lack of adequate awareness on the above issues and -hence there is urgent need to promote certain urgent measures for sustainable development and corporate social responsibility.

LITERATURE REVIEW

Green Banking is the new form of banking toward to protect environment activities and sustainable development. The banking sector is an intermediary role between economic development and environment protection through their activities. This concept was formally developed in some countries in 2003 with the vision to protect the environment. Bangladesh Bank is adopted by financial institutions, especially banking, for determining, assessing and managing environmental and social risk in projects. Now, the concept appeared in many countries' policies and has an impaction to both of economic and environment. World Bank also had the publication Environmental & Social (E&S) norms for financial institutions including commercial banks, investment funds and leasing companies, to define their role on the environmental impact. These norms provided for financial institution an overview about environmental and social risks or opportunities. Those also gave an Environmental and Social Management System (ESMS) for the institution to outline the way to protect environment. The principles are including:

- E&S Policy and Objective;
- Transaction Screening and Risk Categorization;
- E&S Due Diligence (ESD) and Corrective Action Plans;
- E&S Covenants;
- Monitoring E&S Performance;
- Supporting Tool, Systems and Organizations;
- Roles, Responsibilities and Capacity Building.

METHODOLOGY OF RESEARCH

This paper reviews the literature on the previous researches on green banking and green bank model. Case studies research of developing and developed countries are used to withdraw the best practices in green banking. Some in-depth interviews with bank leaders in Bangladesh are also conducted to obtain the ideas and personal perspectives on difficulties and opportunities for Bangladesh bank when developing green banking activities. These will help the authors to have an independent analysis point of view and arguments in the papers.

INTERNATIONAL EXPERIENCES AND BANGLADESH PERSPECTIVES

International Experiences. In many countries around the world, Green Bank is a new concept has been known in recent years, particularly for developing countries including Bangladesh, because the requirements of environmental protection are trade-offs to achieve growth, economic development. However, after the global financial crisis in 2008, all countries in the world have to recognize the ways of organizing and operating model in its financial system, including banks. The issue of sustainable development, responsible business and corporate social responsibility, ethics and the environment are reviewed under a higher importance. Hence, the Green Bank emerged as a role model for banking in the future, is the foundation for the direction to a green economy for sustainable development. In 2002, the International Finance Corporation (IFC) and 9 international banking conferences in London discussed the responsibility of banks to the finance development and construction of a decision to implement the standard for accountability the environment, society based on the standards of IFC. Equator Principles (EPFIs) for funding the project was officially

launched in 2003 and now has 77 participating financial institutions. The standards will play an important role in the classification and ranking of green bank today. (Equator principles)

United States. In March 2009, the US introduced a Green Bank Act with aim of establishing a green bank under the ownership of the US government. The initial decision was to minimize the paper use in banking works. One is in-house green banking; another is practice by the bankers in their business area. Other activities was including creating clean and hygienic banking environment, green building, reforestation, online banking, waste management, installation of solar panel on the rooftop of the bank and using high mileage vehicles, reducing sound pollution, using webcam for video conferencing instead of physical meetings, online statements, emailing documents are

included in the in-house green banking. On the other hand, the banking sector supported to the green projects like Biogas Plant, Solar/Renewable Energy Plant, Bio-fertilizer Plant, Effluent Treatment Plant (ETP), Projects having ETP etc. A typical example of a green bank is in the United States. In the past of difficulties, when U.S. banks impose high fees and creates bad debt, a type of bank is emerging. It is the banks having a social conscience and applying principles of sustainable development and responsible for the business model and its products. An excellent model of the new wave of green bank is the launch of Green Choice Bank in Chicago area; Green Bank in Dallas (Schultz, 2011) The United States also develop standards to evaluate and rank the level of "green" of the bank, published periodically by the Insurance Corporation Federal Deposit (FDIC). America is also the first nation regulates on environmental responsibilities of stakeholders, including bank loans in the United States must be governed by laws Reimbursement Act, Comprehensive Environmental (CERCLA) in 1980. In a study of the potential role of green bank in the state of California , Juhnke C., et al. (2012) evaluated the potential impact of a Green Bank in energy efficiency and distributed generation , based on 6 criteria: (1) the number of additional projects are funded, (2) cost-effectiveness of the bank, (3) increase the benefits provided by the bank, (4) the feasibility the bank's management, (5) the ease of integration with existing programs of the government and (6) the political viability. Thereby, studies have demonstrated the presence of Green Bank has helped to increase the flow of capital costs to compete effectively, thus helping the state achieve clean energy and help reduce many of the current problems are plaguing this market. The study "Sustainable Bank" of Imeson M., and Sim A., (2010) showed a close relationship between banks and factors: economic, social and environmental. Thereby, the study shows that a bank for sustainable development, the investor decided to look at the big picture and act in a way that benefits the consumer, economy, society and environment.

India. In India, the application of green programs for the environment and the community has been deployed for more than 2 decades, mainly loan programs for women, grant credits for economic development projects local. Since July 2010, the State Bank of India (SBI) has implemented the "green channel Counter (GCC)" and "banks do not line up" in more than 5,000 branches throughout India, as a step towards innovation "green bank" paperless transactions to send, withdraw and transfer money, pay and abroad. (Sahoo & Nayak, 2008) Some of public sector banks and private sector banks were also adopted green banking policies and provided green products and services. Case study of ICICI Bank Ltd in India is a particular example about adopted "Go Green" initiative included (Note 3):

- Green Products and Services: This innovation was including (i) Instabanking; (ii) Vehicle Finance and (iii) Home Finance;
- Green Engagements;
- Green Communications: The institution provided to their customer for online bill payment, online funds transfer and subscription to e-statements that were promoted paperless and commute free;
- Green Partners: Beside the traditional customers, ICICI was also looking forward for green organizations and NGO.

However, the banking sector still was small role to positive impact environment in India. None of banks has adopted equator principle even for the sake records (Sahoo & Nayak, 2008). Research "Green Bank in India" by P. Nayak, (2008) demonstrated the importance of

Green Bank, and recommends methods and political initiatives that are feasible to promote development green banking in India.

China. China has also implemented the "Green Credit Policy" in 2007, to encourage Chinese banks to grant credit for projects less polluting, environmentally friendly and energy use renewable energy. However, China has spent nearly 5 years since the policy issued until construction is detailed guidelines on implementing this policy (February 2012) and its implementation did not achieve as expected to evaluate the system due to lack of reliable data on pollution to help the banks financing the project classification. (Zhang, Yang & Bi, 2011).

United Kingdom. Research on the Green Investment Bank (Green Investment Bank) by Vivid Economics and McKinsey (2011) have emphasized the role of the GIB which was established in 2010 by agreement of the UK government coalition finishing policy framework and the financial support necessary to address the failures of the free market, risk aversion, high transaction costs and lack of funds. According to this study, GIB could help expand the potential investors, improve the economic efficiency of the project and share information to reduce risk, namely, the evidence of the failure of market and opportunities GIB intervention as follows: (1) Sea wind energy: GIB help increase new investors, financial support to thereby increase the amount of renewable electricity as well as reducing the carbon footprint environment, (2) Use external power source of UK is an effective option for reducing carbon emissions in the UK territory, strengthen energy security and long -term competitiveness of the industry, the time, GIB also helps mobilize funding for the project and reduce carbon emissions into the environment, (3) GIB also supports waste processing industry to minimize the landfill, generate heat renewable energy and carbon emissions. The analysis of Vivid Economics and McKinsey (2011) showed that in all three cases, the intervention of the GIB is more efficient and fair, in addition to the current policy. GIB's intervention helped to mobilize funds from equity market, debt markets and enable pricing of risk in financial markets through enhancing transparency and widened investment flows into sustainable development projects.

Greece. Angelos Papastergiou (2001) examines the sustainable development problem of banks in Greece. This paper shows the positive developments in sustainable banking. Some of banks could ignore the economic characteristics of customers if these projects were considered the beneficial effects on the environment. On the other hand, it is frequently asserted that small banks signed of the Equator Principles, which was one of the most important standards for responsible financing, had been under the umbrella of larger banks. Only the largest Greek banks provided the detail of environmental activities while the other banks were not. It is general accepted that the environmental performance of Greek bank was bias, it was depend on banks' structure and dimension.

Bangladesh. Maruf's study (2010) showed that in Bangladesh only public banks and foreign banks are operating guidance for green banking and financing some projects environmental friendly. Commercial banks are encouraged to sponsor the wastewater treatment plant in the industrial park; the project uses solar energy; biogas. This study also made recommendations that the banking green in Bangladesh should be catalyzed and supported by investment and public spending, and improving policies and government regulations. Raad Mozib Lalon (2015) listed the Green Banking Policy in Bangladesh concerned based on three phase through time of framework. The policies were encouraged banking sector to avoid as much as possible paper works and relying on electronic transactions for processing of in-house activities. Moreover, it also created brand image and create awareness amongst the stakeholders about the environment as well as environmental friendly business practices. On the other hand, this policy was also building a sanction loans to environmentally harmful projects so that make sure to:

- Phase I concerned to develop the awareness and show general commitment on environment through banks' performance including 9 policies: (1) Policy Formulation and Governance; (2) Incorporation of Environmental Risk in Core Risk Management; (3) Initiating In-house Environment Management; (4) Introducing Green Financing; (5) Creation of Climate Risk Fund; (6) Introducing Green Marketing; (7) Online Banking;

- (8) Supporting Employee Training Consumer Awareness and Green; (9) Reporting Green Banking Practice.
- Phrase II was based on 7 components: (1) Sector Specific Environmental policies; (2) Green Strategic Planning; (3) Setting up Green Branches; (4) Improved In-house Environment Management; (5) Formulation of Bank Specific Environment Risk Management Plan and Guideline; (6) Rigorous Programs to Educate Clients; (7) Disclosure and Reporting of Green Banking Activities.
 - Phrase III was processing 1-year after Phrase II. It was based on a system of Environmental Management to address the whole eco-system through environment friendly initiatives and introducing innovative products including two parts: (1) Designing and Introducing Innovative Product and (2) reporting in Standard Format with External Verification.

RECOMMENDATION FOR BANGLADESH PERSPECTIVE

Green Bank in Bangladesh. In developing countries, benefits of green banking can be shown more directly such as avoids paper work:- Until a few years ago, most traditional banks did not practice green banking or actively seek investment opportunities in environmentally-friendly sectors or businesses. Only recently these strategies become more prevalent, not only among smaller alternative and cooperative banks, but also among diversified financial service providers, asset management firms and insurance companies. Although these companies may differ with regard to their stated motivations for increasing green products and services (e.g. to enhance long-term growth prospects, or sustainability principles on which a firm is based), the growth, variation and innovation behind such developments indicate that we are in the midst of a promising drive towards integrating green financial products into mainstream banking. Bank products and services can also reflect a green banking commitment and in figure 1 shown the diagram.

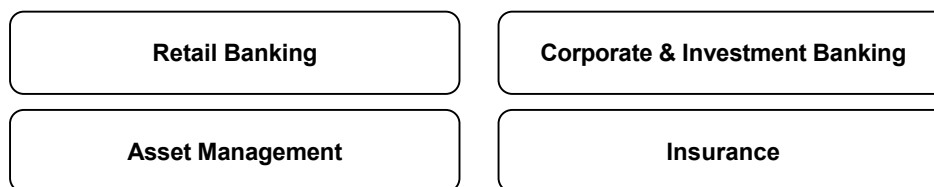


Figure 1 – The classification of banking sectors according to their product and service review

Banks is well aware of the environmental degradation situation as mentioned above and has already given time to time directions to all scheduled banks. Commercial Banks are now required to ensure necessary measures to protect environmental pollution while financing a new project or providing working capital to the existing enterprises. Banks have been advised to facilitate their clients with utmost care in opening Letter of Credit (L/C) for installation of Effluent Treatment Plant (ETP) in the industrial units. Banks have been advised to finance in Solar Energy, Bio-gas, ETP and Hybrid Hoffman Kiln (HHK) in brick field under refinance program of BB. A comprehensive guideline on Corporate Social Responsibility (CSR) has been issued where banks have been asked to concentrate hard on linking CSR at their highest corporate level for ingraining environmentally and socially responsible practices and engaging with borrowers in scrutiny of the environmental and social impacts. Banks have been brought under the purview of E-commerce with a view to providing the customers with online-banking facilities covering payments of utility bills, money transfer and transactions in local currency through internet as well. Considering the adverse effects of Climate Change, banks have been advised to be cautious about the adverse impact of natural calamities and encourage the farmers to cultivate salinity resistant crops in the salty areas, water resistant crops in the water locked and flood prone areas, drought resistant crops in the drought prone areas, using surface water instead of underground water for irrigation and also using organic fertilizer, insecticides by natural means instead of using chemical fertilizer and

pesticides.

The term green banking generally refers to banking practice that foster environmentally responsible financing practice and environmentally sustainable internal process minimizing GHG emissions.

Green Banking has two approach, these are:

- Green Banking focuses on green transformation of internal operations of all banks;
- All Banks should adopt environmental risk of project before making financing decision and in particular supporting and fostering growth of up-coming green initiatives and projects.

Recommendation for Bangladesh Market:

As of now, environmentally sustainable units in Bangladesh are not implemented to a fuller extent because of the present set up of the companies. According to the environmental regulation of green banking in Bangladesh, industries are supposed to have an eco-friendly set up but the present setup cannot be changed instantaneously as it would create a financial burden for the industries itself.

According to the legal frame work of green banking, the Polluting industries either have to close down or have to make necessary investment to comply with the standard. In this process these industries will lose their competitiveness in the international market, which would directly affect our economy and the banking sector.

Despite of all the odds banks are still trying to do their part in sustainable development by using solar powered ATM"s, Online and mobile banking initiatives etc, thus creating a path towards green planet.

CONCLUSION

In a rapidly changing market economy where globalization of markets has intensified the competition, the industries and firms are vulnerable to stringent public policies, severe law suits or consumer boycotts. This would affect the banks and financial institutions to recover their return from investment. Thus, the banks should play a pro-active role to take environmental and ecological aspects as part of their lending principle which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems. Green Banking if implemented sincerely will act as an effective for the polluting industries that give a pass by to the other institutional regulatory mechanisms. There has not been much initiative in this regard by the banks and other financial institutions in Bangladesh though they play an active role in India's emerging economy. The banking and financial sector should be made to work for sustainable development. As far as green banking in concerned, Bangladesh's banks and financial institutions are running behind time.

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DOI <https://doi.org/10.18551/rjoas.2017-01.03>

SOME ASPECTS RURAL-URBAN INTERDEPENDENCE: ECONOMIC-GEOGRAPHICAL VIEW

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ABSTRACT

There are two broad, often overlapping, categories of rural - urban linkages. «Spatial» links refer to the movement of people, goods, money, and information between urban and rural areas. «Sectoral» links describe the interdependence between agriculture on the one hand and industry and services on the other. In the next two decades, three main issues related to rural-urban interdependence are likely to emerge: (1) changes in land use around urban centers, from farmland to residential or industrial use; (2) greater diversification of income sources in rural and urban areas, often involving people migrating or commuting between the countryside and urban centers; and (3) changes in the direction and composition of internal migration (see Tacoli, 2000). In this text indicates on the some economic geographic aspects of rural-urban interdependence. Rural and urban development requires a balance between human capital, economic progress and natural resources. The migration of labor from rural to urban areas is an important part of the urbanization process in developing countries. Even though it has been the focus of abundant research over the past five decades, some key policy questions have not found clear answers yet. Sustainable development can be achieved at any level, provided that each component of the system to have the same importance in maintaining a balance between the need to develop and its possibilities. The rural - urban metabolism generates relations of interdependence between villages and towns, resulting in the formation of a «variety of societies, from deep rural to deep urban».

KEY WORDS

Rural, urban, interdependence, aspects.

Rural areas can be defined with respect to different aspects of rurality; namely geographic, environmental, economic, social and cultural criteria. In general, they will be different for urban and rural regions (settlement dimension), for regions with different industrial structures and different composition of the total stock of capital, including environmental resources and cultural heritage (structural dimension) (Hediger et al, 1998). Rural - urban interdependence relates to the joint or interactive relationship between urban and rural areas. The mutually are beneficial correlativeness of urban and rural areas. Traditionally, rural and urban issues and planning have been typically seen as and dealt with separately. However, in recent years as urbanization and inequality increase, more sophisticated analyses of the linkages and interdependencies between rural and urban areas have emerged (Low, et al., 1999). Urban - rural interdependence includes spatial links to the movement of people, goods, money, and information between urban and rural areas including roads and railways, and sectorial links (interdependence between agriculture, industry and services). Rural - urban interdependence is important for poverty alleviation and sustainable rural development and urbanization. Strong linkages can improve the living conditions and employment opportunities of both rural and urban populations. Domestic trade and the adequacy and efficiency of infrastructure are the backbone of mutually

beneficial rural - urban relationships and of the success of the relationship between urban and rural areas (Bekker, 2000).

Ghiurca et al (2012) citing research Ungureanu et al (2003) and Miftode (1978) indicates that rural and urban development requires a balance between human capital, economic progress and natural resources. Sustainable development can be achieved at any level, provided that each component of the system to have the same importance in maintaining a balance between the need to develop and its possibilities. Sustainable development is a process of local importance, which involves the accumulation of wealth and the increase in the standard of living in a small space, where the natural resources and entrepreneurship plays a determinative role. The rural - urban metabolism generates relations of interdependence between villages and towns, resulting in the formation of a «variety of societies, from deep rural to deep urban».

MATERIALS AND METHODS

The presented material was mainly based on the study of many international specialty papers (see references at the end of the paper), from the observation of links between rural and urban settlements, on the occasion of documentation, as well as in consultation with numerous articles and studies published on Internet (see Chiristecu, 2011; Rajović and Bulatović, 2015; Rajović and Bulatović, 2016). A number of official websites of institutions and central and local management bodies has been taken from: OECD (1995), OECD (1998), United Nations Population Division (2005), ESPON (2009), and others.

ANALYSIS AND DISCUSSION

To make an accurate analysis of what is rural, with all its characteristic elements, we cannot differentiate rural areas from urban ones. Most often, rural interacts with urban space. Knowledge of rural, in all its dimensions, requires, in many respects, a comparative «rural – urban» analysis. Differences between rural and urban areas, in terms of economic and social organization, and also development issues are the result of the «rural-urban» distinction. Views on the conduct of the relationship are shared (Furdui et al, 2011). For example, according to Furdui et al (2011) citing research Badouin (1971) defines rural as opposed to urban areas, designating through this concept ... popular areas characterized by a relatively weak density and prevalence of agricultural activities. Rural areas, unlike urban space, do not imply strong concentrations of people. Clusters are limited to the size of the village. It is represented by a form of scattered habitat in the form of hamlets or farms disseminated in nature. Rural areas are suitable for agricultural activities ... On the other hand; if rural space favors land as a production factor ... rural area is simultaneously settlement and environment. On the other hand, Meves (1981) by Furdui et al (2011) trying to rekindle the interference between rural-urban terms, explains that this relationship tends to integrate in both ways: urban in rural and contrary. In addition, the author makes a reference to agriculture as plant and animal production process that although plays a determinant role, the phenomenon is only part of agriculture it is inextricably linked to the rural environment but not necessarily to the urban one. Solutions regarding how to establish the new urban – rural linkages are based on the availability of public transport and services, cooperation among urban and rural areas, the inclusion of suburban territories in spatial planning strategies, as well as the formation of networks of small and medium enterprises in provincial towns and rural areas. A more detailed summary of goals, instruments, and gains is presented in Figure 1 (Bulderberga, 2011).

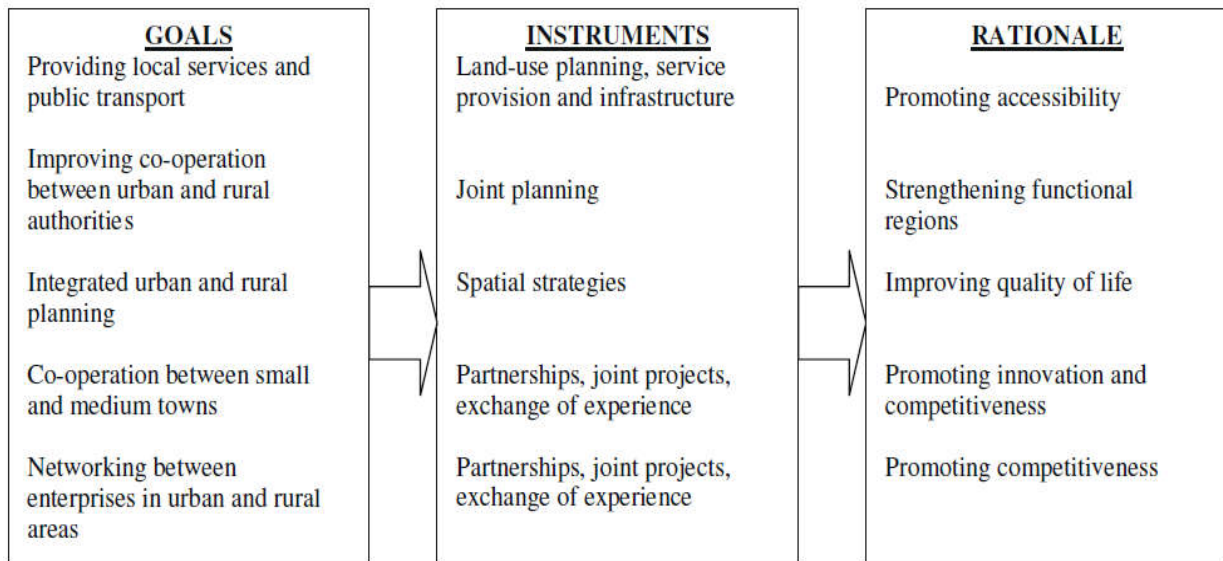


Figure 1 – Policy directions on rural - urban partnership (Bulderberga, 2011)

The United Nations reports that 43 percent of the world's population lived in urban areas in 1990; a 34 percent increase since 1960. In 2005 the world will pass a historic milestone: more than half of its population - or more than three billion people - will live in cities (see OECD,1995; OECD, 1998; United Nations Population Division, 2005; ESPON, 2009). At the turn of the century, only 14 percent of the Earth's population called cities home - and just 11 centers on the planet had more than one million inhabitants. At the halfway mark of the 21st Century, more than 70 percent of the world's population will live within the metropolitan framework (an area now loosely defined up to 40 - 100 kilometers from the older urban cores). In most more developed nations, especially in North America and Europe, the urban - rural distribution now stands at 75 - 80 percent metropolitan to 20 - 25 percent rural (Keler, 2001). Mylott (2009) citing research Tacoli (1998), Tacoli (1998), Tacoli (2003) and Rosenthal (2000) indicates that rural - urban linkages are important for poverty alleviation and sustainable rural development and urbanization. By Saracoglu and Roe (2004) citing research Ammassari (1994), Tabuchi et al (2002), Mazumdar (1987), Harris-Todaro (1970), Gupta (1997), Basu (2000), Bhattacharya (2002) indicates that rural-urban migration, or internal migration, is in essence a change in the spatial distribution of population in a given country over time. Migration and the change in population distribution are influenced by specific characteristics of the economic development process and by various stages of development in a country. Migration has been seen as a response of individuals to better economic and non - economic opportunities and an expectation of increased economic welfare in urban areas. Migrants are attracted to the cities with the expectation of a higher wage than they receive in agriculture, and are willing to accept the probability of urban unemployment, or lower wages and «underemployment» in the urban informal (traditional) sector. Migrant is willing to accept urban unemployment or lower wages in the urban informal sector as long as he expects to «graduate» to the urban modern sector in the future. Further regional heterogeneity may arise due to the existence of regional non - traded goods, which exacerbates the differences in cost of living across regions. For an individual to be in equilibrium (i.e. no migration), it must be the case that his expected utility derived from staying in the rural region is equal to the expected utility derived by moving to the urban region. Since the household's income and consumer prices in a region directly affect the consumption decision, they also affect the household's expected utility from staying or migrating... (see Saracoglu and Roe, 2004). The increasingly complex connections between urban and rural areas are beginning to be recognized but «still have a relatively limited impact on development policy and practices. The regional development planning used

to create a better balance between urban and rural and reduce migration pressure on urban areas has disproportionately benefitted large farms and wealthy land owners. Even many policies that attempt to draw on urban - rural linkages are often unsuccessful because they fail to reflect the true circumstances of the people they are created to help.

It is clear that the study of internal migration suffers from a lack of appropriate datasets. Future research will be much improved if it can: (1) Better characterize internal migration flows and stocks. It would be very useful to have databases on internal migration by education in a selection of developing countries, complementing the work of Docquier and Marfouk (2005) who recently built such a database for international migration. This would enable researchers to compare the phases of the urbanization and migration process across countries, which is crucial since policy recommendations can differ according to the context (Lall et al, 2006); (2) Use panel micro datasets. This will help address several standard econometric problems, as well as improve the economic understanding of a process which takes time and whose effects are spread out over time. For instance, with such data, duration models could be tested to study the employment and unemployment spells of workers following migration. It would also be highly desirable for researchers to have access to datasets incorporating an economically relevant and sufficiently fine spatial identifier that would enable researchers to better study the workings of local labor markets (since interactions probably occur at a small geographic level). Such data would also enable the matching of different sources and enable researchers to better take into account the local contexts of both origin and destination areas. In this respect, surveys with information on both areas of origin and areas of destination (for instance village studies matched with a sample of migrants originating from the area) should prove very useful. Building such datasets is costly but it is important to gain a sufficiently fine understanding of the migration process to make it beneficial (Lall et al, 2006).

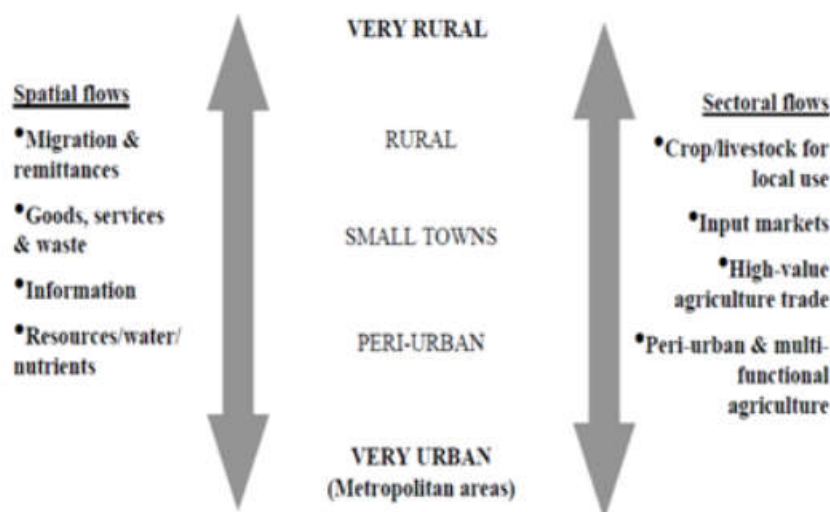


Figure 2 – Howls flows between rural and urban areas (Kasanoff, 2014)

Understanding rural - urban linkages matters because it provides the basis for measures that can improve both urban and rural livelihoods and environments. Ignoring them means that important opportunities will be lost, and in many cases it will also contribute to poor and marginal people's hardship. There are urban initiatives that can reduce ecological damage to rural areas, and help support regional development. Solutions to urban stretch are to promote squeezed land use and strategic transport planning at a neighborhood level (Kasanoff, 2014). The other option is to strengthen links between peripheral parts of a region such as positive development in small and medium size cities of a region. In this way they can offer a better environmental quality and better local public services. Also with this Urban - rural co-operation on sustainable energy projects is likely to make a greater and positive

impact. Local government and other local actors are best placed to identify local needs and priorities and provide an adequate response. Local decision-making can help avoid the neglect of forward and backward linkages between two domains. It can also negotiate and regulate the use of natural resources by rural and urban residents, which can otherwise become a major cause for conflict (Kasanoff, 2014).

According to Steinberg (2014) key message and underlying issues: urbanization is irreversible and so is the urbanization of rural hinterlands. Today, rural hinterlands and urban areas are becoming more linked than ever. The nature of linkages has changed from a separation and dichotomy towards close linkages between the two spheres towards more integrated systems, a rural system and an urban system which are closely linked through the flow of people, production, commodities, capital and income, information, natural resources, waste and pollution. This existence of reciprocal rural - urban linkages proves to be highly relevant to interpret development of both rural and urban contexts as two sides of the same coin, so to speak. Cities should be seen as engines of rural development, providing markets and infrastructure, as well as a range of essential services, for the productivity of rural activities (see Figure 3).

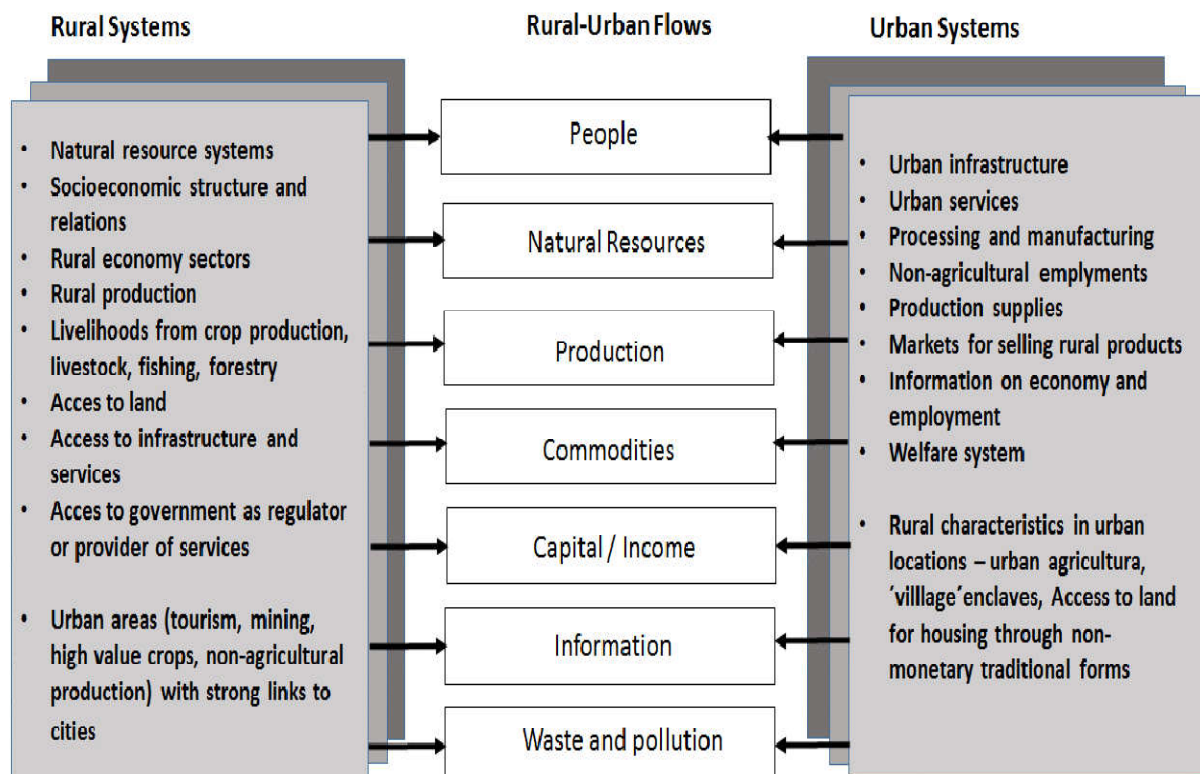


Figure 3 – Rural - Urban Flows (Steinberg, 2014), according to Douglass (1998)

Urban Functions in Rural Development (UFRD) is based on the concept that rural towns could mediate between the big 'parasitic' cities and agricultural areas and facilitate the commercialization of agriculture (Johnson and Rasker, 1970). According to Mulongo et al (2010) citing research Douglass (1998)) indicates that the towns in this network have been expected to serve as centres of information and knowledge, infrastructure, and as central places for marketing production and purchasing supplies, and non-agricultural employment for rural labour. This approach was applied in selected number of developing countries but has shown limited success in promoting rural development and stemming rural to urban migration. „Empirical studies have highlighted three very instructional conceptual and practical limitations with this approach: (1) The economic activities and needs of rural areas are not prescribed by the nature of rural town. Rather it is the other way around- the

characteristics and functions of rural towns vary with the types of economic activities in a rural area. Therefore, attempts to promote desirable rural benefits by establishing a hierarchy of towns with predetermined functions generally fail. It is necessary to carefully determine the existing systems of production functions of rural towns and specific rural and urban linkages, and not assume that the benefits of the network strategy will always be relevant and beneficial. Consumption by rural people is not limited by lack of access to goods. It is limited to incomes (Improved access to infrastructure and greater efficiency of product and inputs and products, in the absence of viable capital injections, many towns in developing countries have not become dynamic «service centres»); (2) Interaction in rural towns and diffused urban centres does not usually include the poorest of the poor. They often lack the necessary resource to move extensively over space and to access the advantages, such as non-farm employment of towns. Therefore, even if the UFRD approach were fully successful in all other respect, it would not address rural poverty without more specific attention to the rural economy and needs of the poor» (Mulongo et al, 2010).

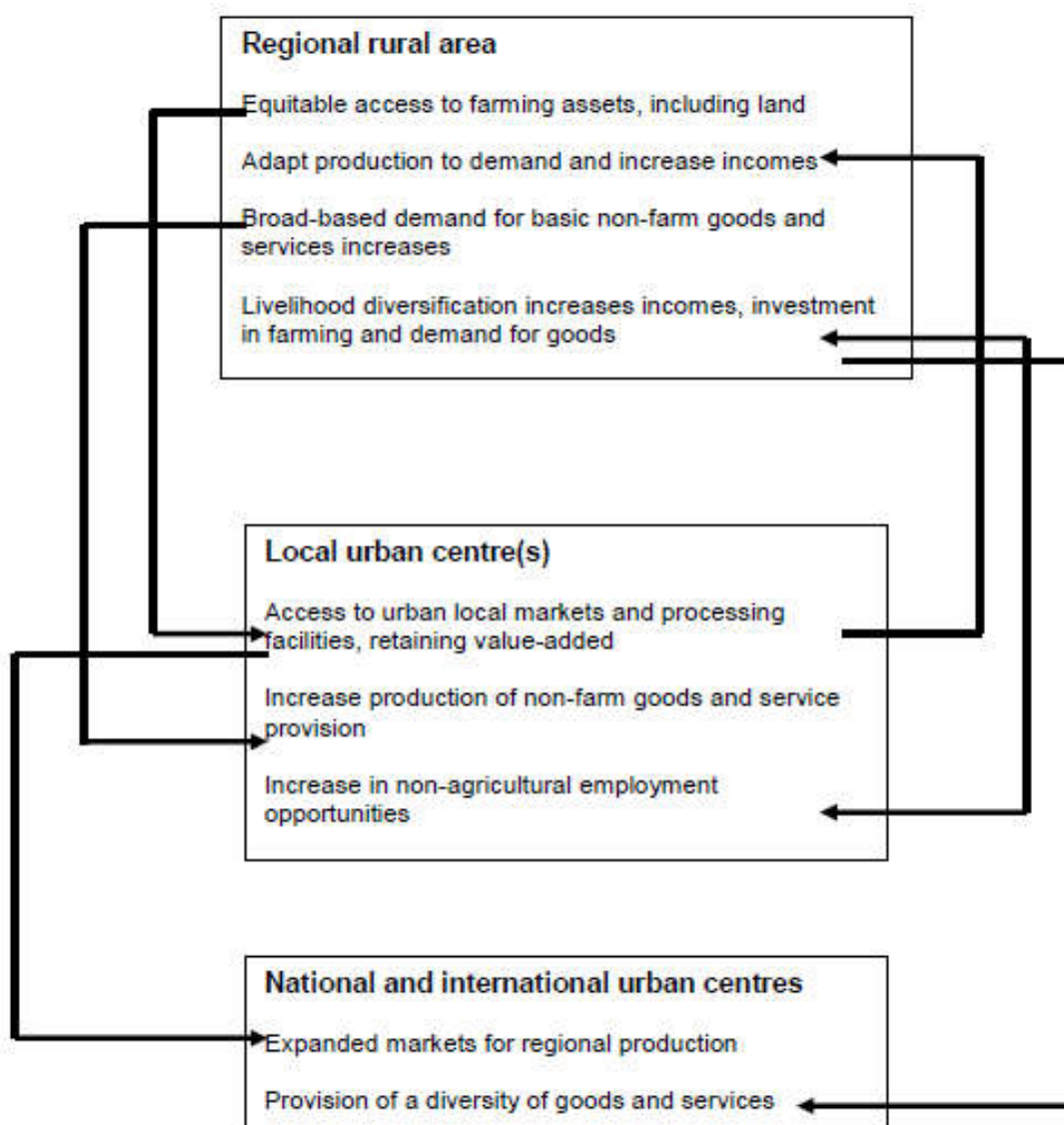


Figure 4 – Positive rural - urban interactions and regional development (Tacoli, 2004)

According to Cattaneo et al (2016) citing research Zeleny (1982), Kaiser et al (1995), Steiner (2000) indicates that territorial issues and problems involve different disciplines and scales; the managing of such problems require a well defined logical framework. Considering

the iterative nature of planning processes and the complex nature of urban and rural, it is extremely difficult to describe the non - linear relations among the multitude of entities that must be organized. In itself, the complexity implies the inability to fully describe the behavior of a given system using a single model or a finite set of models: it is necessary multidisciplinary, dynamic, flexible and adaptive tools and it is crucial the role of integrated assessments as a tool to support the planning and decision-making process. In this perspective, it is possible to use tools to develop Multicriteria Decision Support System (MCDSS).

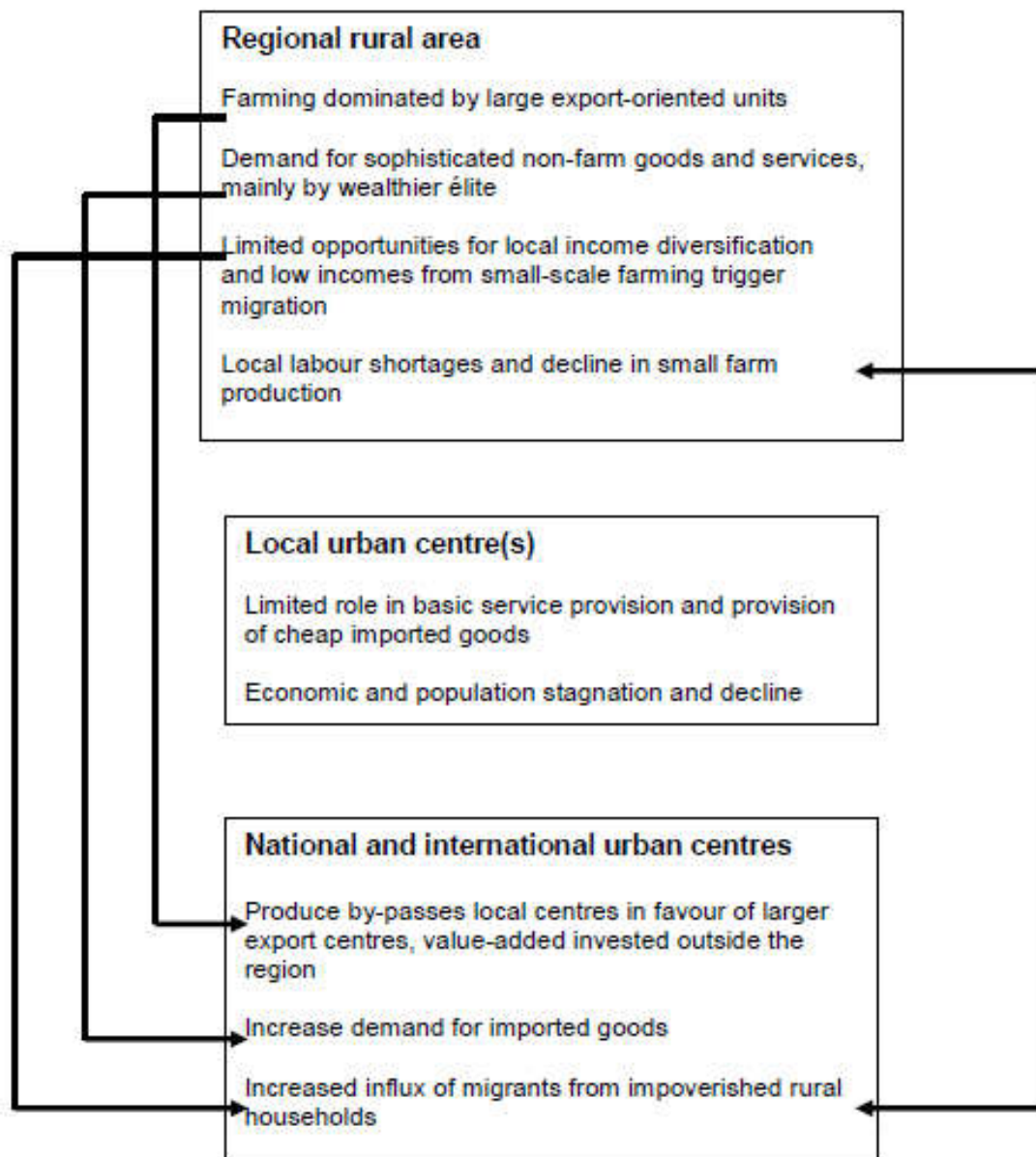


Figure 5 – Negative rural - urban interactions and regional development (Tacoli, 2004)

International context: access to international markets for small and medium-sized producers, with stable commodities prices. Foreign investment supports local production; imports do not compete with locally produced goods. National context: equitable distribution of and access to land; regionally balanced growth strategies including satisfactory provision of infrastructure, credit facilities for small and medium-sized producers, and basic services (education, health, water and sanitation); revenue support to local government; regulated

institutional structure of markets. Local governance: accountable, with adequate resources and capacity; identifies local needs and priorities and responds to them; supports forward and backward linkages between agriculture and services and industry located in local urban centres; regulates local natural resource management; integrated with national planning (Tacoli, 2004).

International context: limited access to international markets for small and medium-sized producers, unstable commodities prices; foreign investment concentrates in large-scale export production, imports compete with locally produced goods. National context: inequitable distribution of and access to land; regionally imbalanced growth strategies including limited provision of infrastructure, credit facilities for small and medium-sized producers, and basic services (education, health, water and sanitation); lack of support to local government; unregulated institutional structure of markets. Local governance: unaccountable, with inadequate resources and capacity; not integrated with national planning (Tacoli, 2004).

CONCLUSION

In the 1950s, communities (urban and rural) according to Patrick (2010) citing research Uhl and Rossmiller (1964) and Bradshaw (2000) indicates that were seen to be detached from their neighbors. The economies of rural and urban communities were separate and distinct. However, in the 21st century, new technologies and transportation innovations have changed these circumstances. The reason is that, benefits of such interrelationships far outweigh any purported competition especially when considered from economies of scale principles in terms of integrated planning approach by urban and rural societies. Associated with the changing rural -urban relationship are improvement in transportation and communications, higher educational attainment, and common social activities (see Stauber, 2001; Isserman, 2005). In developing economies, structural changes often have profound spatial implications.

Lall et al (2006) focuses on labor-related migration from rural to urban areas, a general pattern which plays a central role in the urbanization process and is often viewed as the labor market adjustment to the inter sectoral shift in importance from agriculture to manufacturing and services. Rural to urban migration has historically been an important part of the urbanization process and continues to be significant in scale, even though migration rates appear to have slowed down in some countries. However, in spite of five decades of abundant research, some key policy questions have not found clear answers yet: (1) To what extent is internal migration a desirable phenomenon and under what circumstances?; (2) Should governments intervene and if so with what types of interventions? And (3) For the latter, what should be the policy objectives?. Answering these questions is not easy given that internal migration may have both positive and negative implications. On the one hand, internal migration is a prerequisite for urbanization, a phenomenon whose role has long been recognized as the key correlate accompanying economic growth, at least in the case of European cities in the 19th and early 20th centuries (see Todaro, 1976; Bhatia, 1979; Mohtadi, 1986; Taylor and Adelman, 1996; De Haan and Rogaly, 2002; Kochar, 2004).

Rural - urban linkages include flows of agricultural and other commodities from rural based producers to urban markets, both for local consumers and for forwarding to regional, national and international markets; and, in the opposite direction, flows of manufactured and imported goods from urban centers to rural settlements (see Masduqi et al, 2010; Leonard et al, 2011; Chandy et al, 2014). They also include flows of people moving between rural and urban settlements, either commuting on a regular basis, for occasional visits to urban - based services and administrative centers, or migrating temporarily or permanently. Flows of information between rural and urban areas include information on market mechanisms - from price fluctuations to consumer preferences - and information on employment opportunities for potential migrants. Financial flows include, primarily, remittances from migrants to relatives and communities in sending areas, and transfers such as pensions to migrants returning to

their rural homes, and also investments and credit from urban - based institutions (Tacoli, 2004).

By Dabson (2007) Garrett (2005) suggests the need for new language and new typologies to distinguish differences in livelihood strategies and conditions within urban and rural areas as well as between them. He argues that there needs to be more focus on «systems» and less on «sectors,» paying more attention to economic activity and urban - rural integration within regional economies. Such a regional approach would provide the context for thinking more holistically about the roles that areas along the rural-urban spectrum can play. He concludes: Holding up a rural - urban lens to development is useful for illuminating new ways of thinking about development strategies and about urban and rural transformations, particularly as urbanization and migration continue, as rural livelihoods diversify, and as the agriculture and food system becomes more complex. Both rural and urban livelihoods can benefit from this perspective, but only if it leads to improved and closer interactions, not continued separations in mindsets, policies, and institutions.

Rural and urban development in sustainable context is a complex process that requires an improvement of the existing situation and a removing of the dysfunctions. Over time, the rural area was not addressed as much as urban area, rural analysis is often fragmentary explained and incomplete argued. The system of values owned by rural area is overshadowed by an economic, social and cultural subordination to the city. The connection that is established is a support for the systems analysis of settlements and is the consequence of the functional differentiation between cities and villages, evidenced by the natural, social and economic aspects representative for each system (Ghiurca et al,2012).

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DOI <https://doi.org/10.18551/rjoas.2017-01.04>

FINANCIAL DISTRESS PREDICTION IN INDONESIA COMPANIES: FINDING AN ALTERNATIVE MODEL

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ABSTRACT

This study aims to identify suitable financial distress prediction model for companies in Indonesia. The population and samples used in this study are listed companies with the data range from 2006 to 2015. Samples were selected in a purposive manner at some stage. The first stage of study was choosing a company with negative earnings for two consecutive periods in the study period with total assets of around IDR1 trillion to IDR5 trillion. For a comparison, the researcher chose companies with positive earnings by the same criteria. As independent variables other than using financial ratios, variable corporate governance with ownership structure and macro-economic variables were also used as representation of conditions faced by companies in Indonesia. Analysis method used in this study was Binary Logistic Regression Analysis. The research found financial distress prediction influences by: Working Capital to Total Assets; Current Ratio; Book value of equity to total liabilities; Total Debt to Total Assets; EBIT to Current Liabilities; and Institutional Ownership.

KEY WORDS

Prediction Model, Binary Logistic Regression, Financial Distress

Every company wants to sustain its business, though sometimes it's difficult to maintain it due to unsupportive condition and have to face financial distress. Financial distress is a condition where a company is facing liquidity problems and is unable to pay its financial obligations. A company under financial distress may end up in bankruptcy unless immediate action is taken. Therefore early predictions about the likelihood of financial distress will help the company in finding the best solution to cope with financial problems.

According to Hanafi and Halim (2012), financial problems can be drawn from the two extremes factors, namely short-term liquidity problems (the lightest) to insolvable (most severe). Short term and long term difficulties can disrupt the company operations and even may cause forced delisting by capital market authority for listed companies.

Many studies have been attempted to assess the causes or factors that influence the occurrence of financial distress that use financial ratio indicators. According to Prihadi (2010), the univariate model of cash flow/total liabilities ratio is the most powerful indicator for predicting bankruptcy, while in the multivariate model, the most powerful ratios are: liquidity, solvency, profitability and activity.

Dwitridinda (2007) examined the effect of corporate governance implementation to the possibility of companies experiencing financial distress. The study showed that companies size variables, the implementation of corporate governance, as well as profit have a significant association with financial distress. Meanwhile, Hanifah (2013) study examined the influence of corporate governance structure and financial indicators on financial distress condition. The result showed that the size of the board of directors, managerial ownership, institutional ownership, leverage, and operating capacity have a significant influence on financial distress. Meanwhile, Fadhilah (2013) study investigated the characteristics of corporate governance to the possibility of financial distress. The results showed that the variable of ownership concentration, managerial ownership, the proportion of independent directors, the managerial agency costs, and audit opinion, have a significant effect on the likelihood of financial distress while government ownership variable has no significant influence. Rizki (2014) research reexamined the influence of the ownership structure to the possibility of financial distress in which liquidity served as an intervening variable. The results

showed that (1) there is a significant negative influence of managerial ownership on financial distress.

Anggraini research (2015) of 42 listed companies on Kompas 100 index from 2011-2013 proved that managerial ownership has no significant influence on financial distress like that of institutional ownership has. Whereas liquidity does not moderate the influence of ownership structure to financial distress. Wardhani (2006) stated that the possibility of a company fall under the financial distress is also influenced by the company's ownership structure.

To examine more deeply about the bankruptcy prediction model in Indonesia and analyze various variables influencing the financial distress. This study is conducted to determine which financial distress prediction model appropriate for the company in Indonesia with research sample of companies listed on the Indonesia Stock Exchange within 10 years period (2006 - 2015)

In addition to financial ratio, ownership structure and macro economy are also used as independent variables, which are supposed to represent the conditions faced by companies in Indonesia.

Based on the background described, the formulation of the problem in this research is: «What is the appropriate financial distress prediction model for the company in Indonesia?».

The purpose of this study is to determine what is the appropriate the bankruptcy prediction model in Indonesia.

The results of this study are expected to improve the science in accounting and economics and can be used as a reference for further research. Moreover, the results of this study are also expected to help companies or corporations to avoid and follow up on the possibility of financial distress, for the sake of improved company's development.

LITERATURE REVIEW

Financial Distress Overview. Financial difficulties encountered by the company may vary from liquidity problems (technical insolvency), where the company is unable to meet financial obligations, until solvency issue (bankruptcy), in which financial obligations of the company have exceeded the assets (Hanafi and Hamid,2012). The company is forced to fall under liquidation if the company's outlook is deemed unable to give any prospect. Nevertheless, many companies experiencing financial distress can be rehabilitated for the benefit of bondholders, stockholders, and society. Related to the bankruptcy suffered by Lehman Brothers, Azadinamin (2013) concluded that the signs of bankruptcy can be detected from the financial statements, including:

1. «Chronic inability to generate cash from operating activities»;
2. Massive and systematic investment in working capital items and even more intensive investments in financial tools and instruments;
3. Systematic use of external financing to offset operating deficits, in the which it mainly included long-term debt;
4. Steady deterioration of cash flows over the three years leading to the crisis.

According to Ross et al. (2013), the company is facing bankruptcy when its assets values are equal that of the debts. When this happens, the equity value is equal to zero, and control the company is shifted from stockholder bondholder.

Elloumi and Gueyie (2001) in Hanifah (2013) defined a company under a financial distress when having negative net income for two consecutive years. Classens (1999) in Ward (2006) defined a company under financial distress when having interest coverage ratio of less than one. Kristijadi (2003) in Almilia (2006) stated that a company experiencing financial distress is when a company suffers from negative net operating income and is not paying dividends for one consecutive year.

Financial Distress Model. Z Score bankruptcy prediction model was first introduced by Edward Altman in 1968 (Prihadi,2010). In 1993, Altman continued his research and found the final model by omitting the industry effect with the following model (Altman 1993, in Anjum 2012):

$$Z = 6.56(X1) + 3.26(X2) + 6.72(X3) + 1.05(X4)$$

Where: X1 = Working capital / total assets; X2 = Retained earnings / total assets; X3 = Earnings before interest and taxes/total assets; X4 = N.W. / (book value) total liabilities.

Z score calculation result indicates the company's conditions as follow:

- Z-score <1.10: high bankruptcy probability;
- Z-scores > 2.60: not bankrupt;
- Z-scores between 1.10-2.60: gray area.

The bankruptcy prediction model was also developed by Ohlson in Kumar and Kumar (2012) with the following model:

$$\begin{aligned} O\ Score &= -1,32 - 0,47 (Size) + 6,03 \left(\frac{TA}{TL} \right) - 1,43 \left(\frac{WC}{TA} \right) \\ &= + 0,08 \left(\frac{CL}{TA} \right) - 0,08 \left(\frac{NI}{TA} \right) + 1,83 \left(\frac{EBITDA}{TL} \right) + 0,285 (INTWO) - 1,72 (OENEG) \\ &= -0,52 \left[\frac{NI_t - NI_{t-1}}{|NI_t| + |NI_{t-1}|} \right] \end{aligned}$$

Where: INTWO: Dummy variable, the value of N =1 if net income was negative for the last two years, 0 if otherwise; OENEG: Dummy variable, 1 if total liabilities exceeds total assets, 0 otherwise.

To obtain bankruptcy prediction decision, O-Score must be transformed into probabilities by using Logistic Transformation.

$$= \frac{e^{0-score}}{1 + e^{0-score}}$$

If $P(0-Score) > 0.50 = \text{Bankrupt}$; $< 0.50 = \text{Not bankrupt}$

Springate model was first introduced by Gordon LV Springate (1978), which is a development model of Altman (Husen and Pambekti, 2014). The variables used to predict financial distress in Springate model include: A = Working Capital/Total Assets; B = Net Profit Before Interest and Tax/Total Assets; C = Net Profit Before Tax/Total Current Liabilities, and D = Sales/Total Assets.

$$Z_1 = 1,3 A + 3,07 B + 0,66 C + 0.4 D$$

The output value used is 0,862. If the value of Z_1 is lower than 0,862 exhibiting, the company is expected to go bankrupt (Purnajaya & Merkusiwati, 2014).

Furthermore, Zmijewski also developed a bankruptcy prediction model (Purnajaya & Merkusiwati, 2014) with the model:

$$Z_1 = -4,3 - 4,5X_1 + 5,7 X_2 - 0,004 X_3$$

Where: X_1 = Return On Asset; X_2 = Debt Ratio; X_3 = Current Ratio.

Bankruptcy prediction model was also developed by Jeffrey S Grover in 2001 (Prihantini and Ratnasari, 2013) with the following model:

$$Score = 1,650X_1 + 3,404X_2 + 0,16 ROA + 0,057$$

Where: X_1 = Working Capital/Total Assets; X_2 = Earnings Before Interest and Taxes/Total Assets; ROA = Net Income/Total Assets.

Grover Model categorizes a company into bankrupt if having a score of less than or equal to -0.02 ($Z < -0.02$), while the company categorized as not bankrupt is when $Z > 0.01$.

In addition to the financial ratio indicators, several researchers included corporate governance represented by ownership structure and macro-economic variables as indicators

of financial distress. In this study, researchers added variable of ownership structure and macroeconomic with expectations of representing financial distress issues in Indonesia

Ownership Structure. The ownership structure is one of the corporate governance mechanisms involving the company's internal factors that affect the achievement of corporate goals. Agency problem can be reduced by the ownership structure because it can reduce conflict between management and stockholders. Ownership structure is related to managerial ownership and institutional ownership.

Macro-economic Variables. In general, bankruptcy prediction model only uses financial ratios. However, Mohmad Isa on his research in Malaysia (2004) added macroeconomic variables and found that the Gross Domestic Product (GDP) serves as a significant variable in predicting financial distress in Malaysia. Another study showing a significant influence of GDP to the financial distress GDP was done by Bunn and Redwood, 2003 and Kritzer, 1985 (Alifiah, 2014)

Previous Research. Hanifah (2013) conducted a research on «The Influence of Corporate Governance Structure and Financial Indicators on financial distress». This study failed to prove the influence of board size, independent directors, audit committee size, liquidity, and profitability on the possibility of financial distress.

Fadhilah (2013) conducted a study on «The Analysis of Corporate Governance Characteristic Influence on the Possibility of Financial Distress». The results showed that the variable of ownership concentration, managerial ownership, the proportion of independent directors, the managerial agency costs, and audit opinion, have a significant influence on the likelihood of financial distress, while government ownership variable has no significant influence.

Almilia (2006) conducted a study on «Predicting Financial Distress in Listed Companies Using Logit Multinomial Analysis». The results showed that the financial ratios from the income statement, balance sheet and cash flow statement have a significant influence in predicting financial distress.

Dwitridinda (2007) conducted a study on the «The Influence of Good Corporate Governance Implementation on the Possibility of Companies Experiencing Financial Distress». This study used logistic regression analysis techniques, while the result of the study indicated that the variables of company size, corporate governance implementation, and profit have a significant influence to financial distress.

Pranowo (2010) conducted a study on the «Determinant of Corporate Financial Distress in an Emerging Market Economy: Empirical Evidence from the Indonesia Stock Exchange 2004 - 2008». The results of the study showed that the variables of current ratio, efficiency, equity, and dummy variable of good financial condition, have a positive and significant impact on the financial distress, whereas leverage variable has a negative and significant impact on the financial distress. On the other hand, profit, retained earnings, GCG, and macro economic factors have no influence on financial distress.

Triwahyuningtiyas (2012) conducted a study on the «Influence of Ownership Structure, Board of Commissioner Size, Independent Commissioner, Liquidity and Leverage on the Occurrence of Financial Distress». The results showed that the structure of ownership, board of directors size, liquidity and leverage, have a significant influence to the possibility of companies experiencing financial distress. On the other hand, the size of the board of commissioners and independent commissioner has no influence on the possibility of companies experiencing financial distress.

A study by Rizki (2014), entitled «The Influence of Ownership Structure to the Financial Distress with Liquidity as an Intervening Variable» focused on the manufacturing companies listed on Indonesia Stock Exchange from 2011 - 2013. The results of the study showed that managerial ownership significantly influences financial distress, yet, on the other hand, institutional ownership has no significant effect on financial distress. Managerial ownership and institutional ownership have no indirect influence on financial distress through liquidity as a mediator variable.

A study by Azadinamin(2013) entitled «The Bankruptcy of Lehman Brothers: Causes of Failure & Recommendations Going Forward» concluded that the negative cash flow during the three years was the main reason for the bankruptcy of Lehman Brothers.

As for a study by Mahama (2015) entitled «Assessing the State of Financial Distress in Listed Companies in Ghana: Signs, Sources, Detection and Elimination - A Test of Altman's Z-Score» investigated the application of Altman's Z score on 10 companies listed on the Ghana Stock Exchange (GSE) to determine the level of financial distress. The data used are from year 2007 to 2013. The results showed that 6 (six) companies didn't experience financial distress, while two (2) companies experienced financial distress, while two (2) other companies were facing financial distress.

Alifiah (2013) study entitled «Prediction of Financial Distress Companies in the Trading and Services Sector in Malaysia using Macroeconomic Variables» proved that the debt ratio, total asset turnover, working capital ratio, net income to total assets and base lending rate can predict financial distress of companies in Malaysia

Lastly, a study by Anggraini (2015) entitled «Financial Distress Prediction Model for Indonesian Companies» with samples of companies listed on the Kompas 100 Index during 2011-2013 proved that managerial ownership has no significant influence like that of institutional ownership has. Liquidity as moderating variable didn't affect the influence of the ownership structure to the financial distress.

Theoretical Framework. Based on the theoretical overview and previous studies, it can be concluded that financial distress is a financial condition that occurs prior to the bankruptcy or liquidation.

According to previous models, variables affecting financial distress, among others, are working capital to total asset, retained earnings to total assets, EBIT to total assets, the current ratio and bet worth to total liability, sales to total assets, total debt to total assets, return on assets, EBIT / Current Liabilities, and net income to total assets

Researchers added the ownership structure and macroeconomic variables which are represented by the ratio of total assets to GDP as variables that are expected to reflect the condition of companies in Indonesia.

The ownership structure explains the commitment of the owner to save the company. Thus, the ownership structure can reduce the likelihood of financial distress.

The comparison of company's total asset with GDP is a relative measure of the size of a company to national income of a country. This ratio reflects the company's ability to contribute to the economic growth of a country.

RESEARCH METHODS

Research Hypothesis Based on the theoretical study and the results of previous research, logical explanations, the theoretical framework on various financial ratios, ownership structure, macroeconomic variables, and financial distress, the following hypotheses are developed:

- H₁: There is an influence of working capital to total asset on the financial distress.
- H₂: There is an influence of retained earnings to total assets on the financial distress.
- H₃: There is an influence of EBIT to total asset on the financial distress.
- H₄: There is an influence of current ratio on the financial distress.
- H₅: There is an influence of book value of equity to total liabilities on the financial distress.
- H₆: There is an influence of sales to total asset on the financial distress.
- H₇: There is an influence of total debt to total asset on the financial distress.
- H₈: There is an influence of EBIT to current liabilities on the financial distress.
- H₉: There is an influence of net income to total asset on the financial distress.
- H₁₀: There is an influence of managerial ownership on the financial distress.
- H₁₁: There is an influence of institutional ownership on the financial distress.
- H₁₂: There is an influence of total asset to GDP on the financial distress.

Research Population and Sample. Population and samples used in this study are listed companies during the study period (2006-2015). Samples were selected purposively. The

first phase was done by selecting companies with negative earnings for two consecutive periods within the study period and had total assets of around IDR1 trillion to IDR5 trillion. For a comparison, the researcher chose companies with positive earnings by the same criteria.

Data Collection Technique. The data used in this research is secondary data, in which the data has been processed by primary data collector and through literature study related with the problems analyzed.

Data Analysis Method. Descriptive statistics is used to describe the variables in this study. The analysis tool used is mean, the maximum and minimum (Ghozali,2013). This analysis tool serves to describe the study variables.

Hypothesis testing was originally planned to use the Multiple Discriminant Analysis. However, since it does not meet the requirements of normal data, the data analysis method used Binary Logistic Regression Analysis to see the influence of the independent variable on the dependent variable, each of which has two alternative - bankrupt or not.

Analysis Stages. The followings are analysis done in binary logistic regression analysis. Assessing overall fit models to data can be done with some statistical tests.

a. Nagelkerke's R²:

Assessing the variability of dependent variable that can be explained by the the variability of independent variables to see the Nagelkerke's R² value, or equal to seeing the value of determination coefficient (R²) in the multiple regression analysis. This means that the percentage of dependent variable variations can be explained by the variability of the independent variables, while the remaining percentage is that the variation of the dependent variable is explained by variables outside the model.

b. Classification Table:

This table calculates the total correct and incorrect estimated value. In the column are two predicted value of the dependent variables, bankrupt (1) and not bankrupt (0), while on the line shows actual observed values of the dependent variable bankrupt (1) and not bankrupt (0). In a model, all cases will be on the diagonal line with forecasting accuracy rate of 100%. If the logistic model has homoscedasticity, the percentage of correct value will be the same for both rows.

c. Iteration History: Iteration history is identical to the model accuracy test using ANOVA (F test), or simultaneous hypothesis test.

Parameter Estimate and Interpretation. This test was conducted to test the significance of the independent variables partially to the dependent variable. This test was conducted to test the second hypothesis by comparing the value of Wald (t) with its sig. The hypotheses and analysis are: H₀: Variable X may have no effect on variable Y; H₁: Variable X may affect the variable Y.

Meanwhile, the Hypothesis Test is described as follows:

Based on the calculation, if (X₁) has Wald (t) value with significant value at $\alpha \leq 0.05$ (strong significance) thus the test will show that H₀ is rejected and H₁ accepted. This result shows that (X₁) affects (Y).

Based on the calculation, if (X₁) has of Wald (t) with significant value at $\alpha > 0.05$, the test will show that H₀ is accepted and H₁ rejected.

DATA ANALYSIS RESULTS

The calculation resulted in Cox and Snell's R value of 0.442, while Nagelkerke R² value of 0.590. It means that the variability of the dependent variable that can be explained by the variability of the independent variable is at 59%. The remaining 41% is explained by variables beyond the observation. This value indicates that Nagelkerke R² value is greater than that of the Cox & Snell R square. It shows the independent variables are able to explain variants of financial distress.

Iteration history is identical to the model accuracy test using ANOVA (F test), or simultaneous hypothesis test.

Table 1 – Financial Distress Research Data

n/n	N	Minimum	Maximum	Mean	Std. Deviation
Working Capital Total Assets	340	-4,12297	0,99476	0,0182282	0,56347478
Retained Earning Total Assets	340	-6,33856	28,62154	0,2487869	2,25895866
EBIT Total Assets	340	-0,48919	0,57718	0,0498749	0,11844054
Current Ratio	340	0,04070	19,10017	1,8947367	2,08641556
Book value equity to Total Liabilities	340	-0,96851	30,77952	1,4194250	2,54828645
Sales Total Assets	340	0,00059	10,07927	1,0569852	1,07063772
Total Debt Total Assets	340	0,03147	8,45056	0,6699050	0,71667211
EBIT Current Liabilities	340	-4,56955	5,62374	0,3323533	0,84777220
Net Income to Total Asset	340	-0,60294	0,46239	0,0335620	0,10827028
Managerial ownership	340	0,00000	17,97000	1,4501471	3,79495586
Institutional Ownership	340	20,48000	99,38000	72,7618529	18,89914897
Total Asset to GNP	340	-50055487,1747	115029136,0025	19407853,735627	23168532,201251

Source: Data, processed.

Table 2 – Dependent Variable Encoding

Original Value	Internal Value
NOT BANKRUPT	0
BANKRUPT	1

Nagelkerke's R value is interpreted as the value of R^2 in multiple regression.

Table 3 – Model Fit Assessment with Nagelkerke's R

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	272.869 ^a	0,442	0,590

a. Estimation terminated at iteration number 8 Because parameter estimates changed by less than 0.001.

Table 4 – Model Fit Assessment with Iteration History

Iteration		-2 Log likelihood	Coefficients
			Constant
Step 0	a	471,340	0,000

Constant is included in the models.

Initial -2 Log Likelihood: 471.340.

Estimation terminated at iteration number 1 Because parameter estimates changed by less than .001.

Iteration	-2 Log likelihood	Coefficients												
		Constant	Working Capital Total Assets	Retained Earning Total Assets	EBIT Total Assets	Current Ratio	Book value of equity to Total Liabilities	Sales Total Assets	Total Debt Total Assets	EBIT Current Liabilities	Net Income to Total Asset	Kepemilikan Manajerial	Kepemilikan Institusional	Total Asset to GNP
1	360,113	-1,024	-1,290	,038	-2,085	,038	,158	-,280	-,087	-,544	,784	-,009	,019	,000
2	321,376	-1,608	-3,275	,092	-1,235	,214	,324	-,205	-,067	-,959	-,136	-,015	,022	,000
3	287,234	-2,808	-6,900	,009	-,180	,676	,567	-,103	,820	-1,930	3,137	-,039	,022	,000
4	274,807	-4,694	-8,310	,090	-1,302	,857	1,015	-,135	2,692	-2,551	5,181	-,052	,027	,000
5	272,970	-5,707	-8,857	,099	-1,066	,925	1,323	-,139	3,856	-2,790	5,126	-,061	,028	,000
6	272,869	-5,995	-8,918	,099	-,967	,932	1,420	-,143	4,238	-2,836	5,046	-,064	,027	,000
7	272,869	-6,015	-8,919	,099	-,961	,932	1,428	-,143	4,266	-2,839	5,040	-,064	,027	,000
8	272,869	-6,015	-8,919	,099	-,961	,932	1,428	-,143	4,266	-2,839	5,040	-,064	,027	,000

Constant is included in the model.

Initial -2 Log Likelihood: 471,340.

Estimation terminated at iteration number 8 because parameter estimates changed by less than 0,001.

Through both iteration history tables we can calculate the value of $-2(L_0 - L_1)$ as follows:

$$-2(L_0 - L_1) = 471,340 - 272,869 = 198,471$$

Where: $\alpha = 0,05$ and degree of freedom (df) = $k = 12$, where k is the predictor variable number, the $\chi^2(p)$ value from chi-square distribution table is 22,36203. Since $198,471 > 22,36203$ or $-2(L0-L1) > \chi^2(p)$, it can be concluded that all 12 predictor variables simultaneously have significant influence to financial distress variable.

Parameter Estimate and Interpretation. The following description and Table 5 are used to view the parameter estimate and interpretation.

Table 5 – Hypothesis Testing

n/n	B	SE	Wald	Sig.	Exp (B)
Working Capital Total Assets	-8,919	1,467	36,951	0,000	0,000
Retained Earnings Total Assets	0,099	0,097	1,060	0,303	1,105
EBIT Total Assets	-0,961	4,035	0,057	0,812	0,382
Current Ratio	0,932	0,243	14,708	0,000	2,538
Book value of equity to Total Liabilities	1,428	0,346	17,034	0,000	4,169
Sales Total Assets	-0,143	0,185	0,598	0,439	0,867
Total Debt Total Assets	4,266	1,551	7,570	0,006	71,269
Liabilities Current EBIT	-2,839	0,905	9,840	0,002	0,059
Net Income to Total Assets	5,040	4,633	1,184	0,277	154,511
Managerial ownership	-0,064	0,051	1,591	0,207	0,938
Institutional ownership	0,027	0,010	6,827	0,009	1,028
Total Assets to GNP	0,000	0,000	0,620	0,431	1,000
Constant	-6,015	1,379	19,017	0,000	0,002

Column B: if positive, the voter criteria is in criteria 1, otherwise, it's in criteria 0.

Column Sig: If sig is below 0.05, the independent variables have significant influence on the dependent variable.

The value of the estimated regression model coefficient, thus the logistic regression models are as follows:

$$\ln \frac{p}{1-p} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots \beta_k X_k$$

The logistic regression equation above result above cannot be directly interpreted from the coefficient value as in ordinary linear regression. The interpretation can be done by referring to Exp (B) value or exponent value from the formed regression equation coefficient.

For the predictor variables in this case, where all 13 predictor variables are metric data type, the value of Exp (B) can be interpreted as if the independent variable increase by 1, the financial distress will increase by Exp (B): If Retained Earnings to Total Assets increases by 1 unit, there will be changes in Financial Distress by 1.105. This also applies to interpretation in other predictor variables.

Still through the Variables in the Equation table, the probability value (p-value) of parameter significance can be seen in column Sig., where the p-value smaller than a predetermined level of significance (0.05) can be interpreted that the predictor variable in question has a significant influence on the response variable.

It can be concluded that partially, Working Capital to Total Assets has negative influence on Financial Distress. Retained Earnings to Total Asset has no influence on Financial Distress. EBIT to Total Asset has no influence on Financial Distress. Current Ratio has positive influence on Financial Distress. Book value of equity to Total Liabilities has positive influence on Financial Distress. Sales to Total Asset has no influence on Financial Distress. Total Debt to Total Asset has positive influence on Financial Distress. EBIT to Current Liabilities has negative influence on Financial Distress. Net Income to Total Assets has no influence on Financial Distress. Managerial Ownership has no influence on Financial Distress. Institutional Ownership has positive influence on Financial Distress. Total Assets to GDP has no influence on Financial Distress.

The following equation can find out whether a company goes bankrupt or not:

$$p = \frac{1}{1 + e^{-(-8,919X_1 + 0,932X_2 + 1,428X_3 + 4,266X_4 - 2,839X_5 + 0,027X_6)}}$$

Where: X1: Working Capital Total Assets; X2: Current Ratio; X3: Book value of equity to Total Liabilities; X4: Total Debt Total Assets; X5: Liabilities Current EBIT; X6: Institutional Ownership.

If the p value is greater than 0.5, it can be concluded that the company is likely to experience financial distress (Alifiah,2013) (Ohlson in Kumar and Kumar 2012).

CONCLUSION AND RECOMMENDATIONS

From the results of a study of all companies listed on Indonesia Stock Exchange, it resulted in a conclusion, the model that can be used to predict the financial distress of companies in Indonesia.

Based on the findings and discussion of the research, some suggestions can be made as follows.

- Listed companies can use the model to assess its financial condition, which is expected to prevent financial distress which can lead to bankruptcy.
- Further research should be conducted to test the accuracy of the model and the development of simpler model.

ACKNOWLEDGEMENTS

We thank Ministry of Research, Technology and Higher Education of the Republic of Indonesia for providing financial support in conducting this research.

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DOI <https://doi.org/10.18551/rjoas.2017-01.05>

**КАТАЛОГИЗАЦИЯ РЕСУРСНЫХ ОТРАСЛЕЙ ЭКОНОМИКИ В РУБРИКАТОРАХ И
РЕФЕРАТИВНЫХ БАЗАХ ДАННЫХ**
CATALOGUING OF ECONOMY'S RESOURCE BRANCHES IN RUBRICATORS AND
ABSTRACT DATABASES

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АННОТАЦИЯ

Рассматривается природопользование – обширная сфера производственно-коммерческой и интеллектуальной деятельности, создающей материальные основы человеческого существования. По своему субстрату эта деятельность подразделяется на, (1), обеспечение населения Земли продуктами питания, обозначаемое как сельскохозяйственное либо аграрное производство – агропользование, – и, (2), добычу, переработку и рыночную реализацию минерально-сырьевых и топливно-энергетических ресурсов, необходимых для различных видов промышленного производства и индивидуального потребления. За последним направлением природопользования начиная с третьей четверти XX века почти повсеместно утвердилось наименование «управления минеральными ресурсами» – минералопользования. В России по традиции, сложившейся в начале XX в., оно продолжает отождествляться с «недропользованием». Продемонстрировано, что оба названные направления деятельности обладают ярко выраженными чертами сходства и взаимодействуют друг с другом, а также другими видами природопользования – земле-, водо- и лесопользованием. Проанализировано, насколько взаимосвязанные виды природопользования всесторонне и детально освещаются в предметных классификаторах и реферативных базах данных (РБД): тематическом рубрикаторе журнала *Gospodarka Surowcami Mineralnymi* («Минералопользование») и его публикациях, электронной РБД *Agricultural Resources Information System (AGRIS)*, Универсальной десятичной классификации (УДК), Государственном рубрикаторе научно-технической информации России (ГРНТИ), тематическом классификаторе *Journal of Economic Literature (JEL)*. Сопоставлены преимущества и слабые стороны названных классификаторов и РБД по отношению к рассматриваемой тематике.

ABSTRACT

Nature Management is being overviewed in the article as a wide productive, commercial, and intellectual activities' sphere that create material basis for human species existence. With respect to its substrate, it is subdivided into, (1), providing the humankind with nutrition stuffs, dubbed as agricultural production or Agro-Management, and, (2), mining, processing, and marketing of minerals and fossil fuels, used as resources for various industries and for individual consumption. At the third quarter of XX century just mentioned Nature Management direction has acquired almost globally recognized now name of Mineral Resources Management (MRM). In Russia, according to tradition, emerged at the XX century's first decades, this activity continues to be rendered as Subsoil Usage. As it has been demonstrated, both above-mentioned activity directions are characterized by vividly expressed similarity and are mutually interacting between themselves, as well as with other Nature Management varieties – Land Tenure, Water Usage, and Forest Management. Analysis has been carried out concerning the extent to which interconnected Nature Management types are being comprehensively and explicitly dealt with in subject classifications and abstract databases: *Gospodarka Surowcami Mineralnymi* journal thematic rubricator and its publications content, on-line abstract data base *Agricultural Resources*

Information System (AGRIS), Universal Decimal Classification (UDC), Russian State Rubricator for Scientific and Technical Information (GRNTI), Journal of Economic Literature classification codes (JEL). Advantages and weaknesses of these rubricators and databases with respect to subject areas were considered.

КЛЮЧЕВЫЕ СЛОВА

Природопользование, агропользование, минералопользование, рубрикатор, реферативная база данных.

KEY WORDS

Nature management, agro-management, mineral resources management, rubricator, abstract database.

Россия, занимающая более 17 млн. км² земной поверхности и являющаяся географически крупнейшим государством мира, уже не одно столетие входит в число ведущих производителей и поставщиков на мировые рынки как аграрной продукции, так и минерально-сырьевых ресурсов (МСР), прошедших разные виды и степени переработки. В структуре российской экономики соответствующим отраслям, обычно называемым первичными или ресурсными, традиционно принадлежат приоритетные позиции.

До рецессии последних лет, вызванной продолжающимся мировым экономическим кризисом, резким снижением рыночной конъюнктуры на ископаемые энергоносители, а в значительной мере и неправомерно наложенными на Россию санкциями, минерально-сырьевой комплекс (МСК) страны обеспечивал более половины финансовых средств, поступающих в государственный бюджет из внешних источников. Компенсируя сложившиеся неблагоприятные тенденции, в последнее время к роли одного из основных доноров национального бюджета активно присоединяется российский агропромышленный комплекс (АПК). За счёт его производственно-коммерческой деятельности наращиваются поставки на внутренний и внешние рынки продукции растениеводства, животноводства и смежных отраслей, по которым Россия начинает выходить на лидирующие позиции в соответствующем секторе мировой экономики.

Специфика АПК и МСК как объектов природопользования. Согласно некоторым обобщённым научным классификациям, принятым в России и других странах, обе названные производственно-коммерческие области относятся к сфере природопользования (ПП, рисунок 1). Объединяет и обеспечивает их принципиальную схожесть не только формальная принадлежность к названной обширной сфере человеческой деятельности, но и целый ряд содержательных признаков.

1. В отличие, например, от обрабатывающей промышленности, транспорта и других народнохозяйственных отраслей функционирование АПК и МСК отличается чрезвычайно высокой зависимостью от особенностей и «капризов» природной среды, что существенно осложняет выполнение входящими в комплексы предприятиями многих производственных и логистических операций, а нередко делает их практически неосуществимыми. Природно-климатическими факторами определяется и выраженная сезонность как аграрного, так и многих отраслей горнодобывающего производства.

2. Оба рассматриваемых комплекса характеризуются высокими степенями «осёдлости» – жёсткой привязанности основных производств к определённым районам. Аграрное производство в основном локализуется в пределах плодородных участков земной поверхности, тогда как добыча МСР – в местах сосредоточения необходимых объёмов полезных ископаемых, доступных для экономически целесообразного извлечения.

3. В том и другом случаях фактически приходится иметь дело с исчерпаемыми ресурсами. В МСК это выражается в безвозвратном изъятии запасов исходного сырья при эксплуатации месторождений; в АПК свой вклад в исчерпаемость ресурсов вносят деградация почв в процессе интенсивного земледелия, истощение водных источников,

используемых для орошения, и т. д.

4. Оба комплекса подвержены одинаковым либо близким по своим проявлениям тенденциям: прогрессирующей интенсификации производственных процессов; расширению их промышленных масштабов и охватываемых территорий; переходу производств на более высокие технологические уровни; обобществлению производственно-коммерческих операций и их концентрации в руках немногочисленных крупных товаропроизводителей; интернационализации и глобализации производственной, логистической, финансовой и иных видов деятельности.

5. Как АПК, так и МСК достаточно тесно связаны с другими изображёнными на рисунке 1 направлениями природопользования. Например, к сферам лесо- и землепользования относятся получение разрешений на эксплуатацию земельных и лесных участков, используемых при строительстве горнодобывающих предприятий и добыче сырья, а также последующая реабилитация и рекультивация выделенных угодий.

6. Функционирование обоих комплексов сопряжено с высокими степенями воздействия, чаще всего отрицательного, на окружающую природную и селитебную среду, что заставляет прикладывать существенные усилия и средства для нейтрализации либо компенсации проявлений и последствий данных воздействий.

7. Оптовая торговля продукцией обоих комплексов подчиняется однотипным закономерностям и осуществляется на основе практически идентичных транзакционных институтов, механизмов и правил. Существенная разница наблюдается лишь в розничной торговле, которая является неотъемлемым элементом аграрного сектора экономики и лишь в слабой степени распространяется на МСК, уступая пальму первенства в этом вопросе обрабатывающей и ювелирной промышленности.

8. Наличием общих черт и институтов характеризуется организационная структура АПК и МСК, начиная от сельхозкооперативов (АПК) либо аналогичных им старательских артелей (МСК) и заканчивая мощными транснациональными корпорациями, действующими в рамках обоих комплексов и распространяющими своё влияние на обширные территории и отрасли.

В целях компенсации и нейтрализации некоторых из присущих комплексам АПК и МСК слабых сторон в них с нарастающей интенсивностью внедряются новейшие технологии, создаваемые на основе привлечения фундаментальных и прикладных разделов науки. Приоритетные значения в обоих случаях придаются различным вариантам и технологиям рециклинга, использованию вторичного сырья, разнообразных отходов производства, заменителей исходных ресурсов получаемыми из нетрадиционных источников либо создаваемыми искусственно. В аграрном производстве ведущие роли отводятся созданию мощных специализированных и автоматизированных производственных комплексов, применению достижений генной инженерии, гидропоники, экономичных способов полива растений и т. д. В освоении и промышленном использовании МСР ключевые позиции в последние годы занимает разработка различных вариантов концепций эффективного минералопользования, обозначаемых в англоязычной терминологии как «эффективное управление минеральными ресурсами» – effective mineral resources management (Effective MRM, EMRM) – и реализуемых с помощью автоматизированных систем управления. Последние, в свою очередь, строятся на широком использовании компьютеров, оснащаемых суперсовременным программным обеспечением, Интернета и передовых IT-технологий [1–4].

Наиболее существенные различия между сопоставляемыми комплексами обнаруживаются в способах распоряжения используемой и создаваемой ими собственностью. Если российский АПК, пройдя через несколько этапов радикальных преобразований, связанных с раскулачиванием и массовой коллективизацией, испытанием военным лихолетьем, послевоенным восстановительным периодом, перестройкой 1980-х годов и, наконец, произошедшей в начале 1990-х годов

переориентацией российской экономики на рыночную модель хозяйствования, сумел к настоящему времени в основном приспособиться к функционированию в новых условиях, то отечественный МСК во многом сохраняет черты, свойственные представлениям первой трети XX века. Тогда остро стояли вопросы дальнейшего существования советской республики и необходимости ускоренной индустриализации её на тот момент преимущественно аграрной экономики.

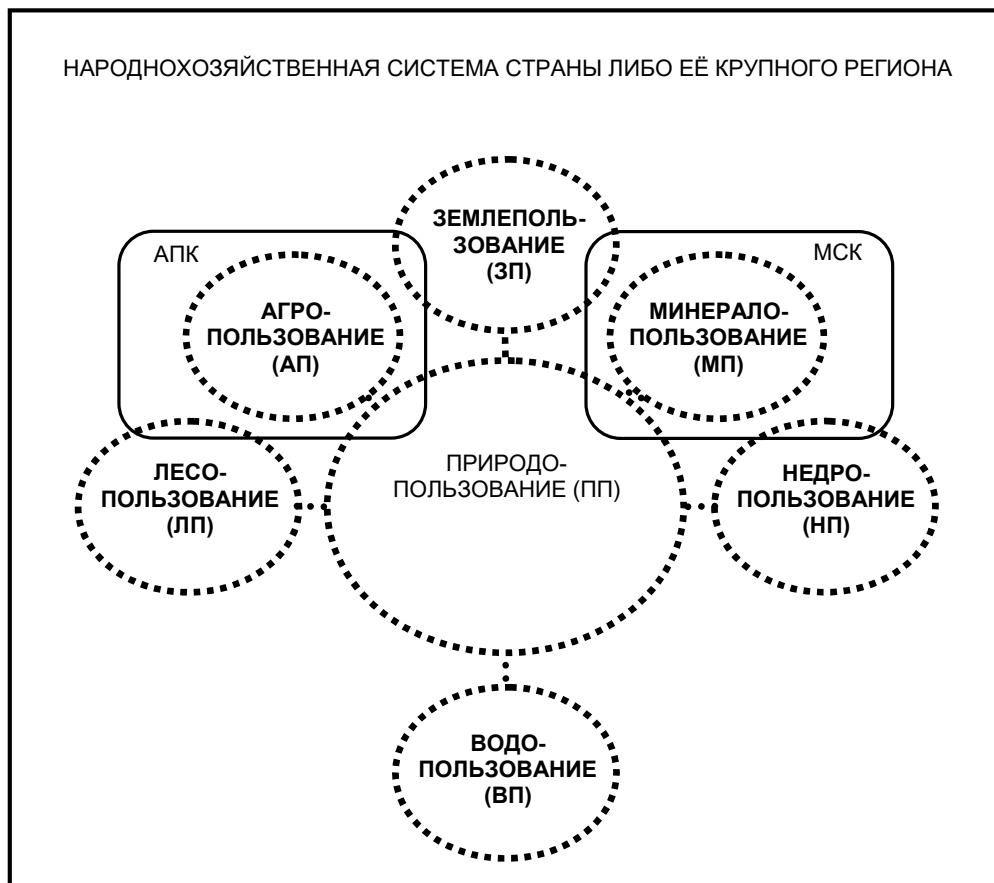


Рисунок 1 – Место, занимаемое агропромышленным (АПК) и минерально-сырьевым (МСК) комплексами в национальном либо региональном природопользовании

Вполне логично, что основная ставка делалась в то время на находящиеся в распоряжении государства «богатства недр» и на стахановские методы их освоения, осуществляемого жёстко управляемыми из федерального центра «недропользователями». Укоренившиеся в те годы представления об освоении МСР как управляемом в приказном порядке «недропользовании» оказались настолько непоколебимыми, что продолжают и поныне определять собой многие управленческие процессы, происходящие в отечественном МСК. Проявляется это, например, в том, что несмотря на наличие более адекватного термина *минералопользование (МП)*, появившегося в отечественной научной публицистике в 1985 г. [5, с.128], освоение и использование МСР, как и в 1920-е годы, обозначаются и рассматриваются не иначе, как «недропользование».

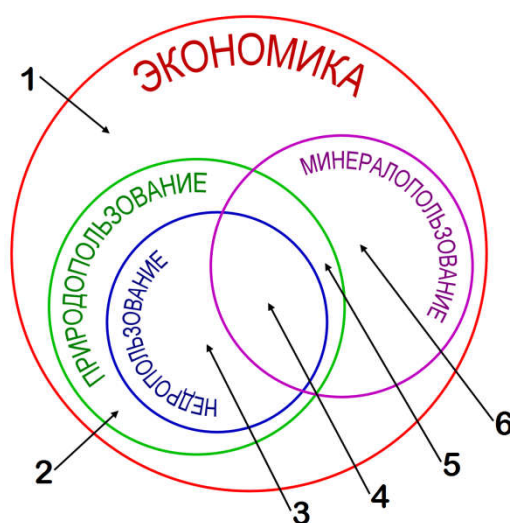
Происходит это несмотря на то, что описываемые, первоначально сугубо промышленные операции, ограничивавшиеся извлечением МСР из недр и их передачей по разнарядкам государству, с переходом к рыночной экономике превратились в сложные промышленно-логистико-коммерческие виды деятельности, охватывающие несопоставимо более широкий круг функций и осуществляющиеся самостоятельно действующими минералопользователями, компетентными в вопросах производства МСР, их рыночной реализации и промышленного использования. В то же

время понятие «*недропользование*», в которое кроме добычи МСР стали входить, например, строительство и эксплуатация метрополитенов, хранилищ радиоактивных отходов, организация и эксплуатация подземных пространств городов и т. д., существенно расширило своё смысловое содержание и поэтому перестало обладать свойством исключительности, необходимым для недвусмысленного обозначения сферы деятельности, связываемой с понятиями МСР и МСК [6].

С учётом описанных обстоятельств присутствующий на рис. 1 блок МСК, изображён лишь как частично пересекающийся с видом деятельности «Недропользование». Подразумевается, что МП и НП как виды деятельности не равнозначны друг другу и должны рассматриваться в соответствии со своими областями определения. Похожая ситуация наблюдается в отношении агропользования, которое лишь взаимодополняющим образом сочетается с нетождественным ему землепользованием. Существенная разница двух рассматриваемых видов деятельности заключается в том, что в отличие от «попавшего в немилость» понятия «*минералопользование*», полностью игнорируемого в официальной документации и многих научных изданиях, его сельскохозяйственный аналог «*агропользование*», наряду с близким по значению «*землепользованием*», являются вполне легитимными и при необходимости употребляются в научной литературе и государственных документах [7–10].

Следует добавить, что изображённая на рис. 1 ситуация является заведомо упрощённой. Проявляется это, например, в том, что АПК и соответствующее ему *агропользование* не ограничиваются взаимодействием лишь с *землепользованием*, а частично распространяются также на *недропользование* (применение добываемых из-под земли удобрений и подземных резервуаров воды для орошения), *водопользованием* (использование в тех же целях открытых водных источников), *лесопользованием* (превращение лесов в пахотные угодья, создание лесозащитных полос).

Аналогичные замечания могут быть высказаны в отношении термина *минералопользование* и отображающего его блока. Для более полного раскрытия содержания названного термина можно обратиться к рисункам 2 и 3 [11], на которых оно сопоставляется с содержанием других фигурирующих на рис. 1 терминов, а также понятием *экономика*, рассматриваемым применительно к народнохозяйственным объектам регионального и национального организационных уровней в качестве обобщающего.



Условные обозначения: 1, 2, 3, 6 – предметные и объектные области, охватываемые понятиями экономика, природопользование, недропользование и минералопользование; 4, 5 – области частичного взаимного наложения рассматриваемых понятий.

Рисунок 2 – Соотношения между экономическим содержанием ряда ключевых понятий, относящихся к объектам высоких организационных уровней

Э	К	О	Н	О	М	И	К	А	1 Межнациональное и межрегиональное регулирование
									2 Антикризисное и форс-мажорное управление
									3 Арбитраж споров хозяйствующих субъектов
									4 Федеральное и региональное кредитование
									5 Государственно-частное партнёрство
									6 Создание территориальной инфраструктуры
									7 Регулирование межотраслевых взаимоотношений
									8 Создание ОЭЗ, ТОР, межотраслевых кластеров
									9 Внешнеэкономическая и транснациональная деятельность
									10 Экономическая глобализация и регионализация
									11 Корпоративное управление и развитие
									12 Создание комплексующих производств
									13 Фундаментальное научное обслуживание
									14 Подготовка кадров
									15 Информационное обслуживание
									16 Автоматизация, компьютеризация, внедрение IT-технологий
									17 Инновационная деятельность
									18 Общий экологический мониторинг
									19 Законотворческая и законоприменительная деятельность
									20 Отраслевое научное обслуживание
									21 Стратегическое таргетирование и управление
									22 Владение и распоряжение природными ресурсами
									23 Геологическое изучение и картирование территорий
									24 Получение доступа к участкам земли и недр
									25 Геологоразведка и экономическая оценка месторождений
									26 Технологическое и организационное проектирование
									27 Обустройство территорий добычи сырья
									28 Создание инфраструктуры прилегающих территорий
									29 Добыча и обогащение минерального сырья
									30 Текущая доразведка месторождений
									31 Первичная переработка минерального сырья
									32 Последующие стадии передельного производства
									33 Складирование сырья и продуктов его переработки
									34 Транспортировка сырья и продуктов переработки
									35 Модернизация производства
									36 Ремонт и обновление техники
									37 Консервация остановленных производств
									38 Аутсорсинг производственных и сервисных операций
									39 Маркетинг продукции и услуг
									40 Коммерческая деятельность
									41 Управление кадрами и межличностными отношениями
									42 Управление экологическими рисками
									43 Техника безопасности и производственная санитария
									44 Реабилитация и рекультивация территорий
									45 Адаптация инфраструктуры отработанных месторождений

★ В отношении понятия недропользование отмечены только процессы и виды деятельности, в которых предусматривается реальное взаимодействие с земными недрами.

Рисунок 3 – Сопоставление перечней процессов и видов деятельности, охватываемых четырьмя рассматриваемыми понятиями

Отражение тематики видов природопользования в классификациях и реферативных базах данных. Анализ отражения особенностей видов природопользования в распространённых тематических классификациях и реферативных базах данных (РБД) производился с учётом нескольких обстоятельств: сложности и многосторонности названных видов деятельности, охвата ими многих областей науки, техники, производства и общественной жизни; наличия присущих им общих черт; взаимного наложения и взаимопроникновения областей и конкретных объектов, попадающих в сферы деятельности соответствующих народнохозяйственных комплексов; активного взаимодействия рассматриваемых направлений природопользования с такими обслуживающими всю национальную экономику отраслями и сферами, как её финансовая система, связь, транспорт, государственное и муниципальное управление и другими.

С учётом перечисленных обстоятельств в ходе анализа не рассматривались подробно названные народнохозяйственные отрасли, действующие на государственном и муниципальном уровнях, а также те разделы науки, техники и производства, которые являются универсальными в отношении обслуживаемых ими отраслей экономики и социальной сферы.

Выше отмечено, что термин «*минералопользование*» появился в отечественной научной литературе в 1985 г. Символично, что одновременно с этим в Польше начал издаваться теоретический и научно-прикладной журнал *Gospodarka Surowcami Mineralnymi* [12]. В подзаголовке этого журнала даётся англоязычный вариант его названия – *Mineral Resources Management*, – что эквивалентно русскоязычному «*Минералопользование*». В полном согласии с названием журнал целиком посвящён вопросам МП. Последнее подтверждается тематикой, сформулированной до появления журнала в печати, и соответствующим ей содержанием последовавших журнальных номеров.

Таблица 1 – Отражение тематических рубрик журнала *Gospodarka Surowcami Mineralnymi* в его публикациях за 2010–2014 гг. и первую половину 2015 г.

п/п	Topic / Тема	S*
1	Scientific background of mineral resource management / Научные основы минералопользования	19(7)
2	Strategy and methodology of mineral prospecting and exploration / Стратегия и методология геологических поисков и освоения месторождений	29(5)
3	Rational and efficient development and utilization of mineral resources / Рациональные и эффективные освоение и использование минеральных ресурсов	47(23)
4	Effective mineral deposits exploitation and losses minimization / Эффективная эксплуатация месторождений и минимизация потерь	32(7)
5	Preparation and processing of mineral raw materials / Подготовка и переработка минерального сырья	39(3)
6	Impact of mineral raw materials industries on the environment / Воздействие минерально-сырьевых отраслей на окружающую среду	30(4)
7	Optimization of resources and reserves management / Оптимизация управления минеральными ресурсами и запасами	1
8	Rational use of mineral raw materials / Рациональное использование минерального сырья	18(5)
9	Economics of mineral industries / Экономика минерально-сырьевых отраслей	32(1)
10	Research on mineral raw materials markets / Изучение рынков минерального сырья	2
11	Mineral policy / Минерально-сырьевая политика	3
12	Accompanying minerals utilization / Использование попутных минерально-сырьевых материалов	3
13	Utilization of recycled mineral raw materials and substitutes / Использование вторичных минерально-сырьевых материалов и их заменителей	1
14	Waste management from extractive industries / Управление отходами горнодобывающих отраслей	33
Итого		289 (55)

* S – суммарная встречаемость тематических категорий в 222 проанализированных публикациях журнала. В скобках приведена статистика условных отнесений, соответствующих случаям, когда содержания конкретной категории и публикации совпадают не полностью.

В качестве примера в таблице 1 сгруппированы результаты тематического контент-анализа публикаций рассматриваемого журнала, появившихся в его номерах в 2010–2014 гг. и первой половине 2015 г. В качестве объектов анализа как правило использовались названия и аннотации статей, а их полные тексты рассматривались лишь в вызывающих сомнения случаях, связанных с затруднённой интерпретацией анализируемых материалов. Необходимо обратить внимание на то, что поскольку содержание статей довольно часто не укладывается в рамки одной классификационной категории, суммарное значение встречаемости тематических рубрик (289) заметно превышает количество включённых в подборку журнальных публикаций (222).

Обращает на себя внимание существенно различающаяся наполняемость тематических рубрик журнала, что, в частности, объясняется разными уровнями их общности, проявляющейся в том, что некоторые из сформулированных редакцией категорий вполне могут рассматриваться как обобщения других, более узкоспециализированных. Такое расхождение в значимости и широте охвата используемых категорий представляется вполне естественным и оправданным, так как перечень тематических рубрик журнала изначально не претендовал и, очевидно, не претендует в настоящее время на роль строгой классификационной схемы, ограничиваясь в основном выполнением ознакомительных и стимулирующих функций по отношению к авторам, направляющим свои работы на публикацию.

В качестве противовеса узкоспециализированной тематике журнала [12] может быть приведена реферативная база данных AGRIS [13–15]. Судя по названию, названная БД посвящена исключительно вопросам агропользования и АПК, однако знакомство с пунктами охватываемой ею тематики развеивает это поверхностное представление. Фактически кроме агро- и смежных направлений природопользования в AGRIS находит отражение проблематика, которую принято относить к строительной индустрии, бытовому обслуживанию населения, здравоохранению и другим областям науки и практической деятельности.

С целью инвентаризации содержания БД AGRIS 132 пункта, составляющих перечень её тематики, были представлены в форме двухмерной матрицы и снабжены метками, индексирующими соответствие каждого пункта шести видам природопользования, присутствующим на рис.1, а также направлениям практической деятельности и научных исследований. Последние ввиду их многочисленности были сгруппированы в три обобщённые категории наук [16]:

1) социальных (СН) – география, история, педагогика, психология, социология, экономика, юриспруденция, документоведение;

2) естественных (ЕН) – биология, география, геология, медицина, почвоведение, физика, химия, математика;

3) технических (ТН) – агрономия, биотехнологии, геомеханика, геофизика, информатика, пищевые технологии, материаловедение, машиностроение, механика, энергетика, системотехника, строительство и архитектура.

Несмотря на то, что в тематике БД AGRIS отсутствуют пункты, целенаправленно посвящённые проблемам МСК, однако с учётом отмеченной объектной и предметной взаимосвязанности агро- и минералопользования данная проблематика также в существенной мере охватывается данной базой. Это, в частности, наглядно подтверждается фрагментом упомянутой матрицы (табл. 2), содержащим пункты лишь одной обобщённой классификационной категории БД AGRIS – «Р Природные ресурсы».

Таблица 2 – Отражение видов природопользования и направлений научных исследований в реферативной базе данных AGRIS (Фрагмент)

Код	Показатель встречаемости классификационных категорий в рубрикаторе РБД AGRIS	Виды природопользования						Группы наук		
		Агропользование	Землепользование	Минералопользование	Недропользование	Водопользование	Лесопользование	Социальные	Естественные	Технические
	Аббревиатура группы классификационных категорий	АП	ЗП	МП	НП	ВП	ЛП	СН	ЕН	ТН
...
P	Природные ресурсы	+	+	+	+	+	+	+	+	+
P01	Охрана природы и земельные ресурсы	+	+	+	+	+	+	+	+	+
P05	Энергетические ресурсы и управление	+	+	+	+	+	+	+	+	+
P06	Возобновляемые источники энергии	+	+	+	+	+	+	+	+	+
P07	Невозобновляемые источники энергии	+	+	+	+	+	+	+	+	+
P10	Водные ресурсы и управление	–	–	–	–	+	–	+	+	+
P11	Дренаж	+	+	+	+	+	–	–	+	+
P30	Почвоведение и управление почвами	+	+	+	–	–	–	+	+	+
P31	Геодезия и картография почв	+	+	+	–	–	–	+	+	+
P32	Классификации и генезис почв	+	+	+	–	–	–	–	+	+
P33	Химия и физика почвы	+	+	+	–	–	–	–	+	+
P34	Биология почв	+	+	+	–	–	–	–	+	+
P35	Плодородие почв	+	+	–	–	–	–	–	+	+
P36	Эрозия, сохранение и восстановление почв	+	+	+	–	–	–	–	+	+
P40	Метеорология и климатология	+	+	+	+	+	+	+	+	+
...
Суммарная встречаемость категорий		112	90	44	38	58	59	64	114	108
Частота встречаемости, %		85	68	33	29	43	45	48	86	82

Из табл. 2 следует, что, несмотря на отсутствие в рубрикаторе AGRIS явного указания на минералопользование как одного из основных разделов природопользования, этот вид народнохозяйственной деятельности, тем не менее, фигурирует в трети классификационных категорий, охватываемых данной РБД. Помимо раздела «Природные ресурсы», частично вошедшего во фрагмент табл. 2, тематика минералопользования представлена также в разделах «В География и история», «С Образование, распространение знаний и консультативная работа», «D Администрирование и законодательство», «Е Экономика, развитие и сельская социология», «U Вспомогательные дисциплины». Это позволяет с помощью БД AGRIS наряду с агропользованием достаточно полно и всесторонне освещать тематику минералопользования.

В популярной в России Универсальной десятичной классификации (УДК) [17–18], отличающейся своей преимущественно общенаучной, естественнонаучной и технико-технологической направленностью, тематике, связанной с агро- и минералопользованием, в разной степени соответствует ряд специализированных и общих категорий. В частности, социально-экономическим и экологическим вопросам рассматриваемых разделов природопользования соответствуют рубрики УДК:

- УДК 332 Региональная (территориальная) экономика. Земельный (аграрный) вопрос. Жилищное хозяйство;
- УДК 332.2 Земля с экономической точки зрения;
- УДК 332.3 Землепользование;
- УДК 334 Формы организаций и сотрудничества в экономике;
- УДК 338 Экономическое положение. Экономическая политика. Управление и планирование в экономике. Производство. Услуги. Цены;
- УДК 339.9 Внешнеэкономические связи. Внешнеэкономическая политика.

Международные экономические отношения. Мировое хозяйство;

- УДК 502 Природа. Охрана окружающей среды;
- УДК 504 Угрозы окружающей среде (Наука об окружающей среде, Общая экология (растения и животные);
- УДК 51-7 Применение математических методов исследования в других областях знания;
- УДК 55 Науки о Земле. Геологические науки; 553 Экономическая геология. Месторождения полезных ископаемых;
- УДК 57 Биологические науки в целом; 58 Ботаника; 59 Зоология; 60 Биотехнология;
- УДК 62 Инженерное дело. Техника в целом;
- УДК 622 Горное дело;
- УДК 63 Сельское хозяйство. Лесное хозяйство. Охота. Рыбное хозяйство;
- УДК 64 Домашнее хозяйство. Домоводство. Коммунально-бытовое хозяйство;
- УДК 65 Телекоммуникации. Транспорт. Бухгалтерия. Организация производства. Связи с общественностью; 658 Организация производства. Экономика предприятий. Организация и техника торговли;
- УДК 66 Химическая технология. Химическая промышленность. Пищевая промышленность. Metallургия. Родственные отрасли;
- УДК 67 Различные отрасли промышленности и ремесел. Производство изделий из различных материалов;
- УДК 68 Отрасли промышленности и ремесла для изготовления и обработки различных изделий;
- УДК 69 Строительство. Строительные материалы. Строительно-монтажные работы;

Благодаря наличию в УДК определителей и других инструментов, используемых для организации справочной информации, возможности этой реферативной системы в отображении разнообразных видов деятельности существенно расширяются. Осложняющими обстоятельствами являются громоздкость этой системы, располагающейся в печатном виде на более чем 8000 страниц [18], и её во многом устаревшая классификационная структура, основы которой были заложены более века назад [19].

В Государственном рубрикаторе научно-технической информации России (ГРНТИ) [20–21] рассматриваемой тематике посвящены разделы.

- ГРНТИ 06 Экономика и экономические науки: 06.56 Общественно-экономическая структура; 06.61 Территориальная структура экономики. Региональная и городская экономика; 06.71 Отраслевая структура экономики; 06.71.63 Экономика природопользования и охраны окружающей среды; 06.75 Экономические проблемы организации и управления хозяйством страны; 06.77 Экономика труда. Трудовые ресурсы; 06.81 Экономика и организация предприятия. Управление предприятием.

- ГРНТИ 27.35 Математические модели естественных наук и технических наук. Уравнения математической физики;

- ГРНТИ 29 Физика: 29.17 Физика газов и жидкостей. Термодинамика и статистическая физика; 29.19 Физика твердых тел.

В разной степени рассматриваемой тематике соответствуют избранные пункты разделов ГРНТИ: «30 Механика», «31 Химия», «34 Биология», «36 Геодезия. Картография», «37 Геофизика», «38 Геология», «44 Энергетика», «50 Автоматика. Вычислительная техника», «52 Горное дело», «53 Metallургия», «61 Химическая технология. Химическая промышленность», «62 Биотехнология», «65 Пищевая промышленность», «67 Строительство. Архитектура», «68 Сельское и лесное хозяйство», «71 Внутренняя торговля. Туристско-экскурсионное обслуживание», «72 Внешняя торговля», «73 Транспорт», «81 Общие и комплексные проблемы технических и прикладных наук и отраслей народного хозяйства», «82.15 Организация управления экономикой», «86 Охрана труда», «87 Охрана окружающей среды. Экология человека».

Применительно к рассматриваемой тематике, занимающей подобающее ей

место в первых рядах общественного и научно-технического прогресса, ГРНТИ в существенной степени подвержен недостаткам, присущим УДК, – громоздкости, а также нединамичной и поэтому быстро устаревающей классификационной структурой. Этим, в частности, затрудняется расширение областей использования этой реферативной системы в современных условиях.

Высокой популярностью в настоящее время пользуется созданная и поддерживаемая Американской экономической ассоциацией Система тематической классификации Journal of Economic Literature (JEL) [22–23]. Рассматриваемым направлениям природопользования в классификаторе JEL практически целиком посвящён раздел «Q Экономика сельского хозяйства и природных ресурсов» и значительная часть содержания раздела «R Экономика города, села и региона». В составы разделов Q и R входят тематические направления, каждое из которых в свою очередь представлено рядом рубрик. В число последних, в частности, входят:

- Q10 Agriculture: General / Сельское хозяйство: основные положения;
- Q20 Renewable Resources and Conservation; Environmental Management / Возобновляемые ресурсы и их сохранение, управление окружающей средой;
- Q23 Renewable Resources and Conservation; Environmental Management: Forestry / Возобновляемые ресурсы и их сохранение, управление окружающей средой: лесопользование;
- Q24 Renewable Resources and Conservation; Environmental Management: Land / Возобновляемые ресурсы и их сохранение, управление окружающей средой: землепользование;
- Q25 Renewable Resources and Conservation; Environmental Management: Water, Air / Возобновляемые ресурсы и их сохранение, управление окружающей средой: атмосферо- и водопользование;
- Q30 Nonrenewable Resources and Conservation / Невозобновляемые ресурсы и их сохранение;
- Q32 Exhaustible Resources and Economic Development / Истощаемые ресурсы и экономическое развитие;
- Q33 Resource Booms (Dutch disease) / Неконтролируемое перепроизводство ресурсов (Голландская болезнь);
- Q40 Energy / Энергетика;
- R10 General Spatial Economics: General, including Regional Data / Пространственная экономика в целом: основные сведения, включая региональные данные;
- R14 Land Use Patterns / Виды и структура землепользования;
- R15 General Spatial Economics: Econometric and Input-Output Models; Other Models / Пространственная экономика в целом: эконометрические модели и модели «Потребление ресурсов – Выпуск продукции»; другие модели;
- R20 Urban, Rural, and Regional Economics: Household Analysis: General / Городская, сельская и региональная экономика: анализ домохозяйств.

Организация отраслей промышленности, связанных с рассматриваемыми видами природопользования, освещается в пунктах раздела L:

- L00 Industrial Organization: General / Организация промышленности: основные положения;
- L70 Industry Studies: Primary Products and Construction: General / Исследования промышленности: сырьевая продукция и строительство. Основные положения;
- L71 Mining, Extraction, and Refining: Hydrocarbon Fuels / Добыча, обогащение и глубокая переработка сырья: углеводородное топливо;
- L72 Mining, Extraction, and Refining: Other Nonrenewable Resources / Добыча, обогащение и глубокая переработка сырья: другие невозобновляемые ресурсы;
- L73 Forest Products: Lumber and Paper / Продукция лесного хозяйства: древесина и бумага;
- L74 Construction / Строительство.

Многие общие и частные вопросы, относящиеся к рассматриваемым видам природопользования, освещаются в разделах JEL:

- A General Economics and Teaching / Экономика и обучение в целом;
- B Methodology and History of Economic Thought / Методология и история экономической мысли;
- C Mathematical and Quantitative Methods / Математические и количественные методы;
- D Microeconomics / Микроэкономика;
- E Macroeconomics and Monetary Economics / Макро- и монетарная экономика;
- F International Economics / Международная экономика;
- G Financial Economics / Финансовая экономика;
- H Public Economics / Экономика общественного сектора;
- I Health, Education, and Welfare / Экономика здравоохранения, образования и социальной сферы;
- J Labor and Demographic Economics / Экономика труда и народонаселения;
- K Law and Economics / Право и экономика;
- M Business Administration and Business Economics; Marketing; Accounting / Администрирование и экономика предпринимательской деятельности; маркетинг; бухгалтерский учет;
- N Economic History / Экономическая история;
- Economic Development, Technological Change, and Growth / Экономическое развитие, технологические изменения и рост;
- P Economic Systems / Экономические системы;

При столь подробном и полном раскрытии в классификаторе JEL проблематики большинства видов природопользования недоумение может вызвать номинальное отсутствие в нём такого важного вида ПП, как минералопользование (рис. 1). Логичное объяснение этого факта заключается в том, что соответствующий популярный англоязычный термин Mineral Resources Management (MRM), появившийся ориентировочно в 1950-1960 гг., просто не попал в поле зрения создателей классификатора JEL, выполнивших принципиальную часть своей работы значительно ранее.

В пользу данного предположения говорит то обстоятельство, что процессам и аспектам освоения и использования так называемых «невозобновляемых» (nonrenewable) или «истощаемых» (exhaustible) ресурсов, к которым относятся многие виды МСР, в классификаторе JEL кроме уже перечисленных достаточно универсальных пунктов посвящён ряд особых содержательных пунктов (L71, L72, Q30 – Q39), раскрывающих важные аспекты процессов минералопользования. Пункт Q33, например, посвящён феномену «голландской болезни» – соскальзыванию экономики страны к режиму неконтролируемой истощительной эксплуатации её природных ресурсов в ущерб устойчивому социально-экономическому развитию, основанному на сбалансированном взаимодействии всех ключевых отраслей национальной экономики.

ЗАКЛЮЧЕНИЕ

В проведённом аналитическом сопоставлении нескольких наиболее популярных реферативных баз данных и тематических классификаторов в очередной раз нашёл подтверждение факт отсутствия реальных классификаций и строящихся на их основе РБД, которые могли бы претендовать на роль универсальных, пригодных для решения любых исследовательских и прикладных задач, возникающих в науке и практической деятельности. Наиболее наглядно это продемонстрировано на примере тематического рубрикатора, в соответствии с которым формируется содержание публикаций журнала *Gospodarka Surowcami Mineralnymi* [12], издаваемого Институтом экономики минеральных ресурсов и энергетики совместно с Комитетом устойчивого управления ресурсами Польской академии наук. В отличие от других рассмотренных

классификаторов и РБД публикации польского журнала отличаются своей строгой ограниченностью вопросами минералопользования, укладывающимися в тематический рубрикатор, остающийся неизменным начиная с появившегося в 1985 г. первого выпуска журнала.

Следует заметить, что термин «минералопользование» как обозначающий вид природопользования не встречается в тезаурусах других рассмотренных в обзоре рубрикаторов и РБД. Несмотря на это процессы, организационные институты и аспекты МП в разной мере фигурируют во всех них.

Международная информационная система по аграрным наукам и технологиям (AGRIS), созданная в 1974 г. Продовольственной и сельскохозяйственной организацией Объединённых Наций [13], является примером специализированной РБД, отличающейся в то же время широким междисциплинарным охватом смежных направлений природопользования и других народнохозяйственных отраслей.

Возникший в США в годы Второй мировой войны тематический классификатор *Journal of Economic Literature* (JEL) [23–25] выделяется своей специализацией в вопросах экономики и вследствие этого претендует на роль «законодателя мод» в отношении детализированного, всестороннего и системно взаимоувязанного освещения её проблематики. Необоснованность подобных претензий подтверждается продолжающимися теоретическими спорами в отношении лежащей в основе данного тематического рубрикатора классификационной схемы [24–25], а также заведомой бесперспективностью его применения к объектам, требующим при своём изучении использования междисциплинарного подхода.

Появившаяся в конце XIX века УДК [19] и введённая в эксплуатацию в начале 1980-х годов ГРНТИ [26], напротив, тяготеют к естественнонаучной и научно-технической проблематике. Несмотря на большой объём и развитую иерархическую структуру этих РБД названное обстоятельство осложняет их использование при работе в рамках социально-экономической проблематики.

Общей слабой стороной рассмотренных и многих других существующих рубрикаторов и РБД является их ориентированность на использование в виде печатных версий. В последних весь используемый тезаурус обязан быть выстроен в единую цепочку, размещаемую на последовательных страницах выпускаемых типографиями печатных томов, что затрудняет фиксацию множественных перекрёстных связей между классификационными рубриками. Острота этой проблемы частично снимается при организации справочной информации РБД в виде многомерных матриц (таблиц), размещаемых в компьютеризированных информационных системах. Тем не менее, проблема остаётся и ожидает своего решения в будущем, например, с помощью «облачных технологий», которые начинают создаваться в общедоступных компьютерных сетях и базах данных.

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DOI <https://doi.org/10.18551/rjoas.2017-01.06>

**СОВЕРШЕНСТВОВАНИЕ ЭКОНОМИЧЕСКОГО МЕХАНИЗМА
ИНВЕСТИЦИОННОЙ ДЕЯТЕЛЬНОСТИ РЕГИОНА**
PERFECTION OF THE ECONOMIC MECHANISM OF INVESTMENT ACTIVITY
OF THE REGION

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АННОТАЦИЯ

В статье рассматриваются вопросы региональной инвестиционной деятельности, дается оценка инвестиционной привлекательности экономики Орловской области для инвесторов. Приведена динамика инвестиции в основной капитал в Орловской области по видам экономической деятельности. Дается анализ инвестиции в основной капитал по источникам финансирования. Предложены рекомендации по совершенствованию экономического механизма инвестиционной деятельности.

ABSTRACT

In article questions of regional investment activity are considered, an assessment of investment appeal of economy of the Oryol region for investors is given. Dynamics of investment into fixed capital is given in the Oryol region by types of economic activity. The analysis of investment into fixed capital on financing sources is given. Recommendations about improvement of the economic mechanism of investment activity are offered.

КЛЮЧЕВЫЕ СЛОВА

Инвестиции, экономика, инвестиционная деятельность, регион, эффективность.

KEY WORDS

Investments, economics, investment activity, region, efficiency.

Чтобы захватить нишу в конкурентном пространстве экономическому субъекту необходимо стабильное развитие, мобильность на современном рынке товаров и услуг. Для постоянного развития необходимы постоянные инвестиции для достижения максимального положительного эффекта. Хозяйствующему субъекту нужно постоянно контролировать свою инвестиционную привлекательность, так как потенциальные инвесторы, прежде всего, оценивают финансово-хозяйственные показатели деятельности за несколько лет, изучают действующую систему финансирования инвестиционных процессов, выявление их негативных моментов и возможных путей их устранения с целью активизации инвестиционной деятельности.

Инвестиции являются одним из определяющих факторов развития государственной и региональной экономики России, в связи с чем возникает проблема поиска инвестиционного механизма, способного обеспечить мощные притоки отечественного и иностранного капитала.

Работа по привлечению инвестиций в экономику регионов считается приоритетной, но не всегда идёт успешно. Зачастую происходит отставание инвестиционных решений от возникающих в регионе потребностях во вложениях, необходимых для решения управленческих задач в условиях нестабильного экономического положения. Экономическая система региона будет устойчивой в

долгосрочном периоде при достаточной гибкости управления и скоординированности стратегий развития региона [11, с. 145].

Регулирование инвестиционных процессов с целью повышения инвестиционной привлекательности региона является основной целью управления инвестиционной деятельностью. Под региональной инвестиционной политикой понимают совокупность мер, направленную на привлечение капитала и использование его в интересах населения региона и отдельных инвесторов и осуществляемых на уровне территориального образования.

К ведущим видам экономической деятельности в Орловской области относятся сельское хозяйство, обрабатывающие производства, строительство, транспорт и связь, торговля.

Как любой «несырьевой» регион, Орловская область длительное время являлась малоинтересной для инвесторов. Поэтому перед региональными властями на протяжении десятилетий остро стояла проблема обеспечения условий для устойчивого развития экономики области и создания максимально благоприятного инвестиционного климата.

Динамика инвестиций (в том числе и в сопоставимой оценке) позволяет говорить о росте инвестиционной привлекательности нашего региона. Даже в условиях сложной внешнеполитической и внешнеэкономической ситуации, неблагоприятных для российской экономики тенденциях на нефтяном и финансовых рынках Орловская область демонстрирует относительно устойчивое развитие. Среди многообразия видов инвестиций наиболее перспективными являются инвестиции в основной капитал (таблица 1).

Таблица 1 – Инвестиции в основной капитал Орловской области по видам экономической деятельности в фактически действовавших ценах, млн. рублей

Вид экономической деятельности	2010 г.	2011 г.	2012 г.	2013 г.	2014 г.	2015 г.
Сельское хозяйство, охота и лесное хозяйство	2271,4	2832,0	4128,7	3842,7	3787,1	4020,3
Рыболовство, рыбоводство	0,2	1,1	0,4	1,6	0,0	0,4
Добыча полезных ископаемых	87,1	2,5	-	5,5	39,5	3,3
Обрабатывающие производства	1630,6	3371,6	3361,7	3729,1	5312,1	4177,8
Производство и распределение электроэнергии, газа и воды	859,9	1852,5	1442,5	1287,0	1587,2	1450,8
Строительство	111,2	282,3	286,1	235,7	292,1	131,8
Оптовая и розничная торговля; ремонт автотранспортных средств, мотоциклов, бытовых изделий и предметов личного пользования	1513,1	702,2	1486,2	1076,8	1399,0	3520,4
Гостиницы и рестораны	14,9	1040,0	495,7	4,6	7,4	153,6
Транспорт и связь	961,1	5125,0	3734,0	3905,7	2591,9	4375,7
Финансовая деятельность	275,1	317,8	450,1	329,7	179,8	86,0
Операции с недвижимым имуществом, аренда и предоставление услуг	2548,7	3326,0	3196,6	3666,2	4101,8	4016,3
Государственное управление и обеспечение военной безопасности; социальное страхование	645,2	1035,8	923,5	1029,2	740,2	575,6
Образование	500,3	765,8	1180,6	1336,9	1161,1	1210,4
Здравоохранение и предоставление социальных услуг	947,7	661,9	2086,5	2038,6	609,0	917,5
Предоставление прочих коммунальных, социальных и персональных услуг	252,0	425,5	544,4	1238,6	1198,7	2209,2
Всего в экономике	12618,5	21742,0	23317,0	23727,9	23006,9	26849,1

Наиболее инвестиционно привлекательными в регионе для инвесторов являются: транспорт и связь; обрабатывающие производства; операции с недвижимым имуществом; сельское хозяйство, охота и лесное хозяйство; оптовая и розничная торговля.

Структура инвестиций в основной капитал области по видам экономической деятельности за рассматриваемый период была не стабильна. Так, если в 2010 году 20,2% (первое место) приходилось на операции с недвижимым имуществом, аренду и предоставление услуг то уже в 2011г. данная статья занимала в структуре только 15,3% (уже третье место). Еще большие изменения в структуре инвестиций в основной капитал области по видам экономической деятельности произошли за период с 2013 по 2015 годы (рисунок 1).

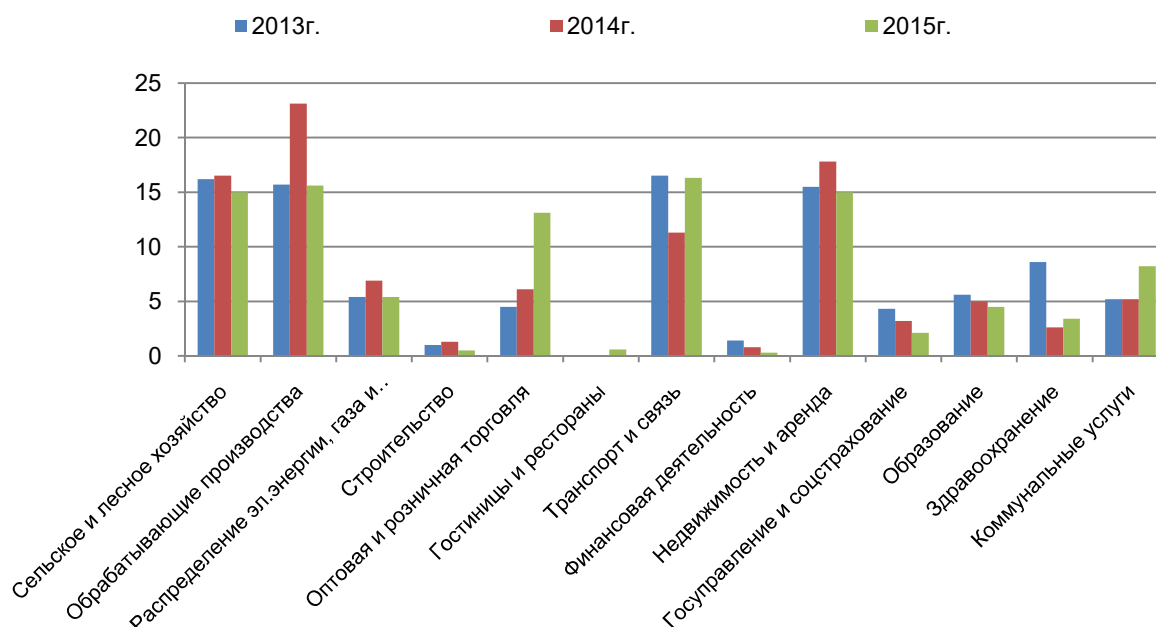


Рисунок 1 – Структура инвестиций в основной капитал по видам экономической деятельности за 2013-2015гг. в Орловской области.

Анализ структуры инвестиционных источников в Орловской области (согласно таблице 2) показывает, что их структура достаточно стабильна: около 60% - это привлечённые средства, порядка 40% - собственные. Только в 2011 и 2015 гг. доля собственных средств, направленных на приобретение основных фондов превышала долю привлеченных средств.

Таблица 2 – Инвестиции в основной капитал по источникам финансирования в Орловской области в фактически действовавших ценах, млн. рублей

п/п	2010 г.	2011 г.	2012 г.	2013 г.	2014 г.	2015 г.
Инвестиции в основной капитал - всего	12618,5	21742,0	23317,0	23727,9	23006,9	26849,1
в том числе по источникам финансирования:						
Собственные средства	5324,3	10934,3	11209,7	10037,2	9358,0	14278,6
Привлеченные средства	7294,2	10807,7	12107,3	13690,7	13648,9	12570,5
из них:						
кредиты банков	2049,5	3555,3	3349,3	3372,6	4689,3	2939,9
заемные средства других организаций	504,2	371,3	447,2	624,2	810,8	807,6
инвестиции из-за рубежа				1,4	-	2,4
бюджетные средства	2314,1	3220,6	5279,7	6204,0	3943,5	4644,8
в том числе:						
федерального бюджета	1460,3	1928,7	3533,7	3859,6	2698,2	3054,3
бюджета субъекта РФ	701,6	1028,9	1434,5	1910,2	986,9	1367,9
средства местных бюджетов	152,2	263,0	311,5	434,2	258,4	222,6
средства внебюджетных фондов	37,4	47,6	67,7	89,8	147,6	58,3
средства организаций и населения на долевое строительство			2575,3	2916,7	3389,4	3402,9
из них средства населения			2441,0	2606,4	2965,3	2380,6
прочие средства	2389,0	3612,9	388,1	482,0	668,3	714,6

В целом по стране с 2014 года наблюдается отток иностранных инвестиций в российскую экономику. Это вызвано введением экономических антироссийских санкций, связанных с событиями на Украине и в Крыму, ухода с отечественного рынка крупных зарубежных компаний, падением мировых цен на нефть, низким курсом рубля, ухудшением международных отношений, ростом инфляции, уменьшением реальных доходов населения.

Обращает на себя внимание, что инвестиции из-за рубежа в Орловской области составляют весьма незначительную долю среди источников финансирования. Иностранных инвесторов отпугивают негативные ожидания развития региональной экономики, падение спроса и тотальная неопределенность.

В настоящее время на территории Орловской области в реализации инвестиционных проектов принимают участие как российские, так и зарубежные компании. В регионе зарегистрировано 176 хозяйствующих субъектов с участием иностранного капитала. Анализ статистических данных показал, что в структуре инвестиций в основной капитал по источникам финансирования в Орловской области четкой тенденции сочетания собственных и заемных средств не прослеживается (рисунок 2).

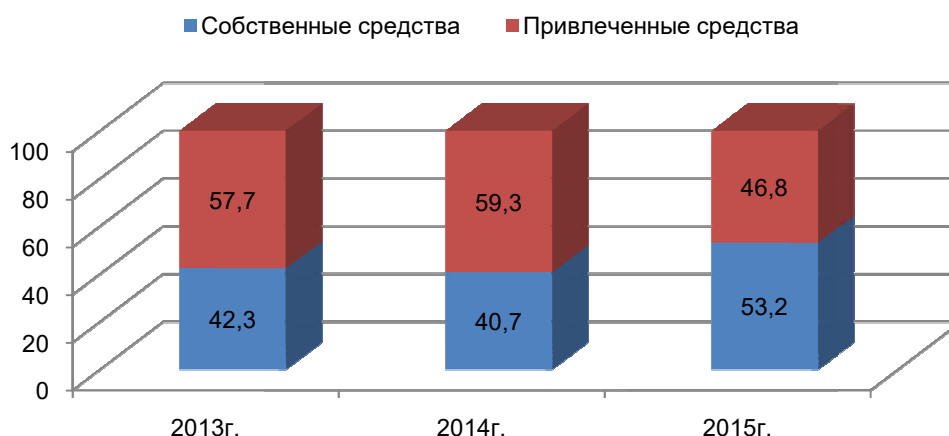


Рисунок 2 – Структура инвестиций в основной капитал по источникам финансирования за 2013-2015 гг. в Орловской области

Следует заметить, что привлечение в Орловскую область масштабных и долгосрочных иностранных инвестиций – это возможность выйти на качественно новый уровень экономического развития. Возможные крупные иностранные вложения в инновационные и инфраструктурные проекты позволят увеличить объем валового регионального продукта, значительно пополнить местные бюджеты, и, следовательно, создать новые рабочие места и повысить уровень жизни населения области.

В области продолжают целенаправленные действия по привлечению инвесторов и улучшению инвестиционного климата. Активизация инвестиционной деятельности, эффективное размещение производств в Орловской области обеспечивается созданием и развитием региональной инвестиционной инфраструктуры, включающей в себя логистические центры, промышленные и индустриальные парки, инвестиционные площадки с необходимыми инженерными, транспортными, энергетическими ресурсами. Однако при неразвитости механизмов управления инвестиционными процессами взаимодействие участников инвестиционных программ затруднено, и сами программы фактически стали разновидностью дополнительного финансирования выполняемых исполнительными органами государственной власти Орловской области текущих функций.

При разработке региональной инвестиционной политики важно предусмотреть оптимальное распределение доходных и расходных полномочий, а также их

финансового обеспечения между бюджетами области и муниципальных образований [9, с. 43]

Это особенно актуально для малых городов Орловщины в силу недостаточного уровня их социально-экономического потенциала, невысоких темпов роста экономики как главной базы формирования регионального и муниципальных бюджетов.

Но, несмотря на ряд факторов, ограничивающих инвестиционную деятельность в Орловской области (недостаточно развитую инфраструктуру, несогласованность взаимодействия власти и бизнеса, несовершенство нормативно-правовой базы и т.д.) можно сказать: Орловская область перспективна с точки зрения инвестиций.

До 2024 года область участвует в специальной программе развития, инициированной государством. Под пристальным вниманием находятся такие сферы, как машиностроение, металлообработка, пищевая и перерабатывающая промышленность, приборостроение. Есть множество предложений от инвесторов, которые хотят поддерживать и развивать эти сферы.

Во многом перспективы региона определяет количество молодых специалистов и студентов. Это лишний раз доказывает, что при развитии той или иной отрасли всегда можно будет найти квалифицированных работников [8; 10].

С более подробным анализом инвестиционных перспектив в Орловской области можно ознакомиться на официальном сайте «Инвестиционный портал Орловской области». На сайте пользователям доступны различные данные, статистика, последние новости, проекты и многое другое. Региональные власти большое внимание на протяжении десятилетий уделяли вопросам эффективной инвестиционной политики. Принят ряд конкретных мер для создания максимально благоприятного инвестиционного климата и роста деловой активности хозяйствующих субъектов (так в частности, 26 февраля 2016 года Правительство Орловской области утвердило Инвестиционную стратегию Орловской области «Открытый Орел» на период до 2020 года).

Одним из эффективных способов создания благоприятного инвестиционного климата и реализации инвестиционной стратегии в Орловской области является развитие уже созданных и создание новых Индустриальных парков: «Зелёная роща», «Орел», «Ливенский».

Для реализации инвестиционной политики Орловской области региональным властям следует обратить внимание на реализацию основных элементов государственной поддержки инвестиционной деятельности: на организационное и правовое сопровождение инвестиционных проектов по принципу «единого окна»; на обеспечение производственных площадок объектами инфраструктуры на территории муниципальных образований; на предоставление государственных гарантий Орловской области; на субсидирование процентных ставок по кредитам, привлекаемым для реализации инвестиционных проектов; на налоговые преференции.

В качестве перспективных направлений сотрудничества потенциальных инвесторов с нашим регионом следует рассматривать: логистический кластер, девелопмент; фармацевтическую промышленность; приборостроение и электронику; пищевую и перерабатывающую промышленность; производство строительных материалов.

Необходимо направить внимание властей на реализацию инвестиционных предложений, заявленных на Инвестиционном портале Орловской области: организация на территории Орловской области современного предприятия, специализирующегося на выращивании овощей в закрытом грунте; организация на территории Орловской области регионального оптово-розничного, торгово-складского и перерабатывающего комплекса; модернизация лифтового хозяйства; комплексная застройка территорий, включая снос ветхого и аварийного жилья; модернизация системы водоотведения и очистки сточных вод; строительство комплексов крупного рогатого скота на 1200 голов; создание птицеводческого комплекса по производству пищевого куриного яйца; строительство в Орловской области завода по глубокой

переработке зерна; строительство в Орловской области сахарного завода мощностью 12 тыс. тонн переработки сахарной свеклы в сутки.

Следует не упускать из виду инвестирование в туристический бизнес. О туризме, как перспективной отрасли экономики сейчас говорят на всех уровнях власти.

Однако, по результатам проводимого Центром информационных коммуникаций «Рейтинг» совместно с журналом «Отдых в России» второй год подряд исследование, посвященное туристической привлекательности регионов РФ, показало, что Орловская область заняла 75 место из 85 субъектов (по сравнению с рейтингом 2015 регион опустился на 6 строчек). Это худший результат среди регионов ЦФО.

В 2016 году в области активизировали процессы привлечения инвестиций в туристический бизнес. Для повышения привлекательности туристического бизнеса можно разработать инвестиционные предложения по развитию туристических маршрутов по городам Орлу и Болхову, в музей-заповедник И.С. Тургенева Спасское-Лутовиново, в национальный парк «Орловское полесье».

Инвестиционная привлекательность региона лишь отчасти обусловлена экономическими расчетами потенциального инвестора. В современном мире, перегруженном информацией, поведение предпринимателей, желающих инвестировать средства в конкретный регион, все больше основывается не на рациональных, объективных мотивах, а на впечатлениях, мнениях, стереотипах.

Результатом проведения целенаправленной инвестиционной политики является относительная стабильность объемов финансовых и нефинансовых вложений, повышение инвестиционной активности в регионе. Об этом, например, свидетельствуют итоги «Национального рейтинга состояния инвестиционного климата в субъектах Российской Федерации». По результатам рейтинга Орловская область вошла в число регионов с комфортными условиями для бизнеса (группа II). В группу вошли 24 региона, включая соседние по ЦФО регионы: Тульская, Курская, Московская, Воронежская области.

Таким образом, для улучшения инвестиционного климата Орловской области региональным властям необходимо разработать и последовательно реализовывать комплекс мероприятий, позволяющий максимально оперативно устранять административные барьеры и методические проблемы, возникающие у предпринимателей, оказывать консультационную помощь при взаимодействии с различными государственными структурами, инфраструктурными компаниями. Необходимо продвигать в целях рекламы инвестиционного потенциала области ежегодные публикации в печатных средствах массовой информации, издавать рекламную продукцию, позиционирующую положительный имидж региона, в том числе на основе применения передовых информационных технологий, активно использовать возможности информационно-телекоммуникационной сети «Интернет».

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DOI <https://doi.org/10.18551/rjoas.2017-01.07>

INFLUENCE OF SERVICE AND SATISFACTION TOWARDS CUSTOMER'S LOYALTY: A STUDY IN STATE-OWNED ISLAMIC BANK IN MAKASSAR, INDONESIA

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ABSTRACT

The number of Islamic bank in Makassar keeps increasing. The bank grows rapidly because of some competitive advantages it offers. In order to provide prime service for their customers, Islamic banks are supposed to improve their quality of service. Otherwise, customers may choose to save their money in other banks. Service quality is essential in order to survive business competition and maintain customer's loyalty. The purpose of the study is: 1) evaluate and analyze the influence of quality of service towards customer's loyalty and 2) evaluate and analyze the influence of satisfaction towards customer's loyalty. The setting of the study was 4 (four) Islamic banks in Makassar. The population was 200 state-owned Islamic bank customers in Makassar. The study was primary study. The data analysis method was SEM (Structural Equation Model). The findings showed that first, the quality of service had direct and non-significant influence towards customer loyalty and second, customer satisfaction has direct and significant influence towards customer loyalty.

KEY WORDS

Quality of service, satisfaction, customer loyalty.

Growth of banking industry and financial services has been significant for the last few years as the result of technological advances and deregulation. In the world of banking, Islamic banks is a relatively new type of service in banking industry that applies Syariah law in each of its activity. Due to tight competition in business that sells service, Islamic banks should understand the right strategy to win the competition.

Islamic banking has massive potentials since 1.2 billion of the populations are Moslem and their GDP is more than 1.3 billion US dollars (Skha Consulting, 2001). The countries with the highest Moslem populations are Indonesia, India, Pakistan and Bangladesh respectively. Furthermore, Kuwait has quite successful penetration of Islamic banks; the market share of Islamic banks in the country is approximately 30%. The proportion of Islamic banks in Saudi Arabia is 12%, that in Brunei is 11%, in Malaysia is 5% while the national market share of Islamic bank is 1%. Customer loyalty is the end-goal of banking industry. Satisfied customers will not be hesitant to give positive testimony about banking products they use. Such testimonies have high credibility as loyal customers do not receive anything by making recommendation about banking service or banks they use.

It is no doubt that customer loyalty is pivotal in banking industries. Banks make serious effort to maintain long-term and/or lasting customers. Darsono (2004) explained that satisfied customers are still using products from competitors. In addition, Griffin (2005) showed that repetitive purchase that represents loyalty behaviour will develop customer retention.

Customer satisfaction goes hand-in-hand with customer loyalty. It is very likely that loyal customers will become word of mouth advertisers, but there is huge chance they are loyal to certain banking products and service (Tjiptono, 2005:386). Oliver (1997) stated that loyalty is strong commitment and encourage repeated purchase. Customer loyalty means customer's commitment to keep using products or service of a bank.

To measure customer satisfaction, customer basically will compare quality of service they expect with the quality of service they receive. Comparison of both perceptions results in customer satisfaction and dissatisfaction. Based on the previous elaboration, it can be concluded that service quality is the determining factor for customer satisfaction. When customer is satisfied with certain banking service, then it is highly likely that the customer will

make transaction in the same bank repeatedly (Lupiyoadi, 2001: 231).

Makassar is selected as the setting of the study since until the end of December 2015 there have been 6 branches of Islamic banks (Mandiri and Muamalah) as well as and 9 Islamic business units (BRI, BNI, BTN and Andamon). In the development, Islamic bank strive on providing maximum service to its customers not only for ensuring customer satisfaction but also maintaining loyal customers.

One of the important factors of loyalty is satisfaction. Satisfied customers will make recommendation and ask other people to become customers of the bank in which they have saving account (Ilham, 2008). Based on Ilham (2008), Islamic bank's method to increase the number of customers had yet been effective. None of conventional bank customers was interested in moving their saving account to Islamic bank. There Hal ini disebabkan diantara respon yang telah menjadi nasabah bank konvensional tidak ada satupun yang berniat untuk memindahkan rekening mereka ke bank syariah. 26% of the respondents thought that bank interest is the same as usury and 27% of them admitted that they had very little idea about Islamic bank.

Based on the elaboration, the researchers think there is a need to conduct a study focusing on quality of service, satisfaction and loyalty of the Islamic bank customers in Makassar. It is expected that the findings become the means of evaluation and reference for Islamic banks to develop customer loyalty in order to maintain the existence of Islamic banks in Makassar.

LITERATURE REVIEW

Studies that analyzed causal relationship between quality of service and customer loyalty continuously had been frequently conducted such as Qawi (1999), Kandampully (1998), Lewis and Soureli (2006), Kasim and Abdullah (2010), and Liao-Hsi-Kun (2012) that showed positive, significant correlation between quality of service in improving customer loyalty; customer loyalty would increase when the quality of service met customer's expectation.

Selness (2003) conducted a study of which setting was 106 companies consisting of telephone and insurance company as well as university. It analyzed the influence of customer satisfaction towards loyalty; the finding was customer satisfaction had positive influence towards loyalty. Frimpong (2013) concluded that customer satisfaction and customer loyalty had become the focus of numerous studies such as Formell, et.al. (1996). Lewis and Soureli (2006) stated that important concept to take into account in developing customer loyalty was customer satisfaction. Satisfaction was measured by how well customer expectation was fulfilled. On the other hand, customer loyalty was overall indicator whether or not customer wanted to repurchase.

According to Kandampully (1998), customer loyalty was related to customer satisfaction. Customer was interested in banks that offered lower interest in loan or higher deposit rates. On the other hand, loyal customer decided to keep saving money in certain due to its prime service such as professional staffs, good communication and responsive staffs. Some methods to improve customer loyalty were giving accurate information on time such as one about the use and benefit of banking service.

Qualified service of Islamic banks resulting in satisfied customers represented how much care Islamic bank staffs had for their customers. Personal contact between customers and staffs was essential part of customer-company interaction; thus resource company had such as staff and technology should be utilized wisely so that customer loyalty could be maintained and developed (Taap, et.al., 2011). Kasim and Abdullah (2010) revealed that even customers who had expressed their satisfaction toward certain brand may use another brand and customer who did not express their satisfaction kept using the same brand. Bloemer, Josee, and Ko de Ruyter (1998) and Reichheld (1996) had the same idea that satisfaction had positive influence towards loyalty; however, it was important to highlight that increasing satisfaction did not always result in increasing loyalty, in the same degree (Reichheld, 1996). Therefore, the correlation between satisfaction and loyalty was not a

linear one and as the consequence, satisfied customer may still shift to other brands (Amin, Isa, and Fontaine, 2011).

Conceptual Framework of the Study. The conceptual framework described the correlation between the variables in the study. The Relationship between the variables of the study was based on the theory of service quality, satisfaction, loyalty and previous research findings related to the relationship between service quality and satisfaction to customer loyalty. Based on the the correlation between the variables be it based on the theory or the previous studies, the conceptual framework of the study was formulated as seen from Fig. 1.

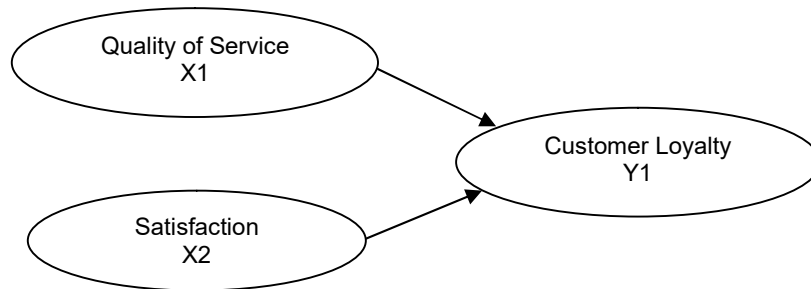


Figure 1 – Conceptual Framework

Hypothesis. According to Kandampully (1998), customer loyalty was associated to customer satisfaction. Customers would be attracted to competitors with lower rate on loan or higher interest on deposits. On the other hand, loyal customers preferred qualified service they had received such as professional staff, good communication and responsive staff. Customer loyalty could be developed by providing timely, trustworthy information, for example one about the use and benefits of banking services.

Satisfied customers/clients had positive attitude towards most of the aspects associated to Islamic banks. The banks had competitive advantage in gaining customer loyalty. In general, satisfied customers tend to make repeat purchases. It reflected strong loyalty towards Islamic banks (Taap, et. al., 2011).

When customers/ clients were satisfied with the services given by Islamic bank staffs (personal contact with the staffs), it meant the staffs cared about the customers. Contact between the staffs and customers become important part of customer and company interaction; therefore, company's resources such as staffs and technology should be utilized to maintain and enhance customer loyalty (Taap, et.al., 2011). It showed obvious gap and therefore, the first hypothesis of the study was:

H1. Service would improve customer loyalty. Satisfaction the customer got may increase their purchase intensity (Assael, 2007). Optimum level of customer satisfaction encouraged loyalty especially for satisfied customer. Customer loyalty was considered as the strength of the relationship between personal relative attitude and repeated business. It was vital since it was mediated by social norms and situational factors. In conclusion, customer loyalty was considered as the strength of the relationship between the individual relative attitude and repeated business.

The relationship between satisfaction and loyalty was different from what company had imagined. Jamal and Naser (2002) mentioned that the relationship between satisfaction and loyalty was unclear. Kasim and Abdullah (2010) revealed that a number of customers expressing satisfaction switched to other brands while dissatisfied customers did not. Bloemer, Josee, Ko de Ruyter (1998), Reichheld (1996) had similar idea that satisfaction had positive influence to loyalty, but increase in satisfaction did not always result in increasing loyalty, to the same degree (Reichheld, 1996). Therefore, the relationship between satisfaction and loyalty was not linear one so that satisfied customers were still able to switch brands (Amin, Isa, and Fontaine, 2011). Oliver, et. al., (1997) suggested that the relationship between customers and customer loyalty was non-linear. Anderson and Sullivan (1993) also stated that the relationship between customer satisfaction and loyalty was non-linear either.

O'Mallaey (2008) highlighted that the relationship between satisfaction and loyalty was not linear and consequently, promotion as reward for loyal customers was dangerous. The danger was companies may be trapped in the circle of marketing and consumers would not find any reason to make repeat purchases. Loyalty was criticized because although customers were satisfied with the service got, they would keep shifting to other products/ service because they believed they would get better value, comfort and quality.

Other studies noted that customer satisfaction had positive influence on customer loyalty research for example a study conducted by Selness (2003) in 106 companies that consisted of the telephone company, insurance companies and university. Frimpong (2013) stated that customer satisfaction and customer loyalty had become the focus of some researchers such as Formell C, MD Johnson, et.al (1996). Lewis and Soureli (2006) stated that the important concept to be considered in designing loyalty program was customer satisfaction. Satisfaction was measured on how well customer expectations were met. Meanwhile, customer loyalty was the overall measurement whether or not customer wanted to make another purchase. Thus, the second hypothesis was:

H2. Satisfaction will increase customer loyalty.

OPERATIONAL DEFINITION

Service (X1). Quality of service is a condition that described customer's perception towards service performance by Islamic bank. The indicators of the service quality variable in the study were developed based on the ideas by Parasuraman et al., (1994), Abdul Qawi (1999), Othman and Owen (2001); it was is the first developed indicator for Islamic banking industry. Carter model was six-dimensional models developed based on SERVQUAL and a new dimension called in accordance to the Islamic law (Compliance/ adherence to Sharia). Six indicators of CARTER were (Compliance, Assurance, Reliability, Tangible, Empathy, and Responsiveness).

Satisfaction (X2). Customer satisfaction is a condition that describes customer's response toward evaluation of experience in using Islamic bank service satisfaction of Islamic banks in increasing customer loyalty. The customer satisfaction indicators were adapted based on the ideas proposed by Engel et. al. (1995) and Kotler (2003). The indicators were Experience and Overall Satisfaction.

Customer Loyalty (Y1). Customer loyalty was positive attitude of customers towards Islamic bank customers and commitment to keep being customers in the future. The indicators to measure customer loyalty were adapted from Dharmamesta (2001), Peter and Olson (2002) namely: repurchase or willingness to keep being customer of certain Islamic bank and increase number of banking transaction in Islamic bank; give information to other people in the form of recommendation or promote products of Islamic bank to other customers; become loyal customer of Islamic bank.

RESEARCH METHODS

The setting of the study was state-owned Islamic Banks that had Islamic Business Unit in Makassar (Mandiri Syari'ah, BNI Syari'ah, BRI Syariah, and BTN Syari'ah) for easy access to information. The subjects of the study were the customers of the state-owned Islamic Banks that had Islamic Business Unit in Makassar (Mandiri Syari'ah, BNI Syari'ah, BRI Syariah, and BTN Syari'ah). The study lasted for six months (June 2015 – December 2015). The data analysis method was SEM (Structural Equation Model) with AMOS program. (Ghozali, 2008:18) Such analysis was categorized as quantitative analysis.

FINDINGS AND DISCUSSIONS

Hypothesis 1: Increasing quality of service increased customer loyalty. The quality of service in the study adopted Parasuraman et al, (2002)'s idea of quality of service that had five dimensions. Parasuraman et al, (2002)'s idea was re-evaluated by Abdul Qowi (2009),

and Othman and Lynn Owen (2001) who classified "servqual" into 6 dimensions called CARTER (Compliance, Assurance, Reliability, Tangibles, Empathy, Responsiveness); CARTER was associated directly to customer loyalty. The loading factor of 0.126 and probability of 0.110 showed that the quality of service did not have significant influence towards the loyalty of the state-owned Islamic bank in Makassar's customers. The finding was at the opposite of the findings of the previous study conducted by Kazi Omar Siddiqi (2011), Hafeez Samraz and Muhammad Bakhtiar (2012) and Liao-Hsi-kun (2012).

Based on the analysis, the first hypothesis, increasing quality of service increased customer loyalty, was rejected or could not be accepted.

Hypothesis 2: Increasing satisfaction increased customer loyalty. The finding showed that satisfaction had positive and significant influence towards customer loyalty where the loading factor was 0.338 and probability was 0.021. It meant the more satisfied the state-owned Islamic bank customers were, the more loyal they were. On the other hand, the less satisfied the state-owned Islamic bank customers were, the lower level of loyal they had to the banks. Based on the findings, the second hypothesis, increasing satisfaction of the state-owned Islamic bank in Makassar customers improved the level of the customer loyalty was accepted.

The finding was corroborated to the findings of Selness (2003)'s study in 106 companies consisted of universities, telephone and insurance companies. Frimpong (2013) described that customer satisfaction and customer loyalty had become the focus of numerous studies such as Formell (1996). Customer satisfaction was vital element to design loyalty program. Satisfaction was measured based on how well customer's expectation was fulfilled.

Limitation of the Study. The study was limited to 4 state-owned Islamic banks that had Islamic business unit in Makassar. The subjects were the customers of the four banks who had different characteristics to the customers of other Islamic banks in Makassar. As the result, the findings could not represent all or other Islamic banks in Makassar (could not be generalized).

CONCLUSION AND SUGGESTIONS

Based on the findings and discussion, the study can conclude the following points:

Quality of service is pivotal element of banking industry so that banks are able to carry out service quality that meets the expectation and perception of their customers. Based on the findings of the study, the quality of service in the state-owned Islamic banks in Makassar did not have direct influence towards the customer loyalty.

Customer satisfaction is a condition that explains the customer's response towards their experience in using the service of the Islamic banks as well as satisfaction in improving the customer's loyalty. The customer satisfaction had direct influence towards the customer loyalty in the state-owned Islamic banks located in Makassar.

According to the conclusion, several suggestions can be made as follows:

The service quality of the state-owned Islamic banks in Makassar that have Islamic business units should be improved to maintain certain level of customer loyalty. The type of service that needs improvement is Syariah compliance.

Future researchers should expand the subjects of the study from one city to one province, for example taking several municipalities in South Sulawesi as subject. Future researchers may also analyze other variables such as fairness in the outcome or customer trust. It is expected that analyzing other variables will better represent the future need of Islamic bank.

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DOI <https://doi.org/10.18551/rjoas.2017-01.08>

IMPACT ANALYSIS OF SHOPPING AREA ON THE IMPROVEMENT OF EDUCATION AND INDEX HEALTH DISTRICTS IN SOUTH SUMATRA, INDONESIA

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ABSTRACT

Monetary and economic crisis of 1997 has brought great changes in the life of society and the nation of Indonesia. In this period, GDP declined by 20% per year, the exchange rate becomes more than IDR 16,000 per US dollar and inflation almost approaching 100%. Anticipating lowering economic consequences of the crisis, the government implemented the concept of regional autonomy in early 2001 through Act No. 22 year 2009 on local government and Act No. 25 Year 2009 on financial balance between central and local governments, as last amended by Act No. 23 year 2014 and Act No. 33 of 2004. The important implication of regional autonomy concept is fiscal decentralization that gives authority to local governments to regulate and manage their own governmental affairs in the Republic of Indonesia, which aims to improve the welfare of the community through a variety of measures of development success. UNDP set one of the measures of development success with the concept of HDI (Human Development Index). Indonesia is ranked 121 of 187 countries. Compared with the ASEAN countries, Indonesia is still ranked below the member countries of ASEAN. HDI differences between provinces and districts /cities still show the varied numbers. This study analyzes the impact of the district spending to the improvement of education index and health index as a component of IPM, the total expenditure and the GDP impact to the IPM and analyze the impact of the balance funds to the GDP. The analysis showed a significant relationship between exogenous and endogenous variables in four models were formed and the characteristics of each district / city.

KEY WORDS

Fiscal decentralization, spending, education index, health index, human development index.

Monetary and economic crisis that occurred in Indonesia in 1997 has brought a tremendous change in all aspects of society and the nation of Indonesia. More broadly, as a result of the economic and monetary crisis even threaten the sustainability of the Homeland. The crisis has led to the threat of disintegration areas in the State of Indonesia. The economic turmoil has led to regional attitudes and strong individualism even tend to lead to an attitude of opposition to higher government. Panic areas on the economic crisis has brought a great impact on the state cycle (Tambunan, 2012).

Noting the threat of disintegration is more pronounced and widespread, the Government and the House of Representatives (DPR) agreed to divide government functions that had been centralized to the power that is distributed to all regions through the system of regional autonomy even to the autonomy at the village level (Nurman, 2015). According Elsy (2013) theoretically in the context of a unitary state is known there are two ways to connect the central government and local governments are centralized and decentralized.

The starting point of the implementation of regional autonomy is the enactment of Law No. 22 of 1999 on local governance and Law No. 25 of 1999 on the financial balance between central and local governments. Kumorotomo (2008) states that the Act governs the fiscal decentralization between levels of government so that the division of authority becomes better and clearer. It is obviously in the sense that there is a fundamental assertion which the rights and obligations of the central government, which the rights and obligations of local governments both provincial and district / city. After the enactment of the Law on Local Government and Law on Financial Balance between Central and Local Government then

commencing on January 1, 2001 implementation of the planned regional autonomy officially began to be implemented in Indonesia (Alisyahbana, 2000).

According to Abimanyu (2009) local autonomy was welcome with a variety of expectations and anxiety by all the people in the area. Most people in the region had a dream that regional autonomy would make society more prosperous, but not a few areas that worry because they realize the potential and the lack of available resources. The resource potential differences may lead to differences in economic growth in each region that will ultimately result in the level of welfare. In addition to the hopes and anxieties public, in the early stages of implementation of regional autonomy there is also a problem in terms of the fiscal. The regional autonomy policy has caused financial imbalances between the central government and local governments. Before more financial autonomy to a centralized interim central government after the regional autonomy era, more financial distributed to local governments. The situation ran only on the early stages and later the central government began to adjust the distribution pattern of the budget. Two years before the end of regional autonomy (1999) and the early years of the implementation of regional autonomy in Indonesia (2001) the percentage of the central government budget has decreased its portion from its previous state. After the implementation of regional autonomy in 2001 budget for the region increased by 2.16% of the Gross Domestic Product while central government expenditure decreased by -1.69% from the Gross Domestic Product. Differences in the composition of the budget changes before and after decentralization, particularly to the amount of funds that was transferred by local governments had repercussions on the management of funds for the government.

Law governing regional autonomy will then undergo further refinement into Law Number 32 Year 2004 regarding Regional Government as amended into Law No. 23 of 2014 and Act No. 33 of 2004 on Financial Balance between the Central Government and Area. These enhancements related to ambivalence provinces as autonomous regions and administrative areas, bias rich regions in natural resources and there is no constitutional mechanism for communities to supervise the local government so that the chances of re-emergence of abuse of power in wide areas open. Furthermore, there are two reasons why it is necessary to improve the Act, namely (1) the central government never seriously gives right of autonomy to the local government. The lack of seriousness can be seen from the omission of the central government on various legislations which are no longer in accordance with the Law The new autonomy even though there are hundreds of government regulations, presidential decrees and various other regulations that must be adjusted with an autonomy (Mungkasa, 2014).

In Act No. 23 of 2014 and Act No. 33 of 2004 stipulates three factors are fundamental, namely: (1) empowering potential of society, (2) foster initiative and creativity, (3) to enhance public participation actively and improve the role of the Regional Representatives Council. Act the local government there is an agenda for change that includes local authorities more clearly, increase community participation actively and constructively and more acceptance specified task.

Law on local government defines on autonomy as a right, power and obligation autonomous regions to set up and manage their own affairs and interests of local communities in accordance with the legislation. Referring to the autonomy normative definition of the area then there are three elements in the autonomous regions, namely: (1) The rights, (2) authority, (3) Obligations area. These three aspects are related to one another. There is a right areas given the authority to manage it well, but the other side also the obligations arising demands attention by the local government. These three elements can not be separated from each other. All three also have to go hand in hand in the development process.

One of the important implications that exist in the system of regional autonomy is fiscal decentralization. Kuncoro (1995) states that the growing attention to fiscal decentralization is caused by two things: (1) associated with the failure of centralized planning with a strategy of growth and distribution (2) the awareness that development is a process that is complex and full of uncertainty that can not be easily controlled and centrally planned.

The delivery of such government affairs should also be followed by fiscal handover to the district / city. The nature of the relationship between local autonomy and fiscal decentralization is essentially a manifestation of the principle money follows function (Bahl, 1998), which means that the provision of duty and authority to local governments will be accompanied by the division of authority to the regions in terms of funding. Implementation of the handover of authority to the regions, then the given area sources of funding to exercise these powers. Rahmawati (2008) states that it is necessary given the setting such that expenditure needs are the responsibility of the regions can be financed from existing revenue sources. It should also be understood that the fiscal decentralization in Indonesia is the fiscal decentralization on the expenditure side which is funded mainly through transfer area. The essence of fiscal management in the region focused on the freedom to spend the funds according to the needs and priorities of each region, even so the area can not spend the fiscal transfer without clear rules and authority.

Learn more on fiscal decentralization, there are three main things that should be noted. First, the assumption is that the region is a major part of which will provide public services. Second, the complex relationship between the regions with the movement of people. Third, the financial distribution to each region taking into account the needs and the relationship between levels of government and relations with other regions. As the region is at the front lines to provide public services is certainly channeling funds are also intended to meet minimum service standards required by each sector of development.

According to Akhmad (2012) that the fiscal decentralization in Indonesia is characterized by increasing the allocation of transfers from central government to local governments as grants in the form of (1) an increase in the Fund (DBH) to the local government, (2) an increase in the General Allocation Fund (DAU) formerly known as autonomous regions of subsidies and the president's instructions, (3) an increase in the Special Allocation Fund (DAK). The number of transfer allocation is certainly expected by the central government can stimulate the economy in the area. Forms great attention from the central government to the amount of funds transfer delivered to the region is expected to strengthen the region's economic fundamentals as well as reducing the inequalities of the above development undertaken by each region.

Nanga (2006) analyzes a percentage of the amount of funds transfer both the General Allocation Fund (DAU), Special Allocation Fund (DAK) and DBH (DBH) were given to the region in a span of three years between 2001-2003 and found that the funds -Funds transfer give a large impact on revenues in the Budget revenue and Expenditure. If it is in the percentage and then contribute funds transfer ranged between 85-90 percent of the total budget. The percentage of fiscal transfers will certainly have a great impact on improving the welfare of the area included in moving the economy in order to increase local economic growth. The transfer of the percentage allocation for local finance will impact the region's financial stability. Still the magnitude of these portions can be interpreted that there are still many areas that do not have the independence in terms of local finance.

Besides these conditions also occur in conditions where the level of development of a region with other regions also experiencing inequality. Kuncoro (2013) states that the gravity of economic activity Indonesia still tend to be concentrated geographically to the western region of Indonesia for more than 5 decades. Imagine the BPS second quarter of 2012 showed the spatial structure of the Indonesian economy is still dominated by the Province on Java island which contributes to the Gross Domestic Product of about 57.5%, followed by about 23.5% of Sumatra island, eastern Indonesia only gets the remaining approximately 19%.

Such circumstances have led to differences in development between regions in Indonesia. One area has a good level of economic development and continues to increase but the other areas that have no small contribution has improved dramatically.

Susetyo (2004) in a study stating that (1) In the implementation of regional autonomy, particularly financial management has not been carried out properly so that the visible presence of the tug of authority between the center and regions (2) Pattern fiscal centralization foster strong dependence so that the creativity of the region to optimize the

reception itself relatively low. (3) One of the principal balanced budget applied in the observation period of less spur regional economic growth. (4) The results of this study have implications for local finance current agenda at the prospect of financial management are increasingly decentralized to regional autonomy.

Azwardi (2007) in research on the Impact of Fiscal Decentralization Toward Economic Performance Inter-Regional in Indonesia were analyzed using a general equilibrium model, or interregional Computable General Equilibrium (IRGE) find that fiscal decentralization in Indonesia have an impact on the increase in economic performance between regions in Indonesia but on the other hand there is a trade-off between economic growth and the level of income inequality where economic growth will be accompanied by increased income inequality in both the micro region.

By paying attention to the conditions that existed then transfer to local funding provided in accordance with the existing capabilities in the area. The magnitude of fiscal funds are transferred every region is not the same so that the resulting potential differences in levels of development of the region. See the percentage of transfer of funds allocation given to the local area has to spend the funds in accordance with the principles of state financial management accountable and transparent. The area has an obligation to utilize other sources of income to spur economic development. According to research conducted by Susiyati (2007) most of the region is willing to increase the role of local revenue, but due to lack of understanding of the principles of good tax the many efforts made the area even interfere (distorting) the activities of economy area. Levies, which made the area even interfere with the investment and business climate in the area. The tax levies have led to high production costs that should not have happened.

As presented in the previous section that the actual implementation of fiscal decentralization policy in the region aimed at improving the welfare of the region. Regional better understand what the needs and interests of the necessary in order to accelerate the process of improving the welfare of society, which in turn can be seen the extent to which the success of a development undertaken. The success of a development that do certainly need to have the right size. In this case the United Nations Development Programme (UNDP) as the biggest international organization in providing technical assistance and development in the world has developed a wide range of measures of development success. One that is often a point of calculation is the Human Development Index (HDI) and the achievement of development goals of the Millennium Development Goals (MDGs) and sustainable development goals (SDGs).

In 2000 there were 189 member states of the United Nations (UN) has agreed to eight Millennium Development Goals as a commitment to abolish poverty and achieving other human development goals by 2015 (Todaro and Smith, 2011). IPM and the achievement of the Millennium Development Goals (MDGs) in 2015 has become Indonesia's commitment to development in all fields. Human development index is a proxy for the performance of human-centered development (people centered development), while the MDGs are human development targets by 2015. UNDP MDG outlines into specific targets by 2015, namely: (1) reduce by half the number of people living with income less than \$ 2 per day, halve the number of hungry people (2) ensure that all boys and girls to complete primary education, (3) remove gender disparities in primary and secondary education in 2005 and at all levels by 2015, (4) reduce by two thirds the mortality rate of children under 5 years of age, (5) reducing the risk of maternal mortality by three-quarters in the period up to 2015, (6) to halt and begin reducing the spread of HIV AIDS, stop and begin to reduce the number of people affected by malaria and other major diseases (7) to integrate the principles of sustainable development into policies and programs of the state, reduce the damage to natural resources, reducing by half the number of people who do not have access to clean drinking water (8) further developing trade and financial system more open, to handle the special needs of developing countries and small island states (Todaro and Smith, 2011). Especially for the development of the South Sumatra provincial HDI Regency / City in 2010-2013 can be seen in Table 1 below:

Table 1 – The development of IPM Regency / City in South Sumatra province, 2010-2013

No	Kabupaten/Kota	2010	2011	2012	2013
1	Ogan Komering Ulu	73.14	73.59	74.01	74.42
2	Ogan Komering Ilir	70.61	71.07	71.45	71.82
3	Muara Enim	70.81	71.26	71.65	72.06
4	Lahat	71.30	71.83	72.29	72.68
5	Musi Rawas	67.89	68.38	69.01	69.57
6	Musi Banyuasin	71.81	72.44	73.15	73.67
7	Banyuasin	69.78	70.28	70.70	71.08
8	OKU Selatan	71.42	71.82	72.29	72.67
9	OKU Timur	69.68	70.34	70.72	71.19
10	Ogan Ilir	69.51	70.09	70.52	70.89
11	Empat Lawang	68.61	69.08	69.69	70.02
12	Palembang	76.23	76.69	77.38	77.74
13	Prabumulih	74.27	74.94	75.45	75.83
14	Pagar Alam	73.19	73.70	74.15	74.47
15	Lubuk Linggau	70.56	71.10	71.46	71.83

Source: *South Sumatra in Figures, 2014*.

The table above shows the level of development of IPM, spread in 15 districts / cities in the province of South Sumatra. The data show that each District / City have varying levels of development HDI but still many regencies / cities that have HDI that is below the average of South Sumatra province. In 2010 the average HDI in the province amounted to 72.95. In the year 2010 there are 11 districts that have HDI under the provincial average and 4 Regency / City that have HDI above the provincial average. In 2011 the average HDI in the province is 73.42. There are 11 districts that have HDI below the provincial average and 4 Regency / City that have HDI above the provincial average. In 2012 the average HDI in the province is 73.99. There are 11 districts that have HDI below the provincial average and 4 Regency / City that have HDI above the provincial average. In 2013 the average HDI province is 74.36. There are 11 districts that have HDI below the provincial average and 4 Regency / City that have HDI above the average of South Sumatra province.

Indonesia's commitment is already very strong in the human-centered development. One of them is the use of indicators of human development index to measure the magnitude of the base budget of central transfers to the regions through the general allocation fund (DAU). This is good policy, in terms of budget revenues, should be followed by a solid foundation of the shopping areas, namely by showing what the most appropriate sector as a basis for fiscal decentralization to accelerate regional development. In other words, at least no scientific basis and why the education sector or the health sector should be prioritized human development in Indonesia over the years.

The fact that happened indicates that fiscal decentralization under the authority of the Government, the Provincial Government particularly regency / municipal government, which is associated with efforts to increase the nominal rate Human Development Index has not been done with the application of the concept of impartial, it occurred because of the formation of an economic model which analyzes the impact of spending the fiscal decentralization policy that does not explain the combination of the amount and period of time in achieving human development targets. So far, fiscal decentralization by the Government or the Provincial / District / City most is to increase the budget of the education sector or the health sector. Enlarge options education sector budget by the Constitution of 1945, and amendments thereto, which mandates a minimum allocation of 20 percent of the total budget. While the choice of enlarging the health sector based on the priorities that all processes of development requires a healthy human being so that it can work well, besides that consideration that the health sector containing component life expectancy which is forming a common identity Human Development Index.

IPM in Special Province capital, the Province of Aceh, South Sumatra Province, Papua Province, the Province of West Sumatra, Lampung, East Java, Bali Province, West Kalimantan and North Sulawesi can be used as an example of disparity achievements of the human development index between regions in Indonesia. Further that the disparity in the

human development index implies also the disparity in part to the whole of variables forming human development indices, such as life expectancy, literacy rates, average length of school, and earnings per kapita approached with purchasing power. Disparities in human development index among the provinces is certainly formed because of the disparity in the human development index that exist in each district / city in each province. Based on the report of the United Nations Development Programme (UNDP) in 2013 that the Human Development Index for Indonesia was ranked 121 out of 187 countries. When compared with neighboring countries a fellow member of the Association of Southeast Asian Nations (ASEAN), the rating index of human development in Indonesia is still far behind, especially from Singapore who is ranked 18, Brunei Darussalam ranked 30th, Malaysia is ranked 64, Thailand ranked 103, ranked the Philippines 114. The Indonesian government apparently still has not found the right formula to achieve it. Therefore, the nominal value of Indonesia's human development index is still lagging behind the MDGs and SDGs. Logically the nominal index of human development in Indonesia will increase if the index of human development throughout the Province / Regency / City in Indonesia increased, the nominal rate of human development index would increase if the rising indices of its components, namely: the index for decent living are the main element is the expenditure per capita based on purchasing power, long-life index element is life expectancy, and the Education Index which element is the literacy rate and average Old School. Meanwhile, efforts to improve the three indexes are economically can be done by increasing investment in provincial or district / city concerned, either in the form of investment capital resources and investment in human resources. Based on the previous description that the problem in this research are: 1. How does the shopping areas to the improvement of education index? 2. How does the shopping areas to the improvement of health index index? And 3. How does the shopping areas to the improvement of the Human Development Index?

THEORETICAL BASIS

Theories have Fiscal Policy. Fiscal policy is the policy pursued by the government with regard to setting government spending and tax revenue through the set. Fiscal policy is conducted by the government when the economy goes way above or below the level of Gross National Product (GNP) potential (Samuelson and Nordhaus, 1989). Fiscal policy will affect the total amount of consumption instead of individual consumption. Fiscal policies that apply to setting government spending intended to regulate the level of production and consumption. While fiscal policy in the field of taxation intended to reduce revenue at a certain level so that in the end will reduce private consumption, however, the tax would affect investment and potential output.

Demand and Aggregate Supply. Fiscal policy affects the economy (income and interest rates) through aggregate demand in the market for goods, while monetary policy influences economy (income and interest rates) through the Central Bank intervention on the money market and bond market (securities). Therefore, fiscal policy and monetary policy is often used as an instrument to stimulate and stabilize the economic upheavals that undermine economic growth (Dornbusch, 2004).

The Effects of Fiscal Policy Aggregate Demand. Regarding to the relationship IS-LM curve and the AD curve at the top, then intervention in the goods market is called fiscal policy and money market intervention, the so-called monetary policy affects the economy. Fiscal policy affects the economy through increased government spending and tax rates. The magnitude of the effect of fiscal policy on the economy (income and interest rates) through changes in the IS curve can be calculated from the following equation (Dornbusch, 2004):

$$Y = \alpha G (\tilde{A}-bi); \alpha G = 1 / \{(1-c (1-t))\} \quad (1),$$

Where: Y = Income; αG = Coefficient or variable parameters; \tilde{A} = Exogenous variables; b = Coefficient; c = Marginal propensity to consume; t = Tax.

Effects of Fiscal Policy on Aggregate. Gross Domestic Product (GDP) on the supply side is the sum of all the value of production (output) sectors of the economy. Fiscal policy through increased government expenditure will increase revenue / output and increase employment (L), and reduce unemployment (U), which is the difference between the level of achievement at the end of the balance point is reduced achievement in equilibrium prior to fiscal policy. Final achievement is generating new levels of income (Y^*), the level of new interest rate (r^*), new price level (P^*), the level of the new wage (W^*) and the employment rate of new (L^*), and the unemployment rate The new (U^*).

NEEDS AND FISCAL CAPACITY

Needs Fiscal and Estimates. Each region (subnation) should provide minimum public services (vital) to the people who are in its territory, regardless of whether they are permanent residents or immigrants. Many areas that bear much of the burden of fiscal responsibility, for example, an area that has a lot of poor people, or the region with the proportion of school-age population (6-18 years) high, areas with a vast territory and population spread should bear the burden of expenditure per capita is very high for road construction and maintenance. This all reflects the magnitude of the fiscal needs for cost in the provision of public services is high or the scope of the programs that must be implemented by the regions widened.

Basically, fiscal needs the need to fund all expenditure in order to carry out the functions and authority of the region in providing public services (expenditure needs). World Bank (2009) states that the fiscal needs which must be met determine a country to finance the fiscal deficit larger without jeopardizing macroeconomic stability and debt sustainability. Needs owned by the county basically reflects the scale of service requirements (size of service provision), the cost of the provision of services (cost of service provision) and the requirements of development (development need).

To calculate or measure the true fiscal needs of an area is not easy. In the first approach, the first step taken is to divide spending / shopping areas over several categories. The common ones usually are: education, health, transportation, telecommunications, social welfare, police and fire, environmental maintenance, and other services. The division is of course likely to vary between countries depending on the powers / functions held by the regions. But put forward above is typically functions in the hands of the area.

This category also depends on the budgetary provisions in each country and the availability of data. For example, transportation and telecommunications may be in combination, police and fire departments are separated (or police abolished because in Indonesia is not a local government authority), education is divided into primary, secondary, and higher, and so on.

If the measurement of fiscal needs this in order to make the transfer of funds equalization formula, which takes into account the needs of many countries with a regular expenses also include costs of maintenance projects. The cost of new projects are usually issued for other than the numbers tend to be large, it is also difficult to find indicators needs. Besides the benefits tend to be long term, so it would be contrary to "benefit principle" of the tax if the cost of the project is entirely financed from current tax sources. The second step is to calculate the need (costs) expenditures from each category, and add everything to gain local fiscal needs. Illustration for the following categories may clarify the above description. Raw formula used to calculate the expenditure category i based on this approach by Simanjuntak (2003) are:

$$N_i = \text{measurement units} * \text{the average cost per unit} * \text{index adjustment} \quad (2),$$

Where: i shows the type or category of expense to $-i$, such as education, health, transportation and so forth. Measurement unit is the number of units that received local government services. The average cost per unit is the amount of regional spending for the

category i divided by Measurement unit adjustment index is a combination of factors that makes the difference of the cost per unit of service in the area of the national average.

Basic and Secondary Education:

Measurement unit = the number of population aged 6-18 years.

$$\text{Adjustment index WI} = a_1 + a_2 + a_3 \text{ RCI SDI} + a_4 \text{ PFI} \quad (3)$$

WI or index salary (wage index) is the ratio (ratio) between salaries in the region against the national average. RCI or lease cost index (rental cost index) is the ratio of rental costs per unit area in an area specific to average nasioanal. SDI or disabled family index (student disability index) is the ratio of the percentage of students with disabilities in the area of the national average. PFI or index poor families (poor family index) is the ratio of the percentage of students from low-income families in the region against the national average.

The four factors above are given great weight of the whole is equal to one (so, $a_1 + a_2 + a_3 + a_4 = 1$). Weights can be determined the same or different, and can be searched through various means / methods such as econometrics.

Health:

Measurement unit = the number of residents of the area concerned.

The average cost per unit = per capita health expenditure of the state.

$$\text{HPI adjustment index} = a_1 + a_2 + \text{IMI} + a_3 a_4 \text{ ILEI IPDI} \quad (4)$$

HPI or health cost index (health price index) is the ratio of the cost of health care in the region against the national average. IMI or indices of infant mortality (infant mortality index) is the ratio of infant mortality rate in the region against the national average. ILEI or life expectancy index inverse (inverse expectancy index) is the ratio of the average rate of the national life expectancy to figure the area. IPDI or inverse population density index (inverse population density index) is the ratio of the average number density of the national population to population density regions concerned. $a_1 + a_2 + a_3 + a_4 = 1$.

Transportation:

Measurement unit = total length of roads in the area.

The average cost per unit = expenditure per capita for transportation from the state.

$$\text{Adjustment index WI} = a_1 + a_2 + a_3 \text{ GRI SNI} + a_4 \text{ IPDI} \quad (5)$$

WI or index salary (wage index) is the ratio of local salary levels to the national average. GRI or index path (road grade index) is the ratio of the average quality of roads in the area to the national average. SNI or indexes snow (snow index) is the ratio of annual snowfall in the region against the national average. IPDI is the inverse population density index (inverse population density index) is the ratio of the average national population density to the density of the area. ($A_1 + a_2 + a_3 + a_4 = 1$).

The results of the three categories above calculations later summed with the results of other categories to obtain all the fiscal needs of the region concerned. However, of the three examples above show that the required data is complete and accurate so that a good overview of the needs of each category can be estimated. This is the main difficulty in applying the method. Some countries are using this method is the United Kingdom, Australia, Japan and South Korea.

Given the difficulty will be the data as described above, then the alternative method is to use fewer variables to estimate the fiscal needs of a region. Formula used can vary widely. Here are some examples:

Estimating the fiscal needs of a region based on population, area, and income level of the area:

$$N_i = TE (WP (P_i / S_j P_j)) + W_i (ID_i P_i) + (WA (A_i / SAI)) \quad (6)$$

Where: N_i = the fiscal needs of the region i ; TE = the total expenditure areas concerned; P_i = the population of region i ; W_p = the weight for the population; IDI = the distance, per capita income in the richest area; W_i = the weight for the income disparity; A_i = the area that concerned; W_a = the weight to area $W_p + w_i + w_a = 1$.

The total area included in the formula because of these variables play a role in determining the cost of providing public services. The provision of roads, telecommunications, schools and libraries, for example, will demand a higher fee vast area with sparse population compared to areas densely populated. The inclusion of distance with a per capita income of the richest regions is a reflection of the desire to deal with imbalances between regions (Simanjuntak, 2003).

Estimating the fiscal needs of the area by using indicators of health and education:

$$H_{ii} n_i = S_{II} \times x \times P_i \times c \quad (7)$$

Where: N_i = the need of the region's fiscal i ; S_{II} = an index of students (student index); $S_{II} = (S / P) / (S_i / P_i)$; h_{ii} = a health index (health index); $h_{ii} = (H / P) / (H_i / P_i)$; P_i = the population of region i ; C = the per capita expenditure on the country concerned; S_i = the number of students in the region i ; H_i = the number of health workers in the area i ; P = the number of people in the countries concerned; S = the number of students in the country concerned; H = the number of health workers in the country concerned.

S_{II} in outline measures the reception level (capacity) of the region i relative to national capacity. H_{ii} measure of health workers per capita in region i relative to the national average.

Estimating the fiscal needs with the welfare indicators:

$$N_i = E_{II} \times T_{II} \times P_i \times c \quad (8)$$

Where: N_i = the need of the region's fiscal i ; E_{II} = an index of power (electricity index); $E_{II} = (E / P) / (E_i / P_i)$; T_{II} = the index of telecommunications (telecommunication index); $T_{II} = (T / P) / (T_i / P_i)$; P_i = the regional population i ; C = the expenditure per capita of the country concerned and where E_i is the level of consumption / electricity usage area i ; T_i = the number of telephone connections in the region i ; P = the national population; E = the total national electricity consumption; T = the total national telephone connection.

E_i and T_i measure electricity consumption and telecommunications relative to the national average.

Fiscal capacity and Estimates. As with fiscal needs, there are many ways to measure fiscal capacity. In most developed countries, an estimated capacity using main tax base and rate of the standard tax rate (on average). This method measures the fiscal capacity of a region of the reception area that can be assembled if the taxing all standard tax base with tax effort (tax effort) are standard anyway (Simanjuntak, 2003).

The general form of the formula is:

$$C_i = S_j B_{ij} \times t_j \quad (9)$$

C_i is the tax capacity (tax capacity) region i , B_{ij} is the tax base to the region i - j , and t_j is the standard (eg effective national average) level of tax rates to the tax base- j . it is important to wear a standard tax rate (national) than the effective tax rate of the relevant area, to avoid "punishment" of areas that have a tax effort (tax effort) and stimulate high (encourage) local tax effort is low. In other words, if the effective tax rate of a region is higher than the national average, transfers received are not becoming less; and when the effective tax rate is lower than the area average of national, transfer derives not be increased.

This method requires some implementation steps. First, determine the tax base. Second, collect data from the taxes selected. Here can be used year figures seblumnya. Third, determine the tax rate (tax rates) are standard. Fourth, calculate fiscal capacity based on the equations / formulas above. Method of measuring fiscal capacity above takes the data is complete, accurate, and detailed, which is obviously very difficult to meet, especially in

developing countries (Simanjuntak, 2003). Therefore, fiscal capacity is often measured using a number of variables or other indicators, such as: a. Gross Regional Domestic Product (GRDP), b. Individual income (the sum of all income locals), and c. Total Retail Sales in Region.

The gap Fiscal (Fiscal Gap). The fiscal gap (fiscal gap) is the difference between the fiscal needs required by a region in implementing basic services to their communities with a fiscal capacity or ability possessed by the region in meeting those needs. The fiscal gap that occurs in an area due to the inequality between the needs of fiscal capacity. In an area that has a high degree of fiscal gap, the allocation of funds transfer regions through the DAU will be of great value to close the fiscal gap. By contrast, in areas with high fiscal capacity then transfer DAU funds will be smaller portions.

An area with high fiscal capacity indicates that the area has to have a better ability to manage existing resources, local financial independence is also better than in other regions. Many studies show that the potential for inequality among regions, with the implementation of decentralization is quite large. Potential tax uneven areas and distribution of natural resources are also uneven requires significantly to reduce the horizontal inequality. Since the enactment of the Law on financial balance between central and local government then introduced new sources of revenue, namely general allocation fund (DAU). The purpose of giving DAU is to ensure equity across regions. DAU actually used to close the fiscal gap (Fiscal Gap) which represents the difference between needs and fiscal capacity.

General Allocation Fund (DAU). The general allocation fund (DAU) is one and transfer the funds sourced from the State Budget (APBN) and used for the purpose of equalization of fiscal capacity in the implementation of decentralization. DAU is a grand block which means the user submitted to the local government in accordance with the priorities and needs of the regions to improve services to the public. DAU is allocated to the provincial government and the district government / municipality in accordance with the balance of powers between provincial and district / city.

DAU formula using the fiscal gap approach (fiscal gap) which is the difference between the fiscal needs and fiscal capacity and allocation base form of salaries of civil servants in each region (Leaflet Ministry of Finance of the Republic of Indonesia). DAU is calculated by the following formula:

$$DAU = \text{Basic Allocation (AD)} + \text{Fiscal Gap (CF)} \quad (10)$$

Where: the basic allocation = Salaries regional civil servants; the Fiscal Gap = Needs.

Fiscal - Fiscal Capacity. The magnitude of the allocation of basic salaries of civil servants salaries of civil servants are calculated based on the realization of the region the previous year (t-1), which consists of a basic salary and allowances attached to the salary component in accordance with the regulations governing all departments / agencies. The formula used to calculate the fiscal needs are:

$$KBF = TBR (\alpha_1 IP + \alpha_2 ILW + \alpha_4 IKK + + \alpha_3 IPM + \alpha_5 IPDRB / hood) \quad (11)$$

Where: KBF = Needs Fiscal; TBR = Total average spending budget; IP = index number of population; area ILW = Index; HDI = human development index; CCI = construction cost index; IPDRB = the GDP index; α = Weight index.

Fiscal capacity obtained from local revenue (PAD), and revenue sharing (DBH) with the following formula:

$$KPF = PAD + \text{Taxes} + DBH \quad (12)$$

Where: KPF = fiscal capacity; Revenue = revenue; DBH = Revenue-sharing.

Formulation DAU for each region has gone through various stages to the establishment of the DAU. Stages include (1) Academic Stages, (2) Stages Administrative, (3) Technical Stages, (4) Politics Stages.

Special Allocation Fund (DAK). Special allocation fund is one source of revenue for the regions that come from central government. DAK is a complement of DAU transferred to local governments. Activities that can not be tackled with commitment and DAU and be included in the national priorities funded through DAK. In Act No. 33 of 2004 Article 1 Point 23 states that the Special

Allocation Fund is a fund sourced from APBN allocated to certain regions with the aim to help fund special activities of regional affairs and in accordance with national priorities. Special activities funded by DAK is a necessity that can not be predicted in general by using the DAU formula. Further regulation of DAK is regulated by Government Regulation No. 55 of 2005 on the balance funds. Implementation of DAK activities are focused on the development investment, procurement, or repair of physical infrastructure of public services with the economic life long including the provision of means of physical support but does not include equity investments, fund administration activities, preparation of physical activities, research, training and official trips, As a commitment shared between the central government and local governments, the regions receiving it must allocate matching funds sourced from budget funds at least 10% of the total DAK receives. DAK set by the relevant Minister after coordination with the Minister of the Interior, the Minister of Finance and Minister of State for National Development Planning.

After a set of programs and activities being targeted DAK, then the next process is the determination of a particular area as a receiver and determining the amount of DAK allocation for each region. Determination of the area as receiving it must meet one of three criteria: (1) general criteria (2) specific criteria (3) technical criteria. The general criteria formulated by the financial capacity of the area is reflected in the general acceptance of the budget after deducting expenditure PNSD (Audit Board RI). The formula is:

$$\begin{aligned} \text{KKD} &= \text{PU APBD} - \text{Regional BP} & (13) \\ \text{PU} &= \text{PAD} + \text{DAU} + (\text{DBH} - \text{DBHDR}) & (14) \\ \text{BP} &= \text{Shopping PNSD} & (15) \end{aligned}$$

Where: KKD = Financial fitness area; Public Works budget = Revenue APBD; BP Regional = Personnel expenditure areas; PU = Revenue general; PAD = Revenue; the DAU = Dana general allocation; DBH = Revenue-sharing; DBHDR = Revenue-sharing funds reforestation; BP = Shopping clerks, civil servants PNSD = area.

An area in the category of special autonomy in Papua such an area eligible for DAK. If it does not meet the characteristics of the visible region using territorial characteristics Index (IKW). Combined Net Fiscal Index (IFN) and Regional Characteristics Index (IKW) produces Fiscal and Regional Index (IFW). If the sum of IFN with IKW value is greater than 1 then the area automatically eligible for DAK allocation.

Determination of areas based on technical criteria is based on indicators that can describe the condition of the facilities and infrastructure and the employment rate of service to the community and technical achievements implementation of DAK activities in the area. The technical criteria established by the relevant technical minister. From the above it can be concluded that an area eligible for DAK if it meets the following criteria: (1) the area that has the financial capacity of the region below the national average (2) area that includes special autonomy in Papua and the area with category lagging behind regions other (3) areas that have tilapia fiscal index larger region than the number 1 (one). The process further includes determining the allocation of DAK in each region. DAK allocation determination based on the weighted area (BD), technical index (IT) and technical weight (BT). Obtained by multiplying the weight of the IFW with IKK. The technical index (IT) is determined by each field. Technical weights (BT) is obtained by multiplying IT with IKK. Allocations are set for the next areas are categorized according to their respective fields in accordance with the technical aspects of these programs and activities. Table 2 below shows the number of the DAK target and objectives of the activities:

Table 2 – Total Field DAK

No	Bidang DAK
1	Education
2	Health
3	Roads Infrastructure
4	Irrigation Infrastructure
5	Infrastructure Water and Sanitation
6	Government Infrastructures
7	Kalautan and Fisheries
8	Agriculture
9	Environment
10	Family Planning
11	Forestry
12	Rural Infrastructures
13	Trade

Source: Ministry of Finance of the Republic of Indonesia.

DBH (DBH). The central government gives the policy of profit sharing with the provincial government and district / city government as part of the exploitation of natural resources by the central government. The amount of funds for a given outcome variable proportions between the central, provincial and district / city. Provision of funds for these results depends on the potential areas with the status of a producer or not. Revenue-sharing is comprised of (1) tax sharing (2) funds for natural resource revenue. The allocation of funds for the results implemented based on the principle by origin (region). Tax sharing are further defined by the relevant minister to pay attention to the circumstances that developed along with the ongoing development process. In the tax sharing is also included the percentage to be gained by each region according to their capacities. Funds for the results that come from natural resources consist of the kind of reception as follows: (1) receipt of forestry (2) general mining revenues (3) receipt of fisheries (4) acceptance of oil and gas mining (5) acceptance of geothermal mining.

Revenue from forestry sourced from Forest Tenure Contribution (HPH), Forest Resource Provision (PSDH) and Reforestation. Revenue from general mining sourced from Fixed Levy (Land Rent) and Contribution Exploitation (Royalties). Revenue from fisheries sourced from Exploitation Charges Levied Fisheries and Fishery Products. Funds for the results of the fisheries sector is divided equally large portion of those districts / cities throughout Indonesia. Revenue from the petroleum mining sourced from petroleum products are exploited in the area after tax and other levies in accordance with the provisions. Revenue from the exploitation of natural gas derived from natural gas net of taxes and other levies according to regulations. The draw of revenue from oil and natural gas are the specific allocation for basic education with a value of 0.5%. Revenue from geothermal mining deposits sourced from the government's part, permanent contributions and production. For the results of these funds tailored to each region status as producer or not as a producer.

Table 3 – Percentage of DBH Natural Resources

No	Acceptance	Percentage				
		Center	Prov	District / City	District / City More Autonomy	Otsus
1	Forestry					
	a. IHPH	20	16	64	-	80
	b. PSDH	20	16	32	32	80
	c. Reforestation Fund	60	-	40	-	40
2	General Mining					
	a. Land rent	20	16	64	-	80
	b. Royalties	20	16	32	32	80
3	Fishing	20	-	-	80	80
4	Petroleum	84,5	3,1	6,2	6,2	70
5	Gas	69,5	6,1	12,2	12,2	70
6	Geothermal	20	16	32	32	80

Source: Ministry of Finance of the Republic of Indonesia DJPK 2014.

Human Development Index (HDI). The initial concept the United Nations Development Programme (UNDP) defines human development as a process of expanding the choice for people in his life. In the concept of the human being is placed as the final destination while the implementation process of development is a means to achieve the ultimate goal. To achieve the ultimate goal of human development that is both helpful and there are four main things that need attention: (1) productivity (2) equity (3) sustainability (4) empowerment. In each building, the productivity of society must be enhanced in order to meet the needs of the community. A process of development must be able to give way and increase the productivity element of society. Productivity give a good impact on the outcome of development but with the concept of equalization is run in accordance with the principle of development for all. Communities should have the opportunity, and equal opportunities to gain access to all the resources of economic and social development and enjoy the fruits of development are equitably. Obstacles that arise and can minimize opportunity to obtain access should be minimized.

Utilization of natural resources within the framework of the development process that is equitable and productive done while maintaining the availability of natural resources in the future. Natural resources are not to be spent in a time course but maintained its continuity to the production process in the future. In maintaining the continuity of the then all communities should participate fully in the development process.

To generate a development process that takes into account the elements mentioned above, it is developing an optimal size to represent the purpose of the concept of development is expected. That concept is the Human Development Index (HDI). IPM was initiated to address dissatisfaction with the experts in assessing the performance of development based solely on macroeconomic indicators alone. Originator originally was Mahbub Ul Haq, a Pakistani economy which in 1970 expressed dissatisfaction with the performance measures of socio-economic based solely on indicators of average national income per capita and its derivatives such as inflation, unemployment, the level of investment, the level of government spending, the level of consumption, and the balance of payments (Anand, 2000).

Mahbub Ul Haq idea that the core of the existing human-centered development paradigm (people centered development) that puts human beings as well as connoisseurs of development actors. Therefore, macroeconomic indicators as a performance measure of economic growth is not the final achievement of human development but only as an intermediate targets that must be passed in order to achieve the ultimate objective of human development is human welfare.

Centered on human development has been promoted consistently in the Development Programme of the United Nations or UNDP since 1990. Since then UNDP released its annual report of human development growth for the countries in the world based on different themes but still about human interests (UNDP, 1990-2009). Along with that UNDP continues to promote Human Development Index (HDI) or index development humans as the main tool for measuring human development in addition to indicators of derivatives such as Gender

Development Index (GDI), Index Gender Empowerment (IDG) and the Human Poverty Index (HPI) and more applicable then as well as macroeconomic indicators that already exist as complementary indicators. Still the use of macroeconomic indicators as complementary indicators of human development is understandable because the macroeconomic indicators described the achievement as the process of economic growth performance among towards human development. Another reason the use of macroeconomic indicators for measuring the performance of the Development humans are (1) the economic aspects appear on the surface more quickly between various aspects of human life. (2) the economic impact more easily quantified than social impact is essentially qualitative. (3) Assessment of the economic aspects of development performance has been more than aspects - other aspects of the social sciences and (4) The macroeconomic indicators such as revenue has been studied as an endogenous variable of an economic model that can be foreseen magnitude and term accomplishments. Human development index as a measure of human development performance is not too perfect. Because it does not measure all indicators of human

development due to not fully quantified. Other weaknesses of the human development index and its components for formation (life expectancy / AHH, adult literacy rate / AMH, Average Length of school / RIS and per capita income) is not used as an endogenous variable of a simultaneous equation, so it is unknown economic relations between variables and can not be simulated how factually achievements yet least recognized human development indices and widely adopted by UN member states, including Indonesia.

According to UNDP (2009) that the achievement of human development indices Indonesia and 186 other countries have a tendency that increased from 1980 to 2007. This suggests that economic growth and human development performance improvements simultaneously around the world. The higher human civilization marked by increasing technology in all fields. Humans increasingly creative, innovative and productive. The tendency of Indonesian human development index from 1980 to 2007 increased as measured by a scale of 0 to 1. If it is in the percentage and then the highest value is 100%.

HDI increased as a result of the increase in the value of the combination of its constituent indicators, namely life expectancy, literacy rates, average length of school and purchasing power. While life expectancy increased performance due to improvements in the health indicators, such as the decrease malnutrition, decrease in infant mortality, and a decrease in maternal mortality. In other words, it is certain indicators - indicators above is linked to one another and become factors - factors that affect the formation of the human development index. For the purposes of this study, the main concern is shown on the indicator - an indicator of human development indices forming the objectives of the MDGs, then analyzed its association with Indonesia's macro economic indicators.

HDI value of a state / province / county / city shows how far the region has reached a predetermined target both in the field of education, health and per capita spending. The greater the value of the HDI the closer they approach the region of the basic goals of the development process is expected. HDI which only includes three basic components of education, health and spending per capita, the three values should be seen as a simplification of the complex reality of the extent dimension human development. In certain cases HDI value is very sensitive to measure something that happens in economic activity, especially on components increased purchasing power. In case of a financial crisis, as happened in the Republic of Indonesia, the crisis has led to a change in the form of reduced purchasing power in many communities. Changes in the purchasing power of these are things that can be observed directly on the economic life of society. As a result of the decline in purchasing power also affected the basic human needs both education and health sectors.

Factors Shaping the Human Development Index. Components HDI is composed of three components, namely the length of life measured by life expectancy at birth, educational level is measured by a combination of literacy rate in the adult population (with a weight of two-thirds) and the average length of the school (with a weight of one third), and the level of a decent living as measured by per capita expenditure has been adjusted (PPP rupiah), this index is a simple average of the three components mentioned above:

$$HDI = (X1 + \text{Index Index Index } X2 + X3) \quad (16)$$

Where: X1 = Life expectancy; X2 = Education; X3 = Standard decent life / health.

$$\text{Index } X (I, J) = (X (I, J) - X (i-\text{min})) / (X (I, J) - X (i-\text{max})) \quad (17)$$

Where: X (I, J) = Indicators to-I from the J; X (i-min) = minimum value of Xi; X (i-max) = maximum value of Xi.

Relationship Between Fiscal Decentralization Policy by the Human Development Index. Fiscal decentralization policy which is implemented by providing transfer funds to each regency / municipality in accordance with its portion henceforth be revenue for the region is a consequence that is executed in connection with the application of the concept of fiscal decentralization policy. It could be a revenue income through the General Allocation Fund,

Special Allocation Fund, DBH or other legitimate income formulated exactly in accordance with the instructions issued by the Ministry concerned to be shopping at the Regional Budget.

Transfer of funds included in existing programs and activities at the regional work units through the budget and work plan in the list of budget implementation for the year. The funds are used in accordance portion. For example, the transfer of funds from the Special Allocation Fund for Education then the usage must correspond to the field of education. Special Allocation Fund for Health then the user must also comply with the health sector, as well as with other funds transfer.

If indeed the transferred funds are used according to its purpose then of these expenditures will affect the development and progress of each field. In education, the use of funds according to the program and activities will be able to add to the educational facilities both in primary education and in secondary education, including expanded access to the completion of illiteracy (literacy). In the medical field the use of transfer funds will be able to add a variety of health facilities at the lowest level (HEALTH), additional health personnel and various medications needed by society and development activities carried out against society. Infrastructure construction other than education and health also spur the economic development of society. This economic development will ultimately improve people's lives through income and other access devices received as a result of the economic development in the region. Component areas of education, health and access to economic improvement mentioned above which have increased as a result of the shopping process through funds from the central government transfers to local government will eventually improve the Human Development Index which is made up of various components which have been set at the previous section.

The hypothesis in this study are:

1. Shopping areas education sector, gross regional domestic product and the general allocation funds affect the education index.
2. Shop local health sector, regional gross domestic product and special allocation funds affect the health index.
3. The total shopping area, the regional gross domestic product affect the human development index.
4. Revenue, special allocation funds, the general allocation fund and revenue sharing domesti influence the gross regional product.

RESEARCH METHODOLOGY

Population. In this study population was all districts / cities in South Sumatra Province. In 2006 through 2013 the district / city as much as 14 to 15 districts / cities with the details in the 2006 and 2007 amount to 14 districts / cities, and by 2008 to 2013 as many as 15 districts / cities. Total population is defined as 15 districts / cities with combined data time series and cross section districts / cities taken from cluster sampling all districts / cities in the region of South Sumatra Province in 2006 through 2013.

Table 4 – Number District / City

No	Province	Year / No. of districts / cities								Total
		06	07	08	09	10	11	12	13	
1.	Sumatera Selatan	14	14	15	15	15	15	15	15	118
The total number of district / city										118

Types and Sources of Data. In a study using a type of quantitative data, the measurement process is a central part in the study because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships. In this study the source of the data used is secondary data. Publication of certain data performed by authorized agencies are widely used in this study as the data from Bappenas, Ministry of Finance, Bank Indonesia, Central Bureau of Statistics and other sources that are relevant to this study.

Analysis method. The analytical method used in this research is quantitative analysis methods that are inferential hypothesis testing. This analysis method aims to produce a finding can be generalized widely in the population area. The analytical tool used is a data panel that incorporates data time range (time series) and data cross (cross section). In this research to facilitate the analysis of the constructed model. Econometric model according Intriligator (1978) is a special pattern on algebraic model of a phenomenon that is stochastic economy which also includes one or more confounding variables. Special pattern or model of the algebra of the econometric model describes the relationship with each other from their respective constituent variables, which consists of the explanatory variables (explanatory variables) and variables endogenya (endogenous variables). Econometric model must meet: (1) the economic criteria or the theoretical expectations (theoretically meaningful), especially concerning the mark (sign) and size (magnitude) of the parameters of simultaneous equations formed, (2) statistical criteria relating to the degree of accuracy (goodness of fit), and (3) the criteria specifying an econometric estimation has the required properties such as unbiasedness, efficiency, sufficiency and consistency (Koutsoyiannis, 1977).

Specifications Model. The model is an explanatory of the actual phenomena that occur in our daily lives. Model is a quick overview of what is in people's lives. The model is built in this study is an econometric model. Econometric model is a description of the relationship of each of explanatory variables (explanatory variables) against endogenous variable (dependent variables). Specifications model formulated in this study consisted of four equations are built to address issues that have been set. All three models are:

1. Model for the analysis of regional expenditure on education index:

$$IP_{it} = a_0 + a_1 BSPD_{it} + a_2 PDRB_{it} + a_3 DAU_{it} + \epsilon_{it} \quad (18)$$

Parameter estimation of the expected: $a_1, a_2, a_3 > 0$

Where: IP = education index; BSPD = education sector spending; the GDP = gross regional domestic product; DAU = General Allocation Fund.

2. Model analysis of expenditure on the health index:

$$IK_{it} = b_0 + b_1 BSK_{it} + b_2 PDRB_{it} + b_3 DAK_{it} + \epsilon_{it} \quad (19)$$

Parameter estimation of the expected: $b_1, b_2, b_3 > 0$

Where: IK = health index; BSK = health sector spending; the GDP = gross regional domestic product; DAK = Special Allocation Fund.

3. Model analysis of the effect of expenditure on human development index:

$$C1TBLJ_{it} IP_{it} = c_0 + c_1 PDRB_{it} + c_2 DAU_{it} + c_3 DAK_{it} + \epsilon_{it} \quad (20)$$

Parameter estimation of the expected: $c_0, c_1, c_2 > 0$

Where: HDI = human development index; TBLJ = Total expenditure; the GDP = gross regional domestic product.

Model analysis of the effect of PAD, DAU, DAK, DBH of the regional gross domestic product:

$$PDRB_{it} = d_0 + d_1 PAD_{it} + d_2 DAU_{it} + d_3 DAK_{it} + d_4 DBH_{it} + \epsilon_{it} \quad (21)$$

Parameter estimation of the expected: $d_0, d_1, d_2, d_3, d_4 > 0$

Where: The GDP = Gross Regional Domestic Product; the original PAD = Regional Revenue; DAU = General Allocation Funds; DAK = Special Allocation Fund; DBH = Revenue-sharing.

The number of equations formed in the model consists of 4 equations. Left element in the equation is endogeneous variables and elements right is eksogeneous variables. Data processing was performed using a computer software program EvIEWS version 7.

RESULTS AND DISCUSSION

Research result:

Education Index. The education index gives a great influence in the increase or decrease in the numbers of human development index. As an important component of the analysis of the education index was included in the study analysis. Index analysis to education during 2006 to 2013 in each district / city can be the following data:

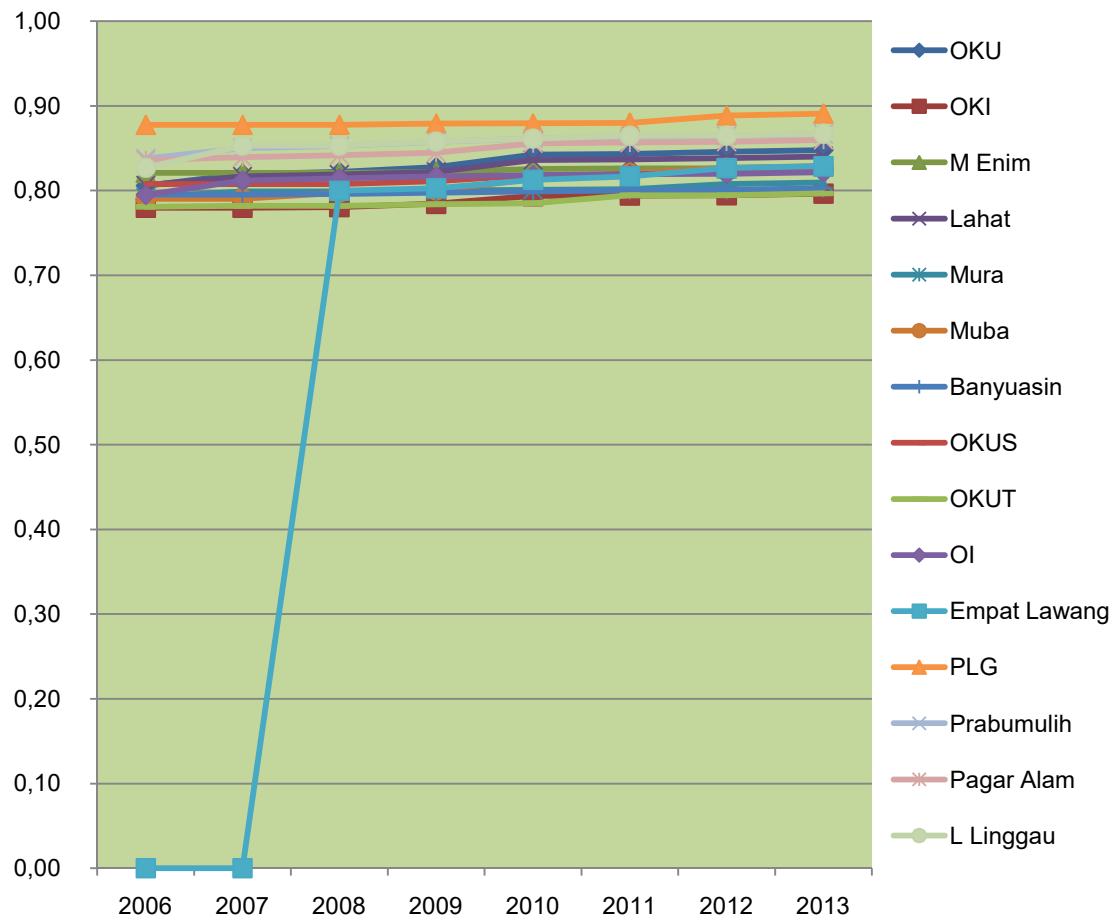


Figure 1 – Education Index Regency / City of South Sumatra province, 2006-2013
Source: Central Bureau of Statistics.

Based on data from Figure 13 are districts in 2006 to 2007 do not have the education index is Empat Lawang. This district not yet have an index of education in the two years is due to the district not been formed in the year. Noting that data to be a tendency on the respective district education index rising trend during the study period, but the upward trend has not shown a significant increase in numbers. From the above data can be ranked on average the highest education index by 0.88 points achieved by Palembang, 0.86 point reached by Prabumulih and Lubuk Linggau and 0.83 point reached by Lahat and Ogan Ulu Ogan.

Health Index. Health Index (IKit) is an index that is formed by the variable of life expectancy (AHH). The higher the life expectancy, the higher the health indices in districts / cities. The health index reflects the average length of a person aged minimal and the average person aged maximum. The average age that a standard minimum is 25 years, while the maximum age of a person according to the target that has been set is for 85 years. The development index of health districts / cities in the province SumSelselama the study period of 2006 to 2013 can be seen in the following figure:

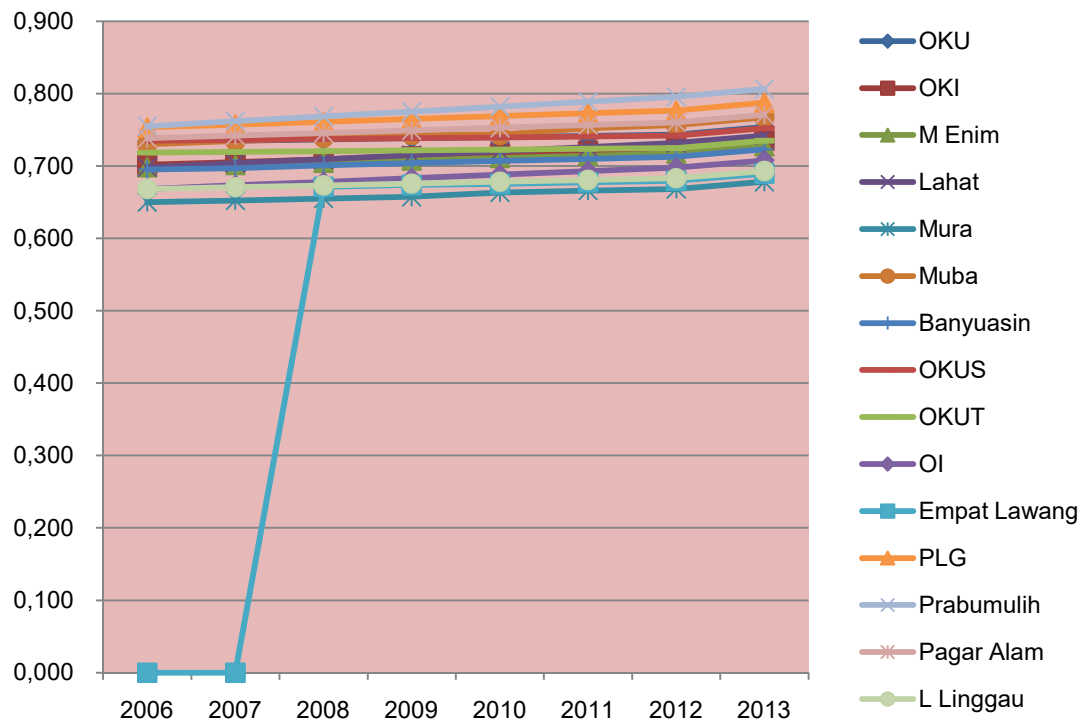


Figure 2 – Health Index Regency / City - Province South Sumatera Province, 2006-2013
Source: Central Bureau of Statistics.

Look at Figure 2 above shows that the index of public health in the districts / cities have shown an increasing trend, but the growth rate has not shown significant improvement of education index. The health index over the study period contained in Prabumulih in 2013 amounted to 0,806 points. The second largest city of Palembang in 2013 amounted to 0.787 points and the third largest is Pagar Alam by 0.771 points. The smallest health index during the study were Musi Rawas with a value of 0.650 points in 2006. Based on these data can be described health index rating in each district / city as follows:

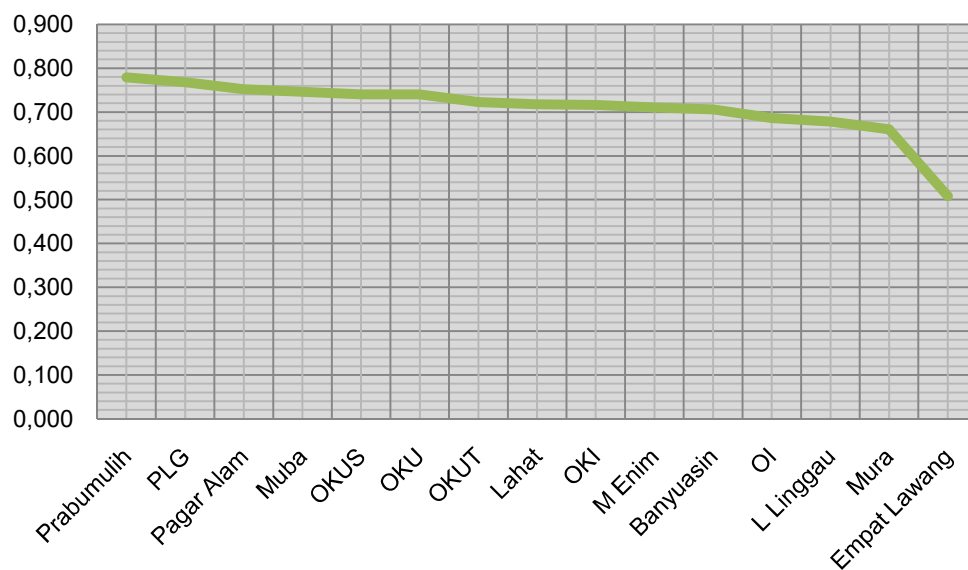


Figure 3 – Average Index Health Office / City of South Sumatra province, 2006-2013
Source: Central Bureau of Statistics.

The average health index above is developed by the district / city with the largest health index value to Kabuapten / cities with the smallest health index. The average index of the largest health was Prabumulih, then the second largest city of Palembang and is the third largest city of Pagar Alam.

Total Expenditure of Local Government. Total local government expenditure is the total expenditure incurred by the district / city in one year to finance all programs and activities that have been planned in the budget revenue and expenditure of the district / city concerned. Total spending is a combination of all the shopping has been done by the organizational units in the district / city. The figure below shows the total expenditure of district / city during the observation period of the study.

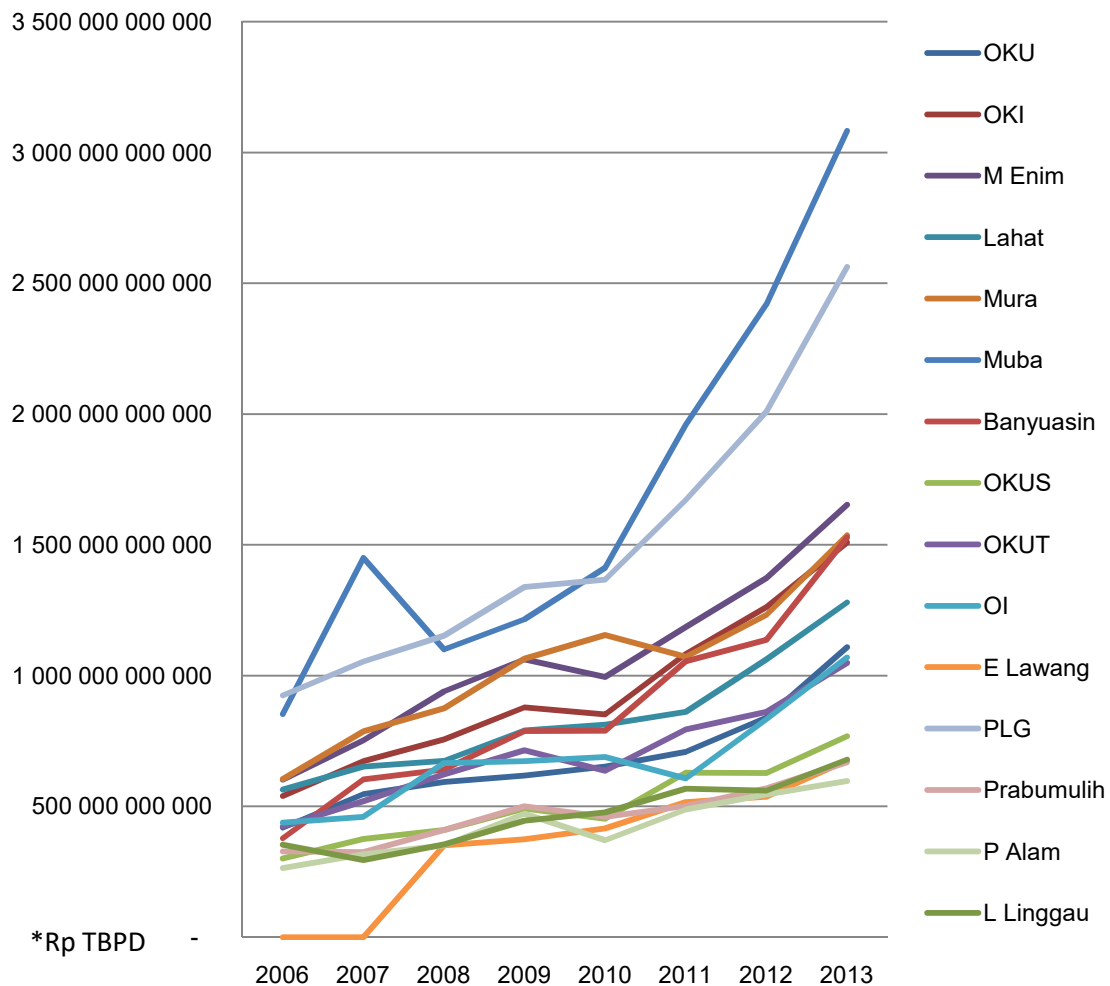


Figure 4 – Total Shopping District / Municipality in South Sumatra province, 2006-2013
Source: Ministry of Finance of the Republic of Indonesia, 2015.

Developments shopping district / city government showed an increase that continues from year to year. The average for all districts / cities total spending showed an improved trend from year to year. Data show that the Musi Banyuasin in the year 2013, total expenditure amounted to Rp.3.083.258.000, -. Total spending is the highest when compared to the district / city the other in South Sumatra province, next Palembang in the same year had a total expenditure of Rp.2.563.209.000, - and a district that has the third highest total expenditure is Muara Enim with a total expenditure of Rp.1.653.570.000,-. The average amount of total spending in 2006 to 2013 from the district / city in South Sumatra province is shown in Figure 5 below:

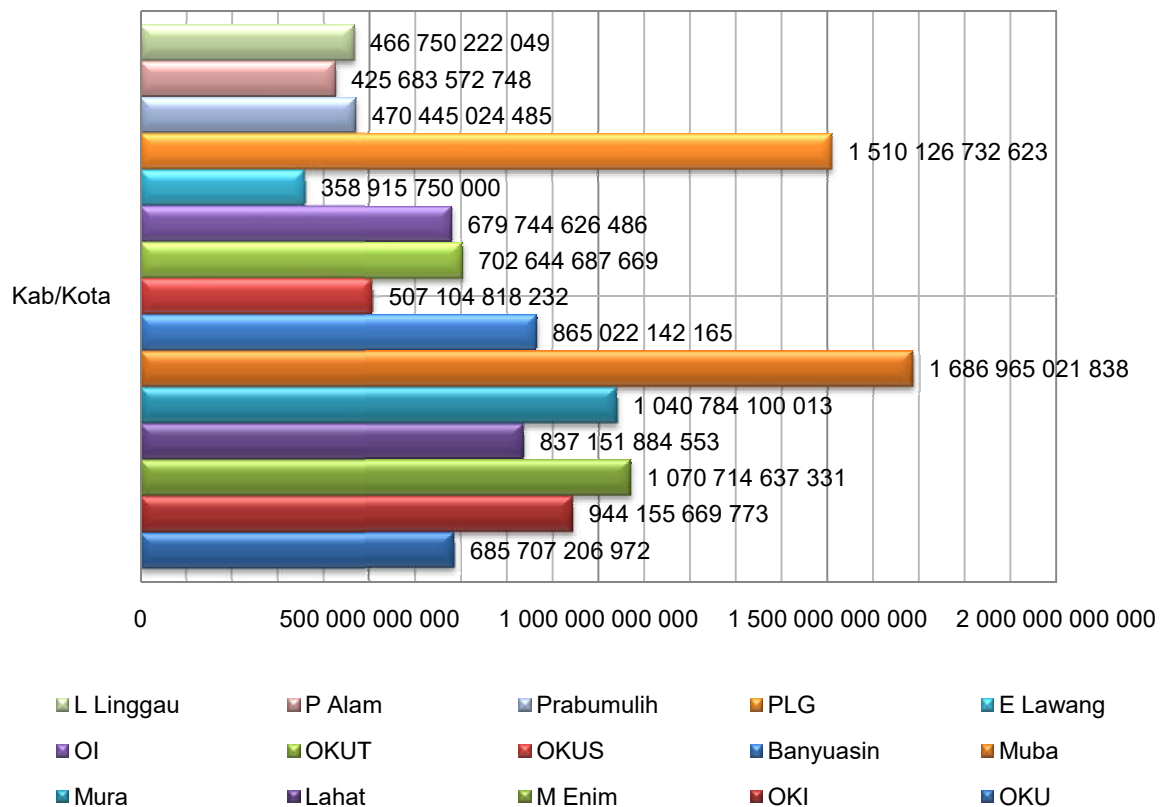


Figure 5 – Average Total Shopping District / Municipality in the South Sumatera Province, 2006-2013
Source: Ministry of Finance of the Republic of Indonesia, 2015.

Noting Figure 5 of the above average total shopping districts / cities in the province SumSelmenunjukkan that Musi Banyuasin, Palembang and Muara Enim has an average expenditure during the study period from 2006 to 2013 the highest among districts / cities.

DISCUSSION OF RESULTS

General Analysis Model Estimation. After analyzing the data obtained from various sources which have links with the object and subject of research by using four equations, the models presented are the final results after several rounds of refinement and adjustment to the input from various parties. Data were built in this model is the form of panel data, the structural equation has been built based on the data panel, and estimation methods used are data panel estimation method with fixed effect model specifications, common effect or random effect. Program and estimates for the parameters of the four equations comprising explanatory variable parameters are presented in full in Appendix, which is narrated in the section of this chapter. In general the results of analysis of the alleged parameters established above equation has a good value, it appears from the coefficient of determination (R²) substantially in each equation. This suggests that the explanatory variables or predetermined in each model can explain fluctuations endogennya real variable. The research looked at the alleged mark parameters in the model according to the hypothesis, which is based on the theory.

Alleged Parameter Equation. In the following analysis will be described coefficient parameters in each equation. In the first equation will be analyzed the effect of spending on the education sector (BSPDit), regional gross domestic product (PDRBit) and the allocation of funds umu (DAUit) to the improvement of education index. The second equation will be analyzed the influence of the health sector expenditure (BSKit), regional gross domestic product (PDRBit) and special allocation funds (DAKit) to the improvement of the health index (IKit). The third equation will be analyzed the effect of total expenditure (TBLJit) and gross

regional domestic product (PDRBit) to increase human development index (IPMit). The last equation is analyzed the influence of local aasli income (PADit), general allocation fund (DAUit), a special allocation fund (DAKit) and revenue sharing (DBHit) to increase the gross regional domestic product (PDRBit).

Analysis of the Education Equality Index. The analysis of the equation of education index (IPit) built with exogenous variables education sector expenditure (BSPDit), regional gross domestic product (PDRBit) and the general allocation fund (DAUit). In the early stages do regression to the data needed to determine how to estimate the model.

Based on the test results chow tests conducted for the right model whether common effect or fixed effect. Based on the analysis of test cow tests conducted by comparing the Sum Square Error of the model common effect and Sum Square Error of the fixed effect model in can be calculated F value of 32.7256 points. The value of F table at 5% by numerator df 14 and 102 denumerator can then F table value of 1.79 point. F count larger than F table then based on test chow H1 accepted and considered to use a fixed effect model. Hausman test is then performed to see if the model used using a fixed effect or random effect. By comparing the value of chi square table at df 5% then can the value of 7.815 points. Hausman statistical value in the can is 19.76 points. Based on these results it is estimated using a fixed effect models. Once can model using a fixed effect estimation then the next normality test. Normality test showed that the data distributed by normal or not normal. In the equation in the health index can point value probability of 0.625662. This value is greater than 5%. Probability value greater than 0.05 indicates that the normally distributed data and can be used in a statistical test. The results of model estimation using a fixed effect on equality in the education index can result in partial regression that the education sector expenditure (BSPD) has a significant influence on the increase in the index of education in the district / city of South Sumatra province. Values 11.4317 statistic t is greater than t table at a significance level of 5%. Probability value of education sector expenditure variable is 0.0000 which is less than 0.05 means that the variable education sector spending significantly affect the education index.

Variable gross regional domestic product (GRDP) partially also significantly affect the increase in education index with a value of t statistic of 16.59357 point. The value of this statistic t value is greater than t table at a significance level of 5% and variable degrees of freedom 12. Probability regional gross domestic product also showed a smaller number of 0.05. It can be stated that the regional gross domestic product variables significantly influence the education index. Variable general allocation fund (DAU) has a constant value is negative. This shows that the variable of general allocation funds negatively affect the education index with a value of -0.0967 point. The higher the general allocation fund the education index figures would be lower and vice versa. Partially general allocation fund a significant influence on improving education index with a value of 5.398047 t statistic point. The value of this statistic t value is greater than t table at a significance level of 5% and variable degrees of freedom 12. Probability regional gross domestic product also showed a smaller number of 0.05. It can be stated that the general allocation fund significant variable affecting the education index.

In theory should be the general allocation fund is positive affect education index but in the analysis results can reverse phenomenon. This phenomenon may occur due to the general allocation fund is the largest portion is used for personnel expenses or salaries of civil servants. It can also happen phenomenon caused by the number of civil servants were in excess of the maximum needs of the district / city. The advantages of these employees juimlah result in underpayment of salaries of employees coming from the general allocation fund so as to cover the deficit used also for shopping receipts from other funds.

The effect of the provision of salaries to civil servants are expected to spur motipaasi to all citizens to have an awareness of the importance of education and access to a decrease in the illiteracy rate also does not provide maximum results. Phenomenon is the general allocation fund is negative on the index of education can also be caused by the inefficiency of the salary given to local civil servants. Lebbih remuneration of the existing standards by incorporating various allowances that large values can also cause a general allocation fund

is negative toward education index. Policy implications that can be done by the district / city against the negative influence of the general allocation fund is to rationalize the number of employees in the district / city each so that the general allocation fund in addition be used for personnel expenditure, general allocation fund can also be used for capital expenditure can be a positive influence on the increase in the index of education, especially in South Sumatra.

Taken together the equations built affect the dependent variable with a value of F statistic of 40.98911 point. These statistical F value Leih the value of F table at a significance level of 5% F table is 3,88 point. That is jointly variable bebaas education sector expenditure, gross regional domestic product and the general allocation fund significantly affect the dependent variable education index. Based R2 test which determines the proportion of the total variation in the dependent variable explained by the independent variable in the value of R2 can be adjusted by 0.869009. This value means that 86.9009 percent of the variation of the dependent variable can be explained by the independent variable. Variations that can not be dijelas by the model is equal to 13.0991 percent. Another variation is explained by other variables other than those contained in the model. Noting the results table fixed effect model estimation also be constant in each district / city as the characteristics of the contribution the district / city to the significant value of the independent variable on the dependent variable.

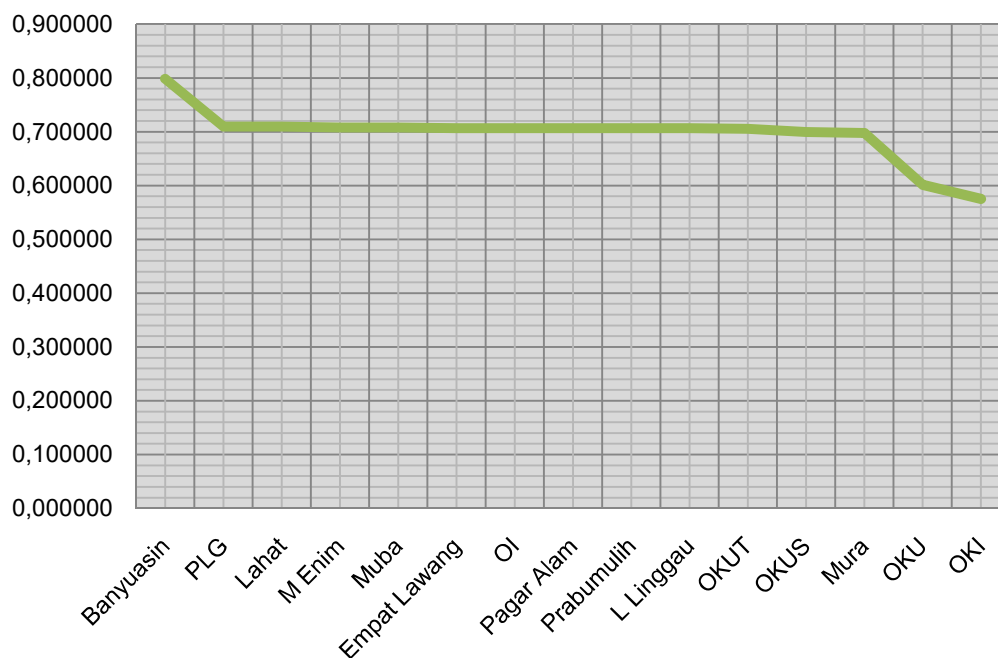


Figure 6 – Contributions district / city Against Education Index

Based on the above picture regencies / cities that most contributed to the variables that can explain these variations are Banyuasin district and the city of Palembang. The lowest contributor are OKU District and the OIC, while other districts / cities contribute relatively the same. Banyuasin the largest contribution to the improvement of education index is based on a constant which is derived due to the district was able to significantly decrease the number of illiterate adults. During the study period of 2006 to 29013 the number of illiterate adults in Banyuasin has decreased by 66.73%.

Analysis of Similarities Health Index. The analysis of the equation of the health index (IKit) built by the exogenous variables of health sector expenditure (BSKit), regional gross domestic product (PDRBit) and special allocation funds (DAKit). In the early stages do regression to the data needed to determine how to estimate the model.

Based on the test results chow tests conducted for the right model whether common effect or fixed effect. Based on the analysis of test cow tests conducted by comparing the Sum Square Error of the model common effect and Sum Square Error of the fixed effect model in can be calculated F value of 24.7564 points. The value of F table at 5% by numerator df 14 and 102 denumerator can then F table value of 1.79 point. F count larger than F table then based on test chow H1 accepted and considered to use a fixed effect model. Hausman test is then performed to see if the model used using a fixed effect or random effect. By comparing the value of chi square table at df 5% then can the value of 7.815 points. Hausman statistical value in the can is 23.76 points. Based on these results it is estimated using a fixed effect models. Once can model using a fixed effect estimation then the next normality test. Normality test showed that the data distributed by normal or not normal. In the equation in the health index can point value probability of 0.789525. This value is greater than 5%. Probability value greater than 0.05 indicates that the normally distributed data and can be used in a statistical test. The results of model estimation using a fixed effect on equality in the education index can result in partial regression that health sector expenditure (BSK) has a significant influence on the increase in the health index in the district / city of South Sumatra province. Statistical t value 3.397312 is greater than t table at a significance level of 5%. Probability value of education sector expenditure variable is 0.0010 which is less than 0.05 means that the variable health sector expenditure incurred by each district / city significantly affect health index. Variable gross regional domestic product (GRDP) partially also significantly affect the increase in education index with a value of 7.758033 t statistic point. The value of this statistic t value is greater than t table at a significance level of 5% and variable degrees of freedom 12. Probability regional gross domestic product also showed a smaller number of 0.05. It can be stated that the regional gross domestic product variables significantly affect the health index.

Variable Special Allocation Fund (DAK) has a constant value is negative. This indicates that the variable special allocation negatively affect education index with a value of -0.00251 point. The higher the specific allocation of funds, the health index figure would be lower and vice versa. Partially special allocation funds significantly influence the improvement of education index with a value of 4.879099 t statistic point. The value of this statistic t value is greater than t table at a significance level of 5% and variable degrees of freedom 12. Probability special allocation funds also showed a smaller number of 0.05. It can be stated that the special allocation fund significant variable affecting the health index. Variables affecting the special allocation fund index overall health can be caused by use of special allocation funds that have not been targeted. The use of special allocation funds that should be used to increase life expectancy as a component of the health indices are used for programs and activities that have the possibility to not affect the life expectancy of the district / city concerned.

Taken together the equations built affect the dependent variable with a value of F statistic of 106.6629 points. These statistical F value Leih the value of F table at a significance level of 5% F table is 3,88 point. That is jointly variable bebaas health sector expenditure, gross regional domestic product and special allocation funds significantly influence the dependent variable health index. Based R2 test which determines the proportion of the total variation in the dependent variable explained by the independent variable in the value of R2 can be adjusted by 0.937868. This value means that 93.7868 percent of the variation of the dependent variable can be explained by the independent variable. Variations that can not be dijelas by the model is equal to 6.2132 percent. Another variation is explained by other variables other than those contained in the model. Noting the results table fixed effect model estimation also be constant in each district / city as the characteristics of the contribution the district / city to the significant value of the independent variable on the dependent variable.

Based on Figure 7 above districts / cities that most contributed to the variables that can explain the variations and improvement of education index is Palembang, Muba regency, OKU District and Muara Enim. The lowest contributor are Mura district, Empat Lawang and South OKU.

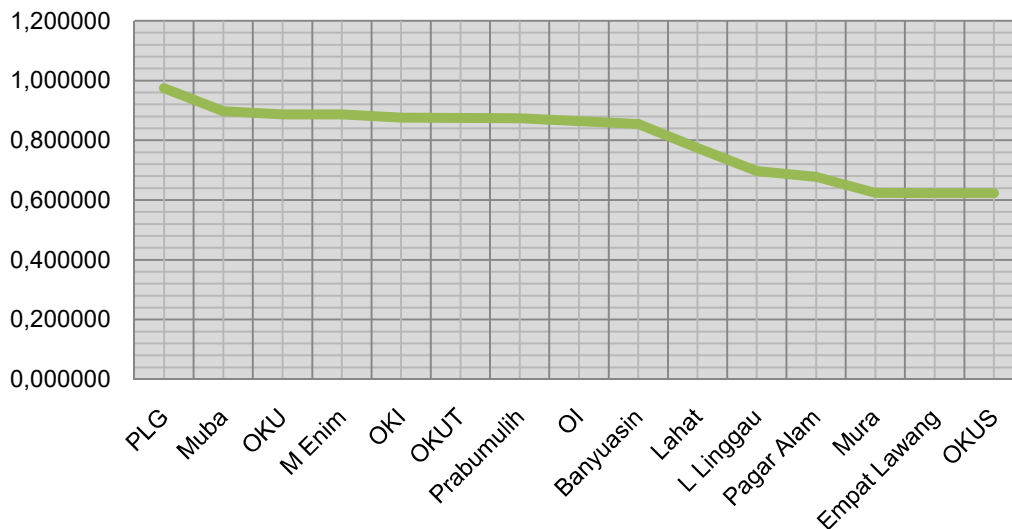


Figure 7 – Contributions district / city Against Health Index

Analysis of Similarities Human Development Index. The analysis of the equation of human development index (IPMit) built with exogenous variables total expenditure (TBLJit) and gross regional domestic product (PDRBit). Based on the analysis of test cow tests conducted by comparing the Sum Square Error of the model common effect and Sum Square Error of the fixed effect model in can be calculated F value of 5.6547 points. The value of F table at 5% by numerator df 14 and 102 denominator can then F table value of 1.79 point. F count larger than F table then based on test chow H1 accepted and considered to use a fixed effect model.

Hausman test is then performed to see if the model used using a fixed effect or random effect. By comparing the value of chi square table at df 5% then can the value of 7.815 points. Hausman statistical value in the can is 14.72 points. Based on these results it is estimated using a fixed effect models. Once can model using a fixed effect estimation then the next normality test. Normality test showed that the data distributed by normal or not normal. On the human development index in the equation can point value probability of 0.589241. This value is greater than 5%. Probability value greater than 0.05 indicates that the normally distributed data and can be used in a statistical test. The results of model estimation using a fixed effect on the human development index in the equation can result in partial regression that total spending has a significant influence on the increase of the index development in the district / city of South Sumatra province. Value 5.2560762 statistic t is greater than t table at a significance level of 5%. Probability value of education sector expenditure variable is 0.0000 which is less than 0.05 means that the total variable expenditure (TBLJ) issued by each district / city significantly affect human development index. Variable gross regional domestic product (GRDP) partially also significantly affect the increase in education index with a value of t statistic of 13.09415 point. The value of this statistic t value is greater than t table at a significance level of 5% and variable degrees of freedom 12. Probability regional gross domestic product also showed a smaller number of 0.05. It can be stated that the regional gross domestic product variables significantly affect human development index.

Taken together the equations built affect the dependent variable with a value of F statistic of 175.2942 points. These statistical F value Leih the value of F table at a significance level of 5% F table is 3,88 point. That is jointly variable bebaas total expenditure, gross regional domestic product significantly affect the dependent variable of human development index. Based R2 test which determines the proportion of the total variation in the dependent variable explained by the independent variable in the value of R2 can be adjusted by 0.959074. This value implies that 95.91 percent of the variation of the dependent variable can be explained by the independent variable. Variations that can not be dijelas by

models amounted to 4.09 percent. Another variation is explained by other variables other than those contained in the model.

Noting the results table fixed effect model estimation also be constant in each district / city as the characteristics of the contribution the district / city to the significant value of the independent variable on the dependent variable.

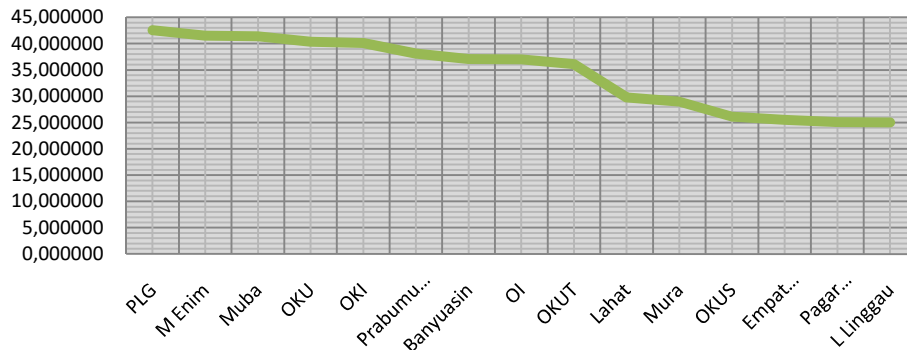


Figure 8 – Contributions district / city Against Human Development Index

Based on the above picture regencies / cities that most contributed to the variables that can explain the variations and increase development index is Palembang, Muara Enim, Muba Regency and Regency OKU. The lowest contributor are Pagar Alam, Empat Lawang and Lubuk Linggau.

Analysis of Gross Regional Domestic Product Equation. The analysis of the equation of regional gross domestic product (PDRBit) is built with an exogenous variable revenue (PADit), general allocation fund (DAUit), a special allocation fund (DAKit) and revenue sharing (DBHit). Based on the analysis of test cow tests conducted by comparing the Sum Square Error of the model common effect and Sum Square Error of the fixed effect model in can be calculated F value of 17.3756 points. The value of F table at 5% by numerator df 14 and 102 denominator can then F table value of 1.79 point. F count larger than F table then based on test chow H1 accepted and considered to use a fixed effect model.

Hausman test is then performed to see if the model used using a fixed effect or random effect. By comparing the value of chi square table at df 5% then can the value of 7.815 points. Hausman statistical value in the can is 19.987 points. Based on these results it is estimated using a fixed effect models. Once can model using a fixed effect estimation then the next normality test. Normality test showed that the data distributed by normal or not normal. At equality index in the regional gross domestic product can be of value probability of 0.569717 point. This value is greater than 5%. Probability value greater than 0.05 indicates that the normally distributed data and can be used in a statistical test. The results of model estimation using a fixed effect on the equation of regional gross domestic product can result in partial regression that local revenues have a significant effect on the increase in the index development in the district / city of South Sumatra province. 30.70586 statistic t values greater than t table at a significance level of 5%. Probability value of education sector expenditure variable is 0.0000 which is less than 0.05 means that the variable source revenues issued by the respective district / city significantly affect the regional gross domestic product.

Variable general allocation fund (DAU) partially does not significantly affect the increase in regional gross domestic product with a value of t statistics for -1.091596 point. Probability variable general allocation funds also show a number greater than 0.05. It can be stated that the variable of general allocation funds (DAU) did not significantly affect the regional gross domestic product. Partially special allocation funds have a significant effect on the increase Based on the results table equation analysis on the regional gross domestic product may result DAK have a significant effect on the increase in the gross regional domestic product regencies / cities of South Sumatra province. Statistical t value 2.415678 is

greater than t table at a significance level of 5%. DAK variable probability value of 0.0175 which is less than 0.05 means that the variable special allocation issued by the respective district / city significantly affect the regional gross domestic product. in the district / city of South Sumatra province. Variable profit sharing fund (DBH) partially significantly affect the increase in regional gross domestic product with a value of t statistic of 13.31120 point. Probability variable general allocation funds also show a number greater than 0.05. It can be stated that the variable profit sharing fund (DBH) significantly affect the regional gross domestic product.

Taken together the equations built affect the dependent variable with a value of F statistic of 824.2435 points. These statistical F value Leih the value of F table at a significance level of 5% F table is 3,88 point. That is jointly variable bebaas PAD, DAU, DAK and DBH significantly affect the dependent variable gross regional domestic product. Based R2 test which determines the proportion of the total variation in the dependent variable explained by the independent variable in the value of R2 can be adjusted by 0.992033. This value means that 99.2033 percent of the variation of the dependent variable can be explained by the independent variable. Variations that can not be explained by the model is equal to 7.967 percent. Another variation is explained by other variables other than those contained in the model. Noting the results table in the fixed effect model estimation can be constants in the district / city as the characteristics of the contribution the district / city to the significant value of the independent variable on the dependent variable.

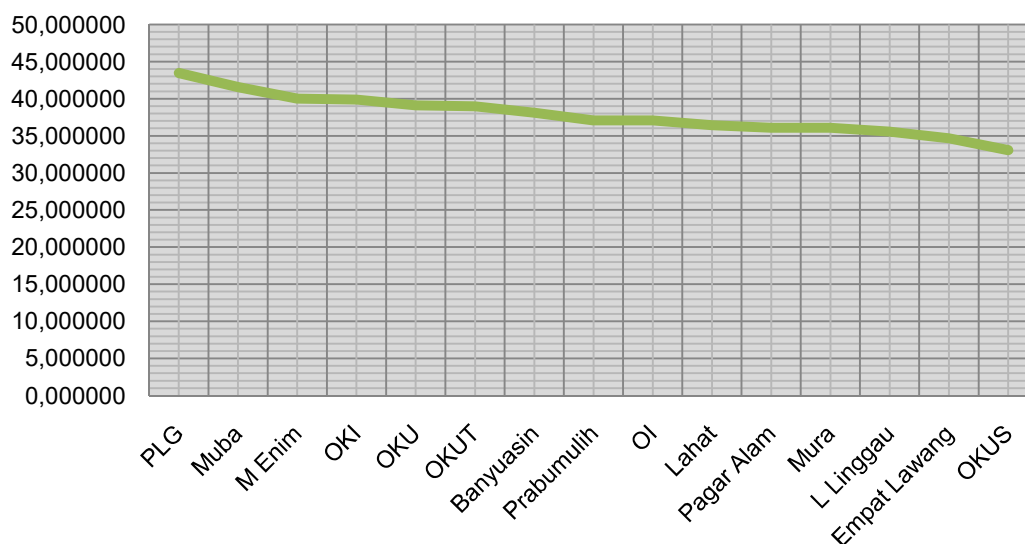


Figure 9 – Contributions district / city Against Gross Domestic Products

Based on the above picture regencies / cities that most contributed to the variables that can explain the variations and an increase in regional gross domestic product is the city of Palembang, Muba District, Muara Enim and OKI. The lowest contributor are Lubuk Linggau Empat Lawang and South OKU District.

CONCLUSION

The analysis showed partial education sector expenditure (BSPD), GRDP and DAU have a significant effect on the increase in the index of education in the district / city of South Sumatra province. Value t statistic is greater than t table at a significance level of 5% and a degree of freedom 12. The variable DAU negatively correlated to education index. Taken together the independent variable education sector expenditure, gross regional domestic product and the general allocation fund significantly affect the dependent variable education index. R2 test showed 86.9009% can be explained by this model. Analysis of the health

index equation can result in that the partial expenditure health sector (BSK), the GDP and DAK have a significant effect on the increase in the health index in the district / city of South Sumatra province. Value t statistic is greater than t table at a significance level of 5%. DAK negatively correlated to the health index. Taken together the equations built affect the dependent variable with a statistical F value is greater than the value of F table at a significance level of 5%. R2 test which determines the proportion of the total variation in the dependent variable explained by the independent variable in the value of R2 can be adjusted by 0.937868. Analysis of the human development index in the equation can be partially the result that the exogenous variables have a significant influence on the increase in the index development in the district / city of South Sumatra province. Value t statistic is greater than t table at a significance level of 5%. Taken together the equations built affect the dependent variable with a statistical F value is greater than the value of F table at a significance level of 5% F. Based on the test R2 total variation in the dependent variable explained by the independent variable in the value of R2 can be adjusted by 0.959074, Analysis of regional gross domestic product equation can result in that partially exogenous variables have a significant influence on the increase in the GDP district / city of South Sumatra province except for the variable DAU. Value t statistic is greater than t table at a significance level of 5%. DAU variable and no significant negative correlation. Taken together the equations built affect the dependent variable with a statistical F value is greater than the value of F table at a significance level of 5%. R2 value which determines the proportion of the total variation in the dependent variable explained by the independent variable in the value of R2 can be adjusted by means 99.2033 0.992033 these variations can be explained by this model.

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DOI <https://doi.org/10.18551/rjoas.2017-01.09>

THE IMPACT OF E-WOM ON DESTINATION IMAGE, ATTITUDE TOWARD DESTINATION AND TRAVEL INTENTION

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ABSTRACT

Electronic word of mouth (e-WOM) is a new development of word of mouth by using social media platform to interact in the internet. Current studies only examine the model on its own basis by using theory planned behavior (TPB). Based on this idea, this research is trying to examine the model of e-WOM, Destination Image, Attitude Toward Destination together to reveal which factor that give the greater effects against travel intention both direct effect, indirect effects and total effects. The study was using the Generalized Structured Component Analysis (GSCA) methodology to test the model. The research object was the @explore_batu in Instagram as many as 167 online respondents against tourist destination in Batu City. Results show that: (1) e-WOM positively influences Destination Image; (2) e-WOM positively influences Attitude Toward Destination; (3) e-WOM positively influences Travel Intention; (4) Destination Image influences Travel Intention and (5) Attitude Towards Destination influences Travel Intention. The e-WOM is a crucial part of this research because has a greater effect on Destination Image and Travel Intention. Implication, limitation, discussion and future research direction are discussed at the end of the paper.

KEY WORDS

e-WOM, destination image, attitude toward destination, travel intention.

The internet growth has seen and adoption of new ways of consumer trends. WOM has involved in an entirely new form of communication by adopting internet technology. This is termed as electronic word of mouth (e-WOM) communication, e-WOM can be defined as any positive or negative statement made by potential, actual, or former customers about a product or company which is made available to a multitude of the people via the internet (Hennig-Thurau et al, 2004). McKinsey and Company published a report on e-WOM and stated that the scope of e-WOM in emerging markets is relatively higher than traditional advertising.

In 2012, growth in data usage is generally driven by the growth of mobile phone owners, especially smartphones. A survey Netizen Indonesia 2012 conducted by Markplus Insight showed some interesting findings. One of the most important positive growth of data usage in Indonesia, about 40% of Internet users in Indonesia access the Internet more than 3 hours per day can be classified as Netizen. The community such as youth, women and netizen more often use the time to explore the internet to share pictures, songs, data and stories to friends (Kertajaya and Nirwandar, 2013). As shown in table 1.1 it is amazing to note that netizen population has grown exponentially from 4,160,000 people in 2010 to 61,080,000 people in 2012, the data has shown total internet users penetration are very high (Kertajaya and Nirwandar, 2013). The growth of internet users makes people look for information in advance about tourism services, such as accommodation, entertainment available, the typical food of the area and the circumstances surrounding community locations in tourism destinations. Services providers are also increasingly active and begin to provide a reliable platform for tourist information.

Although e-WOM is more effective than traditional ads, recommendation messages from individuals who formatted text based clearly presents obstacles and difficulties in assessing familiarity and reliability of the source of the message (Chatterjee, 2001). Based on it, online customers will have a dilemma and doubt in trusting the messages that are sent from another user. Marketers need to understand the credibility the message sources and

the message appeals to understand the effect of e-WOM. The recommendation or some review that have been given to another customer in shared reviews or community platform undoubtedly able to influence the travel intention of customers. Message sources credibility has a lot of effects on whether or not the customers believe the message (Wu and Wang, 2011).

Table 1 – Growth of Internet Users in Indonesia

Classification	2010	2011	2012
Urban Population	Mlns		
Urban Family	121.16	123.24	123.57
Urban Netizen Population	37.56	50.53	56.38
Netizen Population	42.16	55.23	61.08
Total Internet User Penetration	17%	22.4%	23.5%

This research will be conducted in explore_batu as online travel reviews on Instagram who give reviews and share tourist destination in Batu City. Explore_batu attract to research because Batu City has more than 20 tourists destinations. Batu City has beautiful panorama and potential to attract tourist to visit and enjoy mountains area. At the 19th century Batu City has started to grow as a tourist destination, especially for Hollander, so they started to establish rest area and villa for staying at Batu City (Hudjiono, 2012). Today, Batu City is one of the favorite places for a holiday. Enjoying diverse recreational places such as Jawa Timur Park, Selecta, Cangar, Coban Rondo Waterfall, Paralayang, Songgoriti, Museum of Transportation, Eco Green Park, Batu Night Spectacular, Cangar and Predator Fun Park. The local government and investors have successfully developed the tourism industry in this city, as reflected by the break of the tourist who visit Batu city amount 3.29 million in 2014 (BPS Kota Batu, 2014). Table 2 shows total Tourist Arrival in Batu City as follow,

Table 2 – Tourist Arrival in Batu City

Year	Tourist Arrival
2008	1,180,042
2009	1,906,170
2010	2,084,487
2011	2,030,194
2012	2,547,885
2013	3,292,298

THEORETICAL REVIEW

Consumer Behavior in Tourism. The mostly travel providers' considered experience of services quality (Sorensen, 2013), mainly intangible that quality is difficult to be evaluated prior consumption (Zeithaml et al, 2013). Consumer behavior determines high customers' involvement in buying decision practices and a consequent high risk perception that usually generates a longer and more complex consumer behavior process (Laroche et al, 1996). Moreover, purchase of travel services is increasingly taking place in the online environment (Vigilia, 2014).

Table 3 – The Stages of Consumers' Behavior and Travel Planning Process

Consumer Behavior Stages	Three Phase Travel Planning Process
Need Recognition	Pre-Trip Phase (anticipatory)
Information Search	
Evaluation of Alternatives	
Purchase Decision	
Post purchase (Post Decision Behavior)	During Trip Phase (experiential)
Consumption	
Post Purchase (Post Consumption Behavior)	Post Trip Phase

In order to analyze how consumers buy tourism services, a brief review of the theories regarding purchasing process is presented in traveler buying process. Based on to the decision making studies, the traveler buying process consists of five stages, need recognition, information search evaluation of alternatives, purchase decision, and post purchase behavior (Kotler et al, 2010; Zeithaml et al, 2012). A perspective of analysis of the tourists' planning process (travel planning theory) suggests a temporal perspective based on a process generally composed by three phases, pre-trip, during-trip, and post-trip (Minnazi, 2015). The anticipatory phase, the experiential phase and the reflective phase (Jennings, 2006).

Social Media Marketing. Social media is the service that can support collaboration, interaction and communication through discussion, feedback, voting, comments and share information for users. Evans and Mckee (2010) said that «social media marketing is practiced for involving customers at social online whereas the users can feel the natural experience and spending their time». As the comparison, social business focuses on what the consumers say and seeking the creation of communication among consumers with company or community.

Mobile Social Media Marketing In Tourism. The combination of social media and mobile technologies has changed the way people communicate and influence all the steps of travel planning behavior. Especially, the convergence of social media, virtual reality and physical space determines the development of a new perspective toward mobile social media (MSM) (Minazzi, 2015). The development of mobile devices connected to the Web, along with the convergence of social media, physical space and virtual reality, determines a change of paradigm against Ubiquitous Social Media (USM) (Mandelli and Accoto 2012) or Mobile Social Media (MSM) (Kaplan, 2012; Buhailis and Foerste 2013).

Theory Planned Behavior (TPB). Ajzen (1991, in Jalilvand and Samiei, 2012) Theory of Planned Behavior (TPB) model, described how behavior is formed. According to the TPB, a person can act on the intentions only if they have control over the behavior (Ajzen, 2002). This Theory is not only intended to explain all habits where people have the ability to exert self control. This theory not only emphasizes the rationality of human behavior, but also on the belief that the target behavior is under the control of the individual consciousness or a behavior not only depends on one's intention to other factors which do not exist under the control of the individual, such as the availability of resources and opportunities to display such behavior (Ajzen, 2002). Based planned Theory of Behavior intention is a function of three determinants, the one that is personal, reflecting both social influence and the third related to the problem of control (Ajzen, 2002).

TPB of tourism and hospitality (Jalilvand and Samiei, 2012). Further, there is one research that integrated an additional variable into TPB model (Cheng et al, 2006). Cheng et al (2006) add variable WOM into TPB model, In this research tries to add a new dimension of e-WOM to TPB model and investigates e-WOM has impact on the TPB relationships especially image destination, attitude toward destination influence travel intention.

Electronic Word of Mouth (e-WOM). A level of online interaction and engagement of people changes also according to how they perceive themselves in relation to others member. Based on Lee et al. (2012), individuals with interdependent self-construct perceive themselves in networking with others and part of larger community. Therefore they are more likely to involved and interact with community members. The sense of belonging among consumer with the consumers and consumers with the community of the active participation in a travel community can increase the action knowledge sharing in social media (Qu and Lee 2011). Moreover, e-WOM gives the opportunity to people to exert a collective power over companies.

A recent study from Cheung and Lee (2012) found that sense of belonging, enjoyment of helping others, and reputation are the reasons that have a high influence on the customer intention of spreading e-WOM. Finally, a strong reason for creating UGC (User Generated Content) is also to have pleasure and fun interacting with other people (Para-Lopez et al, 2012). Moreover, according to previous research of Gretzel (2008) travelers' income level,

culture, age, nationality involvement, as well as personality are key factors that influence travelers' social media use and engagement.

Destination Image. In order to successfully in marketing tourism destination, the marketer destination needs to understand the destination image by actual and potential tourist. Destination image as a construct has been defined by Crompton as '«the sum beliefs, ideas and impressions that a person has a destination» (Vaughan, 2007). The image for tourist is very important (Tasci and Gartner, 2007), destination image influences the final choice or behavioral intention (Chen and Tsai, 2007). A collection of specific destination attributes has a profound influence on tourist decision to travel (Loes, 2011), before and after visit including revisit intention.

Gartner (1993, in Nassar et al, 2015) proposed that destination image is composed of three integrated components: Cognitive (How travelers perceive a destination), Affective (how travelers feel about it), Conative or behavioral (how cognitive and affective image influences and predicts traveler's buying behavior). Figure 2.2 shows general framework image destination formation from previous research. According to Baloglu and McCleary (1999) image was created by stimulus (value, motivation, attitude, age, and education level) and external factor (information source and previous experience).

Attitude Toward Destination. Attitudes, which are relatively permanent and stable evaluative summaries about an item, are an important psychological construct because they have been found to impact and predict many behaviors (Kraus, 1995 in Jalilvand and Samei, 2012). Attitude toward destination emphasize tourist behavior, tourist attitude describes the psychological tendencies expressed by the positive or negative evaluation of tourists when involved in certain behaviors (Ajzen, 1991; Schiffman and Kanuk, 1994; Kraus, 1995 in Jalilvand and Samei 2012). As well as image destination, Tourist's attitude comprised cognitive, affective and behavioral components (Vincent and Thompson, 2002). The cognitive response is the evaluation made in forming an attitude, the effective response is a psychological response expressing the preference of a tourist for an entity and the behavioral component is a verbal indication of the tourist intention to visit. Attitudes predisposes a person to act or perform in a certain manner as shown in studies of household recycling behavior, environmental behavior, and tourism behavior (Jalilvand and Samei, 2012). Tourist attitudes is an effective forecasting of tourist decision for traveling to a certain destination (Jalilvand and Samiei, 2012).

Travel Intention. Behavioral travel intention is a central model and represents the extent of the individual's intentions to perform or not perform one certain behavior (Ajzen, 1991 in Jalilvand and Samiei, 2012). Travel intention represents how a person is willing to adopt a behavior and how much effort he is likely to deploy against that behavior. Behavior in travel intentions are an indication of the readiness to undertake a given behavior and are assumed to precede actual behavior (Zarrad and Debabi, 2015).

For investigating decision making process leading to the choice of travel destination, the theory of planned behavior is often used as a research framework to predict the behavioral intention of choosing a destination (Jalilvand and Samiei, 2012). The central paradigm of the theory of planned behavior is that people are apt to implement particular types of behavior. The specific referents will value and approve of the behavior and that they have necessary resources, abilities, and opportunities to perform such behavior (Ajzen, 1991 in Jalilvand and Samiei, 2012).

CONCEPTUAL FRAMEWORK AND HYPOTHESES

e-WOM Influence on Destination Image. According to the previous research, it can be made any explanation of the relationship between e-WOM Influence Image Destination. Jalilvand and Samiei (2012) e-WOM has an influence on Destination Image. It supported previous research by Setiawan et al. (2014) that e-WOM has a significant direct effect on destination image. e-WOM is defined as either negative or positive statement made by potential, current and former customer about service or product, which is intentionally made

to be heard or seen by a lot of people and institution through internet media (Hennig-Thurau et al, 2004).

e-WOM has the influence on destination image, according to in Setiawan et al. (2014) e-WOM affect the destination image because the higher customers share the travel experience through photos on social media will make image destination. It is supported by previous research from Beerlin and Martin (2004, in Jalilvand and Samiei, 2012) concurred that WOM Recommendations from friends and relative were the most truthful and believable communication channel, which also influenced the image of the destination.

Burgess (1978, in Khairani, 2009) hypothesized that types, quality and quantity from information influence on image, the result from Holbrook (1982) proved that information sources influence on cognitive component from image destination but cognitive component were not influenced by image. Based on previous research, has proven that total of information sources can be used and types of information sources have significance influence on cognitive image destination evaluation for tourist destination (Khairani, 2009).

H1: e-WOM has a significant influence on image destination.

e-WOM Influence on Attitude Toward Destination. Attitude toward destination refers to the person's overall evaluation of performing the behavior. Attitude toward destination has been defined as the degree to which a person a favorable or unfavorable evaluation or appraisal of the behavior question, the more favorable the attitude toward destination the stronger will be an individual's intention to adopt the behavior (Zarrad and Debabi, 2015). According to Zarrad and Debabi (2015) find e-WOM has a significant influence on attitude toward the destination. The research supported by Jalilvand and Samiei (2012), the research finding e-WOM has a significant effect on attitude toward the destination. Pietro and Virgilio (2012) find the e-WOM has a positive significant effect on attitude towards the destination it is supported by social networks, which represent a new source of entertainment by providing some interactive tools for sharing experiences and creating new knowledge topic oriented.

H2: e-WOM has a significant influence on attitude toward destination.

e-WOM influence on Travel Intention. e-WOM influence on Travel Intention refers to the person's give a recommendation, comment, and giving appraisal about tourist destination through the internet and social media. It can make the others user on the internet and especially in social media is influenced. In social media such as Instagram, every person have followers and everything post on Instagram will be viewed and read by followers, so that is why e-WOM give a recommendation that influence the others tourist intent to travel.

e-WOM influence on travel intention supported by previous research from Zarrad and Debabi (2015) that e-WOM was positively associated with tourist' future traveling intention towards visiting Tunisia and emphasize the relevance of online user-generated reviews to business performance in tourism. That research refers to Albarq (2013) that e-WOM influence on travel intention to visit Jordan. Jalilvand and Samiei (2012) researched finding that e-WOM impact on travel intention, in that research the antecedents of travel intention in the context of e-WOM on a tourism destination choice is significant because it can help positive destination image and more important to increase tourist's intention to travel. In fact, e-WOM recommendations originated from previous visitors can be taken as the most reliable information sources for potential tourist. Recommendation to the other people in online activities is one of the most important types of information for the tourist interested in traveling.

H3: e-WOM significant influence travel intention.

Destination Image Influence on Travel Intention. Destination image influence on Travel Intention refers to research from Nassar et al (2015) that the importance of effective destination image, travel motivation and cognitive destination image in predicting Kuwaiti traveler behavior, the research finding suggest targeting Kuwaiti nationals with particular strategies that focus on destination image as the largest significant effects on travel intention. Previous research refers to Phau and Quintal et al (2015) that destination image was influenced by consumption value through perceived destination image. It means emotional values in consumption values are significantly influencing the composite vacation destination perception and destination choice intention to Mauritius.

Research from Phau and Quintal et al (2015) support the research from Mwaura and Acquaye et Al (2013), the main finding shows image plays an important role in determining whether a destination will be visited or not. The most positive part of their visit was landscaped and authentic nomadic culture cherishes by local people. The psychological image of Mongolia as described by visitor was magnificent, authentic, wild and peaceful. However, destination image of Mongolia has a brand awareness because of Genghis Khan which is often used by Mongolian tour operators to promote Mongolian tourism.

H4: Destination Image Influence on Travel Intention.

Attitude Toward Destination Influence on Travel Intention. Previous research from Jalilvand and Samie et al (2012) has found attitude Toward Destination impact on travel intention. Tourist's positive experience of services, products and other resources provided by tourism destination could lead to repeat visits and to disseminate positive through e-WOM about the destination among tourist. The previous research refers to Pietro and Virgilio (2012) that tourist's attitude towards the use of the social network for archiving information for the destination choice has a strong influence. Hence, being present on social media can play a critical role in attracting new tourist destination and maintaining the existing ones.

H5: Attitude Toward Destination Significant influence on Travel Intention

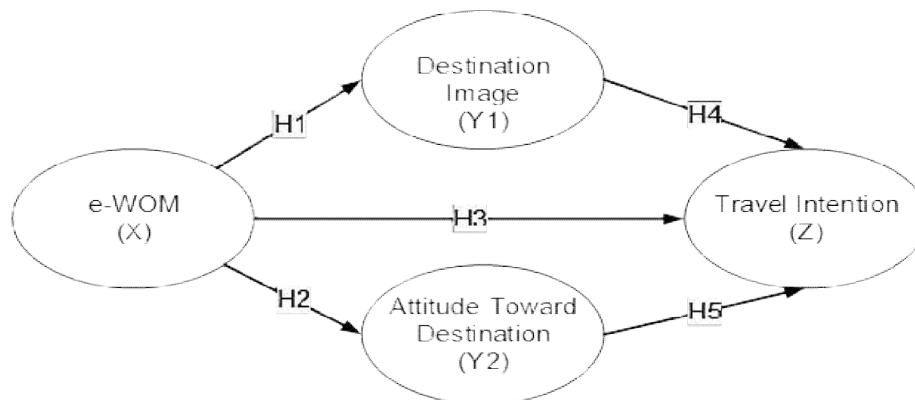


Figure 1 – Hypothesis Model

RESEARCH METHODS

Instrument Development. The research instruments were developed based on the previous research by an adjustment to fit with the topic being studied. The questions are enclosed in the end of the paper.

Data Collection. The data was collected through survey conducted in Batu City Through Instagramo. The target was the Instagram follower of @explore_batu as online travel reviews. The pilot test with 30 respondent was used to make sure that the questions and wordings were clearly understood by respondents. The total sample when the research was take a place was as many as 13,200 follower. The survey was done in electronic version by using Google docs namely Google form. The questionnaire was sent to @explore_batu and post to Instagram. From total 230 the questionnaire that has been filled is 167 of them can be analyzed. The total valid respondent included 50 males and 117 females. The response range was from 15 to 45 years old, which is mostly coming from undergraduate background and senior high school.

Data Analysis. The present study applies Generalized Structured Components Analysis (GSCA) which is SEM based as recommended has many advantage over other methods (Hwang et al, 2004). GSCA method also can be applied to the complex relationship between variables (can be recursive and not recursive), involves higher-order components (factors) and multi-group comparisons.

Table 4 – Variable Measurement GeSCA Output

Variable	Indicator	Weight		
		Estimate	SE	CR
e-WOM	Personal self enhancement	0.512	0.053	9.74*
	Social benefit	0.168	0.047	3.53*
	Advice Seeking	0.266	0.046	6.49*
	Help other Consumer	0.089	0.041	2.17*
Destination Image	Cognitive	0.843	0.065	12.99*
	Affective	0.165	0.067	2.45*
Attitude Towards Destination	Cognitive	0.266	0.109	2.44*
	Affective	0.435	0.102	4.27*
	Behavioral	0.318	0.064	5.0*
Travel Intention	Explorative Intention	0.234	0.043	5.48*
	Preferential Intention	0.781	0.041	18.94*

CR* = significant at 0,05 level.

RESULTS AND DISCUSSION

Measurement Model. In measure the results of the study, there will two steps of measurements which is the first was the variable measurement to measure the results of each variable. The results of variable were be shon in table below shows that all of the variable is able to explain the model by the fit criteria and afit criteria that are at least greater than 0.6 which is means that the items in each variable are able to explain the variable for more than 60% which is the rest is explained by using other items that were not included in this research. The estimated free parameter which meanst that the whole item in each indicator was simply formed by the items stated in this research.

The estimation results from GeSca are shown in figure 2 table 2. According to the results, all the paths among construct are positive and significant at the 0.05 level. The model validity.

The research is empirically tested social commerce construct and bran image throughout the survey. To do this the research performed bootstrapping in the GeSCA software to test the significance of construct path coefficient identified by critical value. The path coefficient was identified in the figure 2. The bootstrapping of 167 sample has shown that e-WOM has a significant influence on travel intention at CR 121.87. Therefore, H1 is supported. The impact of e-WOM on attitude toward destination is also shows a positive and significant effect at CR 98.33 Therefore, H2 is supported. Impact of e-WOM on Travel intention is also shows a positive and significant effect at CR 3.48 , therefore H3 is supported.

The Impact of destination image on travel intention is also shows a positive and significant effect at CR 2.18, therefore H4 is supported. The impact of attitude toward destination on travel intention is also shows a positive and significant effect at CR 3.62. Therefore, H5 is supported.

Table 5 – Model Fit of Structural Model (Overall Model)

Model Fit	
FIT	0.703
AFIT	0.700

Table 6 – Structural Model Path Coefficient

No.	Direct effect	Estimate	SE	CR
1.	e-WOM (X) → Destination Image (Y1)	0.970	0.008	121.87*
2.	e-WOM (X) → Attitude Toward Destination (Y2)	0.962	0.010	98.33*
3.	e-WOM (X) → Travel Intention (Y3)	0.316	0.091	3.48*
4.	Destination Image (Y1) → Travel Intention (Y3)	0.256	0.117	2.18*
5.	Attitude Toward Destination (Y2) → Travel Intention (Y3)	0.410	0.113	3.62*

CR* = significant at 0,05 level.

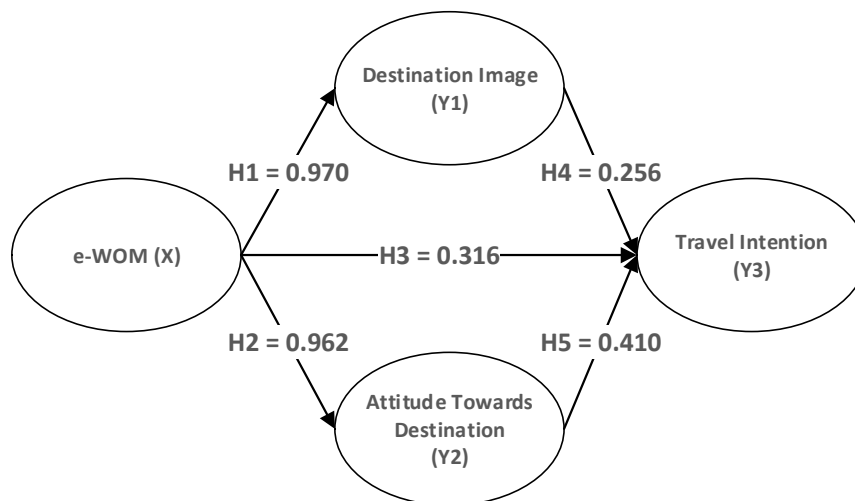


Figure 2 – Hypothesis Testing Results

The indirect effect of e-WOM against travel intention mediated by destination image and attitude toward destination can be seen on table 5. The indirect effect were indicates that the e-WOM impact on Travel intention mediated by Attitude Towards Destination has shown the larger effect estimated as many as 0.394 at CR 2.19 while the e-WOM on travel intention mediated by destination image shows as many as 0.248 at CR 2.19.

Table 7 – Indirect and Total Effect

Independent Variable	Dependent Variable	Intervening Variable	Direct Coefficient	Indirect Coefficient	SE	CR	Result
e-WOM	Destination Image	-	0.970	-	0.008	121.87 [*]	Significant
e-WOM	Attitude Towards Destination	-	0.962	-	0.010	98.33 [*]	Significant
e-WOM	Travel Intention	-	0.316	-	0.091	3.48 [*]	Significant
e-WOM	Travel Intention	Destination Image	-	0.248	0.114	2.19 [*]	Significant
e-WOM	Travel Intention	Attitude Towards Destination	-	0.394	0.109	3.63 [*]	Significant
Destination Image	Travel Intention	-	0.256	-	0.117	2.18 [*]	Significant
Attitude Towards Destination	Travel Intention	-	0.410	-	0.113	3.62 [*]	Significant

CR* = significant at 0,05 level.

Theoretical and practical contribution. This research was aimed to understand and then describe the impact of e-WOM on Destination Image, Attitude Towards Destination and Travel Intention by using Theory Planned Behavior Approach and social media Instagram. The finding concluded in this research is expected to give a theoretical contribution in social media marketing in tourism and hospitality, particularly the one that related on theory planned behavior on social media Instagram.

The finding was shown that e-WOM on Destination Image is having a greater impact as a direct effect. The research finding was also shown e-WOM on Travel Intention by intervening variable attitude towards destination have a greater indirect effect. Insatgramers tend to believe information sources in e-WOM can influence destination image, attitude toward destination and travel intention, it means social media Instagram can influence Instagramers are willing to visit tourist Destination in Batu City.

In this research is expected to give any insight to the business, community and government to define marketing strategies particularly to face social media interaction with the user of Instagram in order to want to visit Batu City as tourist destination. the revolution of social life in digital era is a challenge for the business, community and government to get in touch with tourist who use Instagram. From the finding above it is expected that business practitioners, government and community able to improve e-WOM in Instagram in order to response and facilitate information about a tourist destination and also gaining more potential tourist that are interested with Batu City.

Research limitation and future research. This research is only focusing on one industry which it may be able to be generalized in the total amount of camera and imaging sectors, but it may still has a possibility that the finding could not applied on cross-company or cross-industry sector. The sample involved in this research is relatively in a small amount, so it may limit the generalization of research finding. Since the research is has a timeline during the design to keep the interpretation are stand still with the current situation, the data amount has to be tolerated in a small amount since the online survey is rather difficult to be held than the direct survey (offline), it is suggested to use a larger sample and greater instrument to get a deeper insight in the study on cross company or even cross industry if possible by several adjustment.

CONCLUSION AND SUGGESTIONS

This research is studying about the impact of e-WOM on destination image, attitude toward destination and travel intention. The framework was coming from the study in the area of theory planned behavior. The results has shown that both direct and indirect mediated by destination image, attitude toward destination has a greater impact against the travel intention. The total effect also shows that e-WOM on attitude toward destination has a greater effect against the travel intention.

The main contribution of this research is that when empirically tested, e-WOM showed that social relationships and interactions of individuals in these platforms, which have emerged in instagram, influence travel intention to visit Batu City. It is also important to note that when the destination image has a lesser effects against travel intention, the online travel community need to enforce its information source against tourist destination knowledge to give a reviews, photo and video by involving Instagramers.

For Business in Tourism Industry such as online travel agent, hotels, and restaurant use social media Instagram to attract youth, women and netizen because in social media Instagram is dominated by them. Online travel agent, hotels and restaurant that have cheap price until medium price can sell their product and services by using Instagram, it is based on the most Instagram users have low income but the market size in Indonesia is very big and potential. By using social media Instagram the business practitioners can give a promotion by involving the customers to promote business by uploading their photos, give a caption, hash tag and tag location in order to attract the others customers.

Government can use Instagram as promotion media by involving youth women and netizen to promote a tourist destination. Government should give a support by making online community to share some tourist destination. Every activities that has a relation with tourism industry, Government should invite the instagramers to promote event management, a new tourist destination and give a price in order to Destination Image in a city or region can increase tourist domestic and foreign to visit.

For Academic, it can be added either variable and item about Theory Planned Behavior by using social media approach, not only Instagram but also social network sites such as You Tube and Facebook are the popular social media can spread of electronic word of mouth. The scope of this research just small, the researcher just make a research for Batu City, for future research must can add the wider area of sample by involving either different regional or countries as a comparison.

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DOI <https://doi.org/10.18551/rjoas.2017-01.10>

THE EFFECT OF EXPERIENTIAL MARKETING ON SATISFACTION AND ITS IMPACT ON CUSTOMER LOYALTY

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ABSTRACT

The increase of competitiveness among culinary business makes it become a prospect of business development. Meanwhile, recognizing Malang is the second largest city in East Java, which has many tourists both domestic and foreign, the density of activities became the cause of consumers in Malang could not have enough time to prepare food. Therefore, they tend to buy food from Rumah Makan or Traditional Restaurant. Based on those phenomena, it will be an opportunity for culinary business. Thus, it should have a competitive advantage. One proper way is to create a positively unforgettable experience for consumers. Creation of experience that can touch the feelings and emotions of consumers which make consumers feel happy, satisfy and will have a positive impact on loyalty. The purpose of this study is to analyze and explain the influence of Sense, Feel, Think, Act and Relate, the variable Experiential Marketing Customer Satisfaction, while also analyze and explain the effect of Customer Satisfaction to Customer Loyalty. The hypothesis in this study are among other variables of Experiential Marketing that includes Sense, Feel, Think, Act and Relate, have a significant influence on Customer Satisfaction and Customer Satisfaction significant influence on Customer Loyalty. This research is explanatory, using a quantitative approach with survey method. This research method to distribute questionnaires to 100 customers, analyzed using descriptive and inferential statistics such as path analysis (path analysis). The results of this study are all variables Experiential Marketing that includes Sense, Feel, Think, Act and Relate, which have a significant influence on Customer Satisfaction and prove that Customer Satisfaction has a significant influence on Customer Loyalty.

KEY WORDS

Experiential marketing, customer satisfaction, customer loyalty.

Business is an activities undertaken by the company for profits and values. Culinary business is the one of quite good business nowadays. Along with some changes in lifestyle patterns of consumers, this kind of business could compete on a competitive basis. The consumers nowadays are more prefer to buy fast food from restaurants or cafes because of their density activities and limited time to prepare their own meals. This is also happens to consumers in Malang. Consumers in Malang city is a very busy consumers with density activities due to Malang known as student city and tourism city. Most of consumers in Malang is domestic and foreign tourists or immigrants who settled long enough for study. This situation became an opportunity to open a business in the culinary field. The growth rate of culinary business in Malang tends to increase, although in 2009 and 2013 slightly decreased. Facing the competitive rivalry, businessmen need to have a competitive advantage. This competitive advantage is very important to attract more attention from consumers. Culinary businessmen frequently less attention on competitive advantage as way to improve and retain customers, thus negatively impacting the culinary business to be bankrupt.

Culinary business is vulnerable to the problem of the food taste consistency also to the problem of services provided. Culinary businessmen wants to make the customers satisfied and loyal to their business. Determining the level of customer satisfaction and loyalty to culinary business is quite difficult because only few customers that fully satisfied and loyal to the culinary business they visited. The customers in average has a tendency to try an interesting food and atmosphere of the room. Most of them are visiting the restaurant or

some culinary places not only for the needs of hunger but also as a place to gather and interact with family, friends and colleagues.

A method that the businessmen in this field should do for the competitive advantage is to instill a positive impression about the products, services, neighborhood atmosphere of the culinary business they have in costumers mind. The marketing focus now is more oriented to create a memorable experience for the customers so that could make a positive impression to the company, touch the customers feeling and emotions, this focus is called experiential marketing. This kind of marketing method could shift the traditional marketing focus that only has focus on the features and benefits.

Experiential marketing is a very effective to provide an information about a product or service. Marketers are more emphasising on product differentiation to differentiate their products with the competitor's products. Schmitt (1999) stated that experiential marketing is divided into several variables called strategic experiential modules (SEMs) that consist of sense, feel, think, act and relate. The application of experiential marketing requires media to distribute an experiential providers (ExPros) to customers that include of communication, visual/verbal identity, product presence, co-branding, spatial environments, websites and electronic media, people (Schmitt, 1999). This experiential marketing also has benefit in many situations like to increase the customer's loyalty.

The customers satisfaction is one of the main goals for business activities. Customer satisfaction, according to Oliver (1981) in Tjiptono (2005) an evaluation of inherent suprise or attached to the acquisition of products and/or services consumption experience. Wilkie (1990) in Tjiptono (2005) defines customer satisfaction as an emotional response to an evaluation of the experience of the consumption of a product or service.

Lovelock, Wirtz and Mussry (2011) states that the basis of loyalty lies in customer satisfaction, where the quality of service becomes the primary input. Highly satisfied customers tend to be loyal supporters to the company, purchases to a service provider, and spreads the positive news. Anderson, et al., 1994; Anderson, et al., 1997; Edvardsson, et al., (2000) in Tjiptono (2005) states that customers satisfaction could contribute on a number of crucial aspects, such as the creation of customer loyalty, enhance reputation of the company, reduce price elasticity, reduce cost of future transactions, and increase the efficiency and productivity of employees. Results of research conducted by Alireza, Ali and Aram (2011) about The Satisfaction of Customers has a direct determinan to customer loyalty. Satisfaction is an important thing but it does not take place on the condition of loyalty. In the other words we can have satisfied customers without loyalty, but too difficult or even impossible to have a loyal customer without the customer satisfaction (Mohsan et al. , 2011).

Research will be conducted using variables of Experiential Marketing that is Sense, Feel, Think, Act and Relate expressed by Schmitt (1999) and variable of customer loyalty also customer satisfaction. This study adopts from previous empirical research studies.

LITERATURE REVIEW

Experiential Marketing. Experiential marketing according to Schmitt (1990), "Experiences are private events that occur in response to some stimulation (e.g., as provided by marketing Efforts before and after purchase)". Experience is a special event that happens to someone in response to some types of stimuli. Experience is the result of observation and involvement in the events in real or mannered. Experiences involving the parts of human senses, feelings, rational and emotional minds also the body as well. So, experiential marketing is the product's ability to offer emotional experiences that could touch the customer's mind and heart.

Experiential marketing is widely used by enterprises to establish experiential connections (relationship experience) with the customer. Experiential marketing can be useful in many situations, including: to reverse the decline of the brand; in order to differentiate the product from competitors; to create the image and identity for a company; to boost innovation; persuade to try, make purchases and the most important is loyalty (Schmitt, 1999).

The main idea of experiential marketing is by creating variety of experiences for customers. According to Schmitt (1999), the type of the intended experience be that of strategic experiential modules (SEMs), namely sensory experiences (SENSE), affective experiences (FEEL), creative cognitive experiences (THINK), physical experience and lifestyle (ACT), and experience the result of the interaction of social and cultural (RELATE).

Senses (Five Senses). Sense of marketing as something that creates the experience to customers by providing the touch of the sense costumers have that include vision, hearing, touch, taste, and smell (Schmitt, 1999). The three strategic objectives that can be used to motivate a sense of marketing so that consumers can feel the excitement are:

1. Sense as a differentiator. Sense as a differentiator can be formed through product design, communication and point of sale by the new strategy. Differentiation is a great way to create sensory appeal.
2. Sense as a driving force. Sense motivate customers to buy and try products. Stimulation creates an optimal sense, it can provide a strong motivation.
3. Sense (senses) as a provider of values. Sense delivering value to customers and create a result of sensory appeal, so marketers must be able to understand it (Schmitt, 1999).

Feel. Feel on experiential marketing is closely related with affective experience. Feel marketing is a strategy and implementation which could impact on the company and brand through experience providers, in order to get succeed, marketing requires a clear understanding of how to create a feeling for the consumption experience (Schmitt, 1999).

Feel experiences can be exemplified, ranging from a light mood up with strong emotions. Consumption situation is very important to feel, although the communication feel before consumption can affect the feel. As marketers experience, it must know how to influence the feelings and provides a level of stimulation to the feelings to the appropriate level. If it is successful, it will be able to create a strong bond between the brand and the user.

Think. Think can stimulate someone's intellectual ability and creativity to create a cognitive experience and invites customers to think creatively. The purpose of the think to influence customers to think creatively and create awareness of the impact on the re-evaluation of the company and products.

Think engage consumers using convergent and divergent thought patterns. According to a psychologist J.P. Guilford as disclosed in Schmitt (1999), individual is routinely engage in two type, namely convergent and divergent thinking. Generally, convergent is narrow mental focus to converge on a solution, while divergen is expanding mental focus in various directions.

The key success of think is by stimulating the concentration and attention of the customers. Concentration is a situation of mind where people are very focused on something that is relevant to their goals and objectives. Attention is a state of mind where people really pay attention to the details and distinguish things from one another. Think can be said succeed if consumers have the attention and focus to a product or brand.

Act. Strategies act aims to create a customer experience associated with the body, behavior, lifestyle and experiences that occur as a result of interaction with the other people. Changes in lifestyle are often more motivated, inspire and spontaneity makes naturally influenced by the role of a model (eg, a movie star or a famous athlete).

Relate (Relationship). Relate marketing contains aspects of sense, feel, think, act marketing. However, a broader marketing relate, because it covers the existing environment outside of a person and personal feelings, so that adds a personal experience for themselves, others also the culture that exists outside environment. In essence, relate marketing aims to connect someone with something outside himself.

Customer Satisfaction. Customer satisfaction is one of the goals that are important to business and the key elements that determine the success of the implementation of the marketing concept. Customer satisfaction contributes to a number of crucial aspects, such as the creation of customer loyalty. The impact derived from the satisfaction or dissatisfaction of customers which crucial for businesses. Increased customer satisfaction potentially lead to

sales growth in the long term and short term, as well as market share as a result of repurchasing (Tjiptono, 2012).

According to research conducted Giese & Cote found similarities in terms of three main components: customer satisfaction is a response (emotional or cognitive); the response involves a specific focus (expectations, product, consumption experience and so on); the response occurs at a specific time (after consumption, after the selection of products / services, based on the accumulated experience, and others) (Tjiptono, 2012).

Customer Loyalty. Customer loyalty has an important role in a company, because keeping customers can improve financial performance and maintain the viability of the company. Although marketers already have a loyal customer segment considered, but competitive pressures are deliberately geared to changing customer loyalty, can not be ignored, because the brand will continue with the movement to be performed by the customer.

Griffin (2002) in Hurriyati (2010) states "Loyalty is defined as non-random purchase Expressed over time by some decision making unit." Based on that definition can be explained that more loyalty refers to a form of behavior of decision-making's unit to make purchases continuously for goods / services of a selected company.

Loyal customers is an important asset for the company, it can be seen from the characteristics. Griffin (2002) in Hurriyati (2010), states that loyal customers have the following characteristics:

Loyal customers is an important asset for the company, it can be seen from the characteristics. Griffin (2002) in Hurriyati (2010), states that loyal customers have the characteristics as below: makes regular repeat purchases; purchases across product and services lines; refers other product; demonstrates an immunity to the full of the competition.

METHODS OF RESEARCH

The study used a quantitative research methods since the purpose is to explain the correlation among variables Sense, Feel, Think, Act and Relate (Experiential Marketing) on Customer Satisfaction and Customer Loyalty.

This research can be categorized as a causality research. The method that is used to explain the causal relationships among variables is the survey method. Furthermore, this research aims to predict and to examine the influence of the variables. The method of data analysis in this research is descriptive data analysis, which has a goal to show the data image collected from the research locations. The analysis technique that is used is the path analysis with SPSS applications. The research framework is presented in Fig 1.

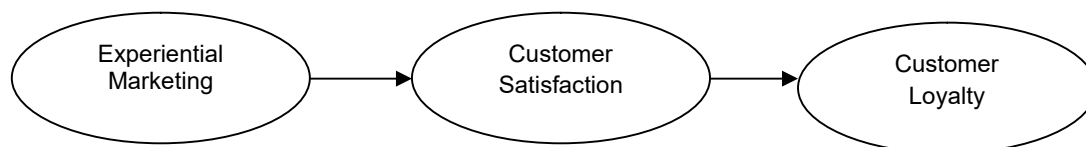


Figure 1 – Research Framework

Hypothesis:

- H₁: *Sense* had a significant influence on Customer Satisfaction;
- H₂: *Feel* had a significant influence on Customer Satisfaction;
- H₃: *Think* had a significant influence on Customer Satisfaction;
- H₄: *Act* had a significant influence on Customer Satisfaction;
- H₅: *Relate* had a significant influence on Customer Satisfaction;
- H₆: Customer Satisfaction had a significant influence on Customer Loyalty.

The location of this research at Traditional Restaurant in Malang. With a sample of 100 customers. This study used a questionnaire distributed to customers on restaurant.

Assumptions underlying the Path analysis is to use the test for normality and linearity test. Here are the results of normality test and linearity test:

Table 1 – The output of Normality Test

Variable	Significances	Alpha (5%)	Information
Residual Model 1	0,406	0,05	Normal
Residual Model 2	0,336	0,05	Normal

The normality assumption is based on the significance of the test Kolmogorov-Smirnov on model 1 of 0.406, and in model 2 at 0.336, from all of its value $> \alpha$ (0.05), it can be concluded that the residual data on model 1 and model 2 normal distribution (assuming normality met), Normality test results to the groups of the above data it can be seen that there is no violation of the assumptions of parametric tests, then the path analysis can be done.

Linearity test. Linearity test aims to test whether the relationship between the independent variables and the dependent variable is linear or not. The good model is a model where the relationship between the two variables is linear. The method used in the linearity test is to test curve estimates. Relations between the two variables is said to be linear if the significance value $< \alpha$ (5%) were used.

Table 2 – The Output of Linearity Test

Linearity	Significances	Information
X1 \rightarrow Y	0.000	Linear
X2 \rightarrow Y	0.000	Linear
X3 \rightarrow Y	0.000	Linear
X4 \rightarrow Y	0.000	Linear
X5 \rightarrow Y	0.000	Linear
Y \rightarrow Z	0.000	Linear

Information:

X1= Sense, X2= Feel, X3= Think, X4 = Act, X5 = Relate, Y= Customer satisfaction, Z= Customer Loyalty.

RESULTS AND DISCUSSION

The calculation of the path coefficient is processed using SPSS version 13.0 for Windows. Path analysis is used to analyze the patterns of relationships between variables in order to determine the effect of directly or indirectly, exogenous and endogenous.

The test result in substructures 1 (Table 3) shows that the all variable of Experiential Marketing has significance on Customer satisfaction.

Table 3 – Substructure output part 1: The effect of X1, X2, X3, X4 and X5 on Y1

The Effect	Path Coefficient	Significances	Information
Sense (X ₁) \rightarrow Customer Satisfaction (Y ₁)	0,200	0,037	Significant
Feel (X ₂) \rightarrow Customer Satisfaction (Y ₁)	0,222	0,031	Significant
Think (X ₃) \rightarrow Customer Satisfaction (Y ₁)	0,182	0,034	Significant
Act (X ₄) \rightarrow Customer Satisfaction (Y ₁)	0,211	0,016	Significant
Relate (X ₅) \rightarrow Customer Satisfaction (Y ₁)	0,180	0,028	Significant

The test result in substructures 2 (Table 4) shows that the path coefficient variable Customer Satisfaction (Y1) of 0.845 with a significance value of 0.000, then the variable Customer Satisfaction (Y1) has a significant influence on Customer Loyalty variable (Y2). The test results prove that the variable Customer Satisfaction (Y1) directly influence the variable Customer Loyalty (Y2).

Table 4 – Substructure output part 2: The effect of Y1 on Y2

The Effect	Path Coefficient	Significances	Information
Customer Satisfaction (Y ₁) \rightarrow Customer Loyalty (Y ₂)	0,845	0,000	Significant

The effect of Sense on Customers satisfaction. In accordance with the result of the study, sense has a significant effect on customer satisfaction. Table 3 showed the path

coefficient by 0,200. The result of this study reinforces previous research, such as the research of Lu *et al.*, (2008), Lin *et al.* (2009), Lin, Hsu *and* Tsai (2011), and Alkilani, Ling, *and* Abzakh (2013). They found that sense has a positive significant on customer satisfaction. Sense can be used as a differentiator, driving and value provider. One of them can be through visions, colors can create a striking impression to produce sensory stimuli on the customer so that will always be remembered.

The effect of Feel on Customers satisfaction. In accordance with the result of the study, feel has a significant effect on customer satisfaction. Table 3 showed the path coefficient by 0,222. The result of this study reinforces previous research, such as the research of Yang (2010) and Chen, Chen, Hsieh (2012). According to Schmitt (1999), the success of feel marketing requires a clear understanding of how to create feelings during consumption experiences. According to research conducted Giese & Cote in Tjiptono (2012) found similarities in terms of three main components, namely, customer satisfaction is a response (emotional or cognitive), the response regarding a particular focus (expectations, product, consumption experience). The respon occurs at a specific time (after consumption, after the selection of products / services, based on the accumulated experience, and others). Customers feel if the service provided to the friendly, it will make them feel happy and satisfied.

The effect of Think on Customers satisfaction. In accordance with the result of the study, think has a significant effect on customer satisfaction. Table 3 showed the path coefficient by 0,182. The result of this study reinforces previous research, such as the research of Lin *et al.* (2009), Lin, Hsu *and* Tsai (2011).

The effect of Act on Customers satisfaction. In accordance with the result of the study, act has a significant effect on customer satisfaction. Table 3 showed the path coefficient by 0,211. The result of this study reinforces previous research, such as the research of Shih, Yu, *and* Yen (2015). The traditional Restaurants in Malang provide a special appearance to customers who are not given by the other restaurant is a Tarian Topeng Malang. It is appropriate Tjiptono opinion (2005), one element of customer satisfaction is the promotion of loyalty programs, these programs provide a kind of special rewards such as discounts and vouchers to customers regularly to remain loyal to the products of the company.

The effect of Relate on Customers satisfaction. In accordance with the result of the study, relate has a significant effect on customer satisfaction. Table 3 showed the path coefficient by 0,211. The result of this study reinforces previous research, such as the research of Lin, Hsu *and* Tsai (2011). Many customers who visited at Traditional Restaurants because attracted by the concept of restaurant. The customer like the restaurant because that introduced Malang in the past. Customers will be satisfied to have a memorable experience and will be revisit.

The effect of Customers satisfaction on Customer Loyalty. In accordance with the result of the study, customer satisfaction has a significant effect on customer loyalty. Table 4 showed the path coefficient by 0,845. The result of this study reinforces previous research, such as the research of Lin *et al.* (2009), *and* Aram (2011), Mohsan *et al.* (2011). Customers will be satisfied with the services obtained, so they will often make repeat purchases. This is consistent with the statement expressed Tjiptono (2012) satisfaction will yield two benefits, namely customer loyalty and word of mouth (WOM).

CONCLUSION

From the results of the hypothesis which shows that there is significant influence between experiential marketing to customer satisfaction and customer loyalty. Ways in which to maintain customer satisfaction and loyalty with regard experience that will be earned by the customer. Memorable experience for the customer is one of the main factors in maintaining customer loyalty in a competitive business competition.

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DOI <https://doi.org/10.18551/rjoas.2017-01.11>

EXPANDING HEALTH TOURISM IN INDONESIA: PROSPECTIVE SHARIA SALONS AND SPAS

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ABSTRACT

Currently, health issues have grown rapidly into Health Tourism segment to strengthen Indonesia's tourism. Ironically, the proliferation of salon and spa business as well as other forms of health tourism business is considered to cause negative effects in the form of destructive cultural penetration of foreign tourists. This study aimed to analyze the prospects of sharia salons and spas in safeguarding the health tourism in Indonesia. Furthermore, we examine the mix variables of sharia marketing as a marketing stimulus to encourage Muslim tourists in making the decision to visit and re-visit as well as their interest in the sharia salons and spas. This explanatory study uses the paradigm of quantitative research involved 150 respondents of Muslim tourists and domestic visitors of sharia salons and spas in Malang, Indonesia. The results of this study indicate that stimulus of sharia marketing is needed to develop tourist visits, especially Muslim travelers in health tourism destination of sharia salons and spas.

KEY WORDS

Health tourism, Sharia salons and spas, Muslim tourists, Sharia marketing, Indonesia.

Thousands of years ago, people had to travel to distant places in order to heal themselves, so essentially a medical tourism is a phenomenon that has long existed. In its development, global competition has emerged in the health care industry. Countries that have advanced the tourism, such as Switzerland, Germany, France, UK, USA, Canada, Austria, Australia, Japan, China, Singapore, and even Malaysia have long organized forms of such health tourism for both domestic tourists and foreign tourists. This then led to the term of borderless patient for health tourists in developed countries and in developing countries. Wealthy patients from developing countries have long traveled to the developed countries for high-quality medical care. However, now many middle economic class patients from developed countries travel to developing countries to seek high quality medical care at affordable prices (Herrick, 2007).

Currently, health issues have grown rapidly into Health Tourism segment to strengthen tourism, not least for Indonesia, which has a lot of local knowledge in the field of health from the science of alternative medicine heritage. Health tourism activity generally refers to patients who travel for beauty, rehabilitation, care of themselves in their recreation. Health tourism emerged as a new form for the tourism industry which is diffusion between the needs of an individual to obtain health care and their wish to travel in the same time (Rollyson, 2010; Munro, 2012; Snyder *et al.*, 2013; Henema, 2014). The form of implementation of health tourism includes yoga, gym or fitness, dentistry, spiritual festivals, ayurveda, mud baths, cosmetic surgery, acupuncture and acupressure, and what has been popular in Indonesia is a salon and spa services business.

Tilaar (2011) state that the development of salon and spa in Indonesia and the world is growing rapidly. Factors causing the inner pressure or stress are increasingly high that many people, especially among metropolitan, require salon and spa as a means of treatment for relaxing therapy. Ironically, the development of health tourism in Indonesia also poses the threat of penetration of "wild west" (Macready, 2007; Cortez, 2008; Johnston *et al.*, 2010) brought by foreign tourists as foreign culture can lead to transformation of culture or even cultural amnesia, that will ultimately bring multiple effects on various sectors of public life and business industry.

Young (1973) suggests that tourism may give rise to an undesirable activity, such as prostitution, sex trafficking, and HIV and penetration of foreign culture that can have negative impacts for local communities. In public perception, spa and salon business is identical to the negative stigma (Narendran, 2011). This is evidenced by the emergence of 'plus-plus' salon and spa, erotic massage parlors, homosexual salon as well as prostitution under the guise of health and fitness business in Indonesia. Although it promotes itself as a spa and sauna with exclusive prices and services, in practice it is similar to prostitution and other hedonism.

The mindset of tourism businesses people tend to be oriented to economic advantages alone without strong commitment and awareness in maintaining cultural, social, and religious values; and this can be a threat to the nation and especially for the development of the tourism industry itself. On the other hand, Indonesia is a potential market of abundance domestic Muslim tourists. However, the limited variety of facilities and infrastructure of the health tourism and ethical fulfillment of sharia and affluence of 'plus-plus' spa and salon in Indonesia shows that the country is still weak in capturing the opportunities and potential of Muslim tourists even for domestic market needs.

On a variety of spa and salon areas in Indonesia, it is difficult to obtain standard service according to the value of sharia for Muslim women who keep the "*aurat*" according to the religious beliefs, for example in terms of a therapist of the same sex, no-pork raw materials, no eyebrow shaving or like-man hair, and so forth.

Recognizing the potential and opportunities of Muslim tourists, and keeping the noble values of the nation's culture as well as maintaining and increasing attraction for them, both domestic and foreign tourists, on health tourism in Indonesia, the Ministry of Tourism and Creative Economy has started to promote standardization of sharia spa and salon (Ministry of Tourism, 2015).

Sharia salons and spas is a model of spas and salons that offer beauty therapist and rooms based on gender, halal cosmetic materials as well as service, interior, equipment and other facilities that comply with Islamic law (Yemen *et al.*, 2012). Sharia salons and spas is expected to minimize the practice of adultery and other hedonism. Sharia salons and spas business continues to grow and is proven profitable and some has been using a franchise system. Until now, there are about less than a hundred sharia salons and spas in Indonesia. So far, the Majelis Ulama Indonesia (MUI) has not issued a special fatwa and sharia certification for the operation of sharia salons and spas, but many spas and salons are getting halal certification for its products.

Malang is a city in the province of East Java, Indonesia, which has a high potential to develop health tourism, especially with the support of domestic Muslim tourists. The high number of students, especially Muslim ones, poses potential for tourism in Malang. They need to be accommodated and facilitated for health and fitness that meet the values and ethics of sharia, one of which is through sharia spas and salons. There are several sharia salons and spas including RumahQu, YASNA Salon Muslimah, Moz5 Salon Muslimah, and Aliya Salon Spa Muslimah.

Furthermore, in the operation of sharia spa and salon, evaluation and assessment of the effectiveness of marketing and management variables is important to increase the number of users and encourage repeat visits, to increase the income of business, and to help develop the health tourism in Indonesia.

This study attempts to improve the health tourism segments through prospective sharia spas and salons in Malang, in encouraging domestic Muslim tourists. This study aimed to analyze the effect of implementation of sharia services marketing mix that has been applied to decision buying as well as revisit intention in sharia salons and spas.

Originality that this research offers is that it fills the gap of research on prospective sharia salons and spas in extending health tourism using a sharia marketing perspective that is still missing in Indonesia. Abroad, there are only a few researchers like Yemen *et al.* (2012) in Malaysia, conduct the same study. In Indonesia, previous research on sharia spas and salons is still in early stages of analyzing phenomena and behavior, in a study by Budiyanto (2015). While other researchers analyze the sharia salon spa business from various perspectives such as from the perspective of Islamic architecture in a study by

Kusjuniardi (2014), Trison (2015), and Indry (2014) as well as from the perspective of human resource management, for example in research by Sari (2013).

LITERATURE REVIEW

Health Tourism. According to Pendet (1994), there are several types of tourism already known, such as Health Tourism, i.e. one's journey with the aim to exchange the circumstances and the environment in one's everyday life for the sake physical and spiritual health.

Health tourism is a blend of Medical Tourism and Wellness Tourism. Wellness or Healthy Lifestyle Tourism provides improved and preventive health services, and puts more emphasis on relaxation and good look, like beauty, weight loss, and fitness services. Medical tourism provides conventional and traditional medical services such as cosmetic surgery, organ transplantation, chemotherapy, physiotherapy, massage, and acupuncture.

Sharia Marketing. Alom and Haque (2011) state that sharia marketing can be defined as a process and strategy (*hikmah*) to meet the need through the halal products and services (*tayyibat*) by mutual consent and welfare (*Falah*) of both parties of buyer and seller to achieve material and the spiritual wealth in the world and the hereafter.

Sharia Service Marketing Mix. Traditionally, marketing pillars are known as the 4Ps, which stands for Product, Price, Place, and Promotion. However, the three 'P', written especially for the service industry, namely People, Process, and Physical Evidence. Nowadays, the term is known as 7Ps marketing and is sometimes referred to as the services marketing mix (Lovelock, 2011) which consists of Product, Place, Price, Promotion, Process, Physical Evidence, and People.

Furthermore, the marketing concept of Islam could be significant if it is combined with modern marketing concept (Arham, 2010). In a marketing perspective of Islam, the results of study by Wilson (2012) developed Hashim and Hamzah (2014) added 7P marketing from the perspective of Islam by forming Sharia Services Marketing Mix (7P's Sharia Services Marketing Mix) with additional elements, namely Pragmatism, Pertinence, Palliation, Peer-support, Pedagogy, Persistence, and Patience.

Decision Buying. Decision buying according to Kotler and Armstrong (2001) can be interpreted as a decision taken by a prospective buyer regarding the certainty to buy a product or not. Decision Buying Model is developed by Kotler and Amrstrong (2001) which is supported by Kotler *et al.* (2002), Kotler and Keller (2006), and as well as becomes a dimension of decision for customers to using the services in this study, namely product choice, brand choice, dealer choice, purchase timing, and purchase amount.

Repurchase Intention. According to Schiffman and Kanuk (2008), purchases made by consumers consist of several types, namely purchase interest, purchase trial, repurchase, and repurchase interest. Some of the indicators used to measure interest in revisit are the ones in Repurchase Intention Model based on research by Hellier, Geursen, Carr, and Rickard (2003). The model is developed for this study, in which the indicators are repurchase intention at the same amount, repurchase intention by increasing the amount, and repurchase intention by increasing frequency or intensity.

The Effect of Sharia Services Marketing Mix and Decision Buying (Visiting). Kotler (2005) and supported by Kotler and Armstrong (2008) developed a model of consumer buying behavior indicating that marketing stimulus consisting of product, price, place, and promotion may affect the response of the buyers in the form of purchasing the product.

Empirically, the results of study by Azzadina and Huda (2012) support this theoretical opinion. Research conducted using fashion industry in Bandung, Indonesia with customers of fashion items as samples of the study reveal that there is a significant and positive effect of the marketing mix by management on purchasing decisions.

The Effect of Sharia Services Marketing Mix and Repurchase Intention. Assael (2002) argues that one of the factors influencing repurchase intention of consumers is the marketing stimulus. This, according to Kotler (2005) and Kotler and Armstrong (2008) consists of the marketing mix. Furthermore, Payne (2001) states that to increase repurchase interest, we

have to note the four key components of marketing i.e. the product, price, place, and promotion. This is in line with the results of research by Alaika (2014) conducted in the child clinic in Bekasi using patients' parents as research sample; the study found that marketing mix made by the management has brought significant and positive impact on the interest of elderly patients for retreatment.

These results are also supported by the results of research by Vahdati (2014) using the 390 customers of Ghaem Shahr Refah Bank in Teheran, Iran as respondents. The results of the study found that the marketing mix brings significant and positive impact on the interest of customers to continue to use the products of the bank.

RESEARCH METHODS

Sample and Data Collection. This explanatory research uses quantitative research paradigm.

Table 1 – Variables, Dimensions, and Indicators of the Study

No.	Variable	Dimension	Indicators
1	Sharia Services Marketing Mix (X1)	Pragmatism and Product	1. Selling products or services needed 2. Not selling products or services needed 3. Separating product or services based on quality
		Persistence and Promotion	1. Giving the right information 2. Education on the products or services 3. Not exaggerating the quality of the products or services
		Palliation and Price	1. Giving discount 2. Selling products or services at reasonable prices 3. Selling products or services based on sales volume
		Peer Support	1. Treating customers well 2. Showing good and ethical behavior to customers
		Pedagogy and Physical Environment	1. Having environment ensuring good name 2. Having environment ensuring good image
		Persistence and Process	1. Giving good first impression 2. Having a mutual agreement on the sale and purchase
		Patience and Place	1. Being transparent during transactions 2. Selling real products or services 3. Having the principle "first come first serve"
2	Decision Buying (Y1)	Product choice	1. Main advantages 2. Quality 3. Guarantee 4. Appearance 5. Features 6. Variations
		Brand choice	1. Good reputation 2. Well-known 3. Attribute
		Dealer choice	1. Ease of access 2. Affordable price 3. Complete stock 4. Number and types of agent 5. Products are widely available 6. Marketing facility 7. Promotion 8. Market information
		Purchase timing	1. Frequent purchase is done 2. Purchase is habitual 3. Purchase is repetitive
		Purchase amount	1. Purchase is in certain amount 2. Purchase is done to recommend other parties 3. Purchase is done to improve frequency
3	Repurchasing intention (Y2)		1. Interest to buy at the same amount 2. Interest to buy by increasing amount 3. Interest to buy by increasing intensity

The sample in this study was 150 domestic Muslim tourists visiting the sharia salons and spas in Malang, namely RumahQu, YASNA Salon Muslimah, Moz5 Salon Muslimah, and Aliya Salon Spa Muslimah. The data was collected for approximately 4 weeks from March 2016 until May 2016.

Furthermore, this study used a survey method using a questionnaire. This research was conducted by distributing questionnaires to domestic Muslim tourists as visitors the sharia salons and spas in Malang. Respondents were identified based on age, occupation, average personal income per month, information about the company, domicile, and the reason for visit. Inferential statistical analysis technique used in this study to test the hypothesis of the study was Multiple Regression with SPSS.

Measurement on the Variable. The independent variable in this study is Sharia Services Marketing Mix (X1), while the dependent variables in this study are Decision using (Y1) and Repurchasing intention (Y2) with dimensions and indicators as shown in Table 1.

RESULTS AND DISCUSSION

Results of Multiple Linear Regression Analysis. The results of multiple regression analysis of independent variables namely Sharia Services Marketing (X1) to the dependent variable of Decision using (Y1) and Repurchasing intention (Y2) can be seen in Table 2.

Table 2 – Results of Multiple Linear Regression Analysis X1 toward Y1 and Y2

Variable	Unstandardized Coefficients	t count	Sig.	Note
(Constant)	3.277			
X1	.183	3.032	0.042	Significant
Y1	.118	3.246	0.003	Significant
Y2	.102	3.051	0.001	Significant

R = 0.448
 R square = 0.326
 F count = 8.372
 Sig. F = 0.000
 A = 0.05

Source: Primary Data (processed).

Based on Table 2, the coefficient of determination (R^2) is equal to 0.326 which means that the model on the influence of variables can to explain the perceived value by 32.6%, while the rest is explained by other variables not included in this regression model. The dependent variable of decision buying (Y1) and repurchasing intention (Y2) has a value of F of 7.429 with a significance of F 0.000. Thus, it can be concluded that the independent variable of sharia services marketing simultaneously has a significant effect on decision buying (Y1) and repurchasing intention (Y2).

Hypothesis Testing. To test whether the independent variable individually has a significant effect on the dependent variables, t-test was used. Below is a table that shows the results of the t-test and t-table at significance level (α) of 5%.

Table 3 – The Results of Hypothesis Testing

No	Hypothesis	Value	Status
1.	Sharia services marketing (X1) significantly affect the decision to use sharia services (Y1)	Sig t = 0,003	H1 accepted
2.	Sharia services marketing (X1) significantly affect the intention to reuse sharia services (Y2)	Sig t = 0,001	H2 accepted

Source: primary data (processed).

From the hypothesis testing results, it is clear that the two hypotheses are accepted.

DISCUSSION OF RESULTS

Hypothesis testing results of this study indicate that the implementation of sharia services marketing affects decision buying and repurchase intention. A more detailed elaboration is as follows:

Sharia Services Marketing Mix Significantly Affect Decision Buying (Visiting). The results of this study indicate that sharia services marketing have a significant effect on customer decisions to use the services. The relationship between the two variables is positive, and the better the sharia services marketing, the higher the interest to use the services. The results showed that pragmatism and products, persistence and promotion, palliation and price, peer support, pedagogy and physical environment, persistence and process, patience and place as constituent of sharia services marketing support product choice, brand choice, dealer choice, purchase timing, and purchase amount as the constituents of decision buying. These results support the idea by Kotler (2005) and Kotler and Armstrong (2008) in a model of consumer purchase behavior and empirically, the results of this study support the research by Azzadina and Huda (2012).

Sharia Services Marketing Mix Significantly Affect Repurchase Intention. The results of this study indicate that Sharia Services Marketing have significant effect on revisiting (repurchasing) interest. The relationship between the two variables is positive, and the better the sharia services marketing, the higher the interest to reuse the services. The results showed that pragmatism and products, persistence and promotion, palliation and price, peer support, pedagogy and physical environment, persistence and process, patience and place as constituent of sharia services marketing support repurchase (revisiting) interest whose constituents are repurchase intention at the same amount, repurchase intention by increasing the amount, and repurchase intention by increasing frequency or intensity.

The results of this study support the idea by Assael (2002) finding the factors that influence repurchase intention of consumers, one of which is marketing stimulus, and Payne (2001) stating that in order to increase interest in the purchase, there are four key components of marketing, namely product, price, place, and promotion that must be met. In addition, the study also supports the results of study by Alaika (2014) and Vahdati (2014).

CONCLUSION

In general, sharia salons and spas can be an important stimulus and potential for health tourism in Indonesia. Sharia salons and spas can synergize with other health tourism products to improve the performance of health tourism. It should be underlined, based on the results of this study, the application of sharia services marketing support decision to use sharia services and repurchase interest. Therefore, the company should continue to pay attention to human resources, price, interior, composition of raw materials, services, and facilities, as to make them remain consistent with the values of Islamic law. If it can be constantly improved and pursued widely in sharia salons and spas then health tourism in Indonesia will increase massively due to the large number of new visits and revisits of tourists.

Moreover, based on the results of the research, generally domestic Muslim tourists subscribing to sharia salons and spas are young and productive, are not working, are school and college students, are not married, live in boarding house, have relatively limited amount of money, and want treatment for health reasons. Then, the company should implement a program of treatments relatively at affordable costs, to stimulate short-term purchases such as discounts or special packages, to increase the types of treatments for relaxation such as sauna, spa, massage, and aromatherapy, but retain Islamic guidance.

Respondents of this study are still limited to the domestic Muslim tourists visiting sharia salons and spas. Further research can dig on the perspective of foreign tourists. In addition, the research is only focusing on the prospective sharia salons and spas. Further research can use more health tourism objects such as yoga business, mud baths, cosmetic surgery, acupuncture and acupressure, and other health tourism.

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DOI <https://doi.org/10.18551/rjoas.2017-01.12>

THE EFFECT OF LEADERSHIP STYLE ON MOTIVATION AND EMPLOYEE PERFORMANCE: A STUDY ON EMPLOYEES OF PT. DIPO STAR FINANCE OF MAKASSAR BRANCH, SOUTH SULAWESI

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ABSTRACT

This study aims to empirically examine the effect of leadership style toward work motivation and employee performance. Leadership style on this present study focuses on transformational and transactional leadership style. Samples used in this study are 57 respondents who work at PT. Dipo Star Finance in Makassar Branch. The sampling technique used is the systematic random sampling and the sampling refers to the division of work. In this study, the results show that both leadership styles significantly influence work motivation and performance of employees; there are greater influence of transactional leadership style than transformational leadership style. Indirect effect through work motivation is smaller than the direct influence of leadership style and employee performance.

KEY WORDS

Transformational leadership style, transactional leadership style, work motivation, employee performance.

In the current era of economic competition, human resources is a very important factor, as every company is very dependent on it, which ultimately determines the achievement of the goals and objectives of the company. Excellent human resources will become a driver of activities of the organization, making the company excels the lines of business. The organization's activities will run well if it has good human resources and the vice versa.

Wagimo and Ancok (2005: 112) state that there are many studies on human resources to focus on the role of leadership in organizational factors. The definition of leadership may vary depending on the perception of the individual and phenomenon in society.

A person can be said to be a transformational leader when measured from their influence toward subordinates that is based more on trust and commitment than contractual agreements. Transformational leaders help followers see the importance of achieving the vision and mission of the group or organization exceeding the benefit of the followers toward the leaders, and thus they are expected to create a strong, positive influence on the motivation and achievement of the followers (Jung & Avolio, 1999:209). Basically, transactional and transformational leadership cannot be seen as the opposite approach in resolving all issues concerning leadership. Transformational leadership is built on transactional leadership. Bass (1990) states that all transactional leadership theory has always had a focus to attract followers or subordinates to achieve their best performance through a deal for benefits they will receive.

Changes should start from the top level or leader; this is because a leader is a role model within the organization. Transformational style proposed by Bass in Yukl (2010:305) that "Transformational leadership further improves motivation and performance of followers than transactional leadership does." In this leadership theory, according to Bass in Yukl (2010:305), "The followers feel the trust, admiration, loyalty, and respect for leaders and they are motivated to do more than what has been originally expected of them." When both of these theories are combined (transformational and transactional leadership), it is expected to give maximum impact to the followers or employees.

In addition to leadership by leaders, motivation also has an important role as motivation improves the performance of employees. The importance of motivation is disclosed by Hasibuan (2001:141) is that "motivation is a cause, distributes, and supports human behavior

so they work hard and enthusiastically to achieve optimal results.” Such motivation can stimulate employees to better mobilize energy and mind in realizing the company’s goals. If the need for it is met, then there will be satisfaction and smoothness to the improvement of employee performance.

According to Sedarmayanti (2001:50), performance is also translated as achievement or outcomes. According to (Ainsworth and Smith, (2007:4), “Performance is the end point of people, resources, and certain environmental, which is gathered together with the intention to produce certain things, whether tangible products or intangible services”.

Improved performance will be realized if the employees have the ability to complete the job or task that they are responsible respectively. Therefore, leaders are expected to give impetus or motivation for employees. The problem most often encountered by leaders of the organization is to find the best way to help employees have a sense of belonging for the existence and their responsibilities in the company. To address employee performance can be done by seeking the needs of employees. The needs and desires of these workers will be able to accelerate and to become the reason for employees to work as best as possible in order to achieve company’s goals. Motivation then is the right way to provide energy to drive the potential of employees, to create togetherness, and to find the desire of the employees working in the organization.

Based on the descriptions above, it can be seen that in order to achieve good performance and good motivation, it takes a combination of transformational and transactional leadership style.

LITERATURE REVIEW

According to Bass (1990:230), leaders change and motivate followers by raising the level of awareness of subordinates of the interest and value of the work assigned and how to achieve it, make subordinate to think and work beyond personal interests and focus on the interest of the group of organization or community, and change level of hierarchy by expanding the needs of subordinates. Robbins (2007:472) gives the definition of transformational leadership as a leader who inspires followers to go beyond their personal interests and capable of carrying a profound and extraordinary effect on the followers.

Based on the afore-mentioned explanation, we can conclude that transformational leadership style directly and indirectly change employees by expanding their needs. This leadership styles emphasizes the positive value of the work. According to Muchiri (2002:270), a transformational leader shows charisma, inspirational motivation, intellectual stimulation, and individualized consideration. With transformational leadership, followers feel the trust, admiration, loyalty, and respect for the leaders, and they are motivated to do more than what is expected on them.

Bass (Hasibuan, 2001) states transactional leadership and transformational leadership may be found in one leader because one can display a variation of transformational and transactional leadership at the same time. Problems in an organization may vary, so are subordinates, and therefore variations of both styles of leadership are expected to provide better results in the achievement of corporate goals.

Transactional and transformational leadership cannot always been seen as a different approach to resolve any problems within the organization. Transformational leadership is built on top of transactional leadership. Transformational leadership produces higher level of effort and performance of employees, beyond what would happen with transactional leadership; and it can be conclude that “Transformational leadership is proven by the very strong relationship with a low turnover, high productivity, and higher employee satisfaction” (Pranaya, 2008).

Locke *et al.* (1991) discloses transactional leadership is not the opposite of transformational leadership; the opponent of this leadership style is static leadership or *status quo*. Locke *et al.* (1991) also reveals various concepts of transactions that are applied in transactional leadership style. Locke *et al.* (1991) state that “rewards given to followers are short-term benefits and long-term”. This concept is similar to the concept proposed by

Kunhert and Lewis (1987). They state “there are two levels of transaction between the leader and his followers, the high level of transactions and the low level of transactions” and one of which is the form of interpersonal transaction relating to transactions between the leadership with subordinates.

Table 1 – Variables and Indicators of the research

Leadership Style <i>Aditya (2010) says, "Transformational leadership style makes employees within a company in a race to obtain the best results or targets beyond their best performance.". Transformational leadership style emphasizes appreciation of goals so people will have confidence that their actual performance will exceed their expected performance.</i>	Transformational Leadership Style (X1) <i>Muchiri (2002 :270)</i>	1. Charismatic	Leader as an example Trust toward leader Leader as a regulator
		2. Inspirational motivation	Career certainty Financial security Leader as an example
		3. Intellectual Simulation	Chance to improve Chance to share new ideas Chance for creative thinking
		4. Individualized consideration	Interesting tasks Leader facilitates self-development Bonus
	Transactional Leadership Style (X2) <i>Gary Yukl (2004: 148)</i>	1. Contingent Reward	Bonus Task explanation
		1. Active Exception Management	Monitoring employee development Intervention from leader
		1. Passive Exception Management	Setting standard and procedure Setting reward and punishment
Motivation	Work Motivation (Y1) <i>Winardi (2002:78)</i>	1. Existence Needs	Adequate incentives Feeling safe from being fired
		2. Relatedness Needs	Communication with leader Communication with colleagues
		3. Growth Needs	Chance to improve career Challenging tasks
Performance	Employee Performance (Y2) <i>Bernaddin and Russel (1993:383)</i>	1. Quality of Work	Suitability on work outcome Perfect work outcome
		2. Quantity of Work	Sales exceeding target Meeting the target
		3. Punctuality	Punctuality Work completed after demand
		4. Ability to Work Independently	Employees follow instructions Employees can work without supervision
		5. Ability to Work Together	Able to develop good relationship with leader Able to develop good relationship with colleagues

According to Nawawi (2005: 352) from the point of psychological theory, motivation can be divided into two categories, namely the content theory and process theory. The content theory of motivation includes the theory of Maslow's needs, the ERG theory, the two-factor theory of Herzberg, and the achievement theory. Alderfer Claytorn from Yale University develops ERG theory. ERG stands for Existence, Relatedness, and Growth. Alderfer in Winardi (2002: 78) argues that Alderfer is not satisfied with the need theory of Maslow, then he develops an alternative about human needs.

The three needs by Alderfer in Winardi (2002:79) are as follows:

- The need for the existence (Existence Needs = E) is the requirement that covers all the desires belonging to the physiological and material needs.
- The need to belong to a group (Relatedness Needs = R) is the need to have a harmonious relationship with other parties or colleagues and satisfaction which is achieved due to a sense of belonging and a feeling of safety.
- The needs for growth (Growth Needs = G) is the need to develop into a human being and to take advantage of the entire individual's ability to achieve their full potential.

From the above opinion, it can be concluded that although human needs looks like a ladder as described by Maslow, however, according to Alderfe, it is not persistent, meaning that if the above requirements are already fulfilled does not mean the needs below will not be filled again.

Performance or achievements of employees are affected by many factors, which in turn is used as the basis for determining the policy of the company in order to increase and improve employee performance.

Employee assessment is a systematic evaluation of the work of employee potential that can be developed further. Assessment is the process of determination of value, quality, or the status of some objects, people or something. According to Handoko (2001:135), the performance evaluation is a process in which organizations evaluate or assess the performance of the employees.

Bernaddin and Russel (1993:383) suggest six key performance criteria that can be used to assess an employee, i.e. quality, quantity, timeliness, cost effectiveness, independence, and cooperation.

Any leader who wants to promote and enhance the company better must own good leadership style. An organization having intelligent employees and rapidly changing dynamics obviously needs transformational leadership style as capital for every leader and manager in the company.

METHODS OF RESEARCH

In accordance research objectives, this case study is explanations (explanatory research), According to Churchill (2005:29), explanatory research is a design with more emphasis on gathering ideas and inputs, and is especially useful for solving a widespread problem by making narrower and more precise sub-problems. The main emphasis of explanatory research is on the discovery of new ideas in testing new hypotheses that have been formulated to later be verifiable.

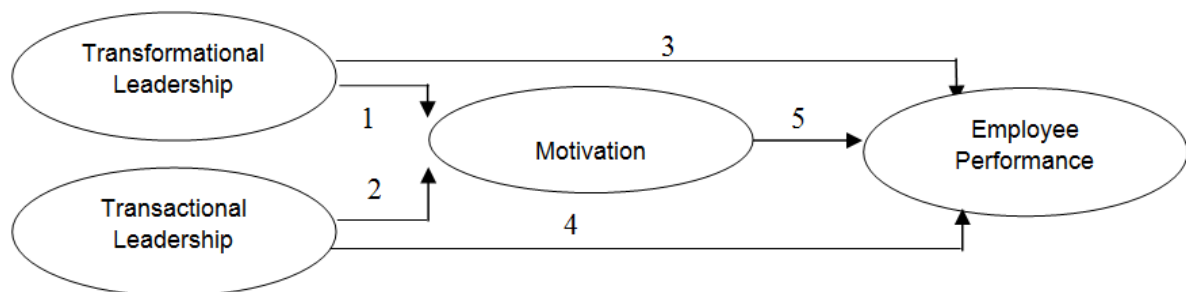


Figure 1 – Conceptual Model of the Research

The study was conducted at PT. Dipo Star Finance (DSF) Makassar Branch South Sulawesi. The company is engaged in Leasing and Finance, a subsidiary of Mitsubishi Corporation. DSF Makassar Branch is located in JL. Pengayoman 15 Makassar, South Sulawesi. The reason for choosing DSF as a research site is because DSF has advanced technology and high intelligent employees, so a transformational and transactional leadership style is needed in order to provide motivation to the improvement of employees performance.

The population in this study was the employees of DSF. DSF Makassar Branch has six divisions, i.e. Treasury, Financial, Cashiers, Administration, Marketing, and Collection, with a total population of 126 employees.

This study used systematic random sampling to determine the sample. According to Sugiyono (2010:75), systematic random sampling is sampling involves a systematic order of rules in certain populations. Probability of sampling is not the same regardless of the similarity frequency of each member of the population. To determine the sample size used in

this study, Slovin Formula with a tolerance of 10% was used, so the number of sample used in this study was 57 respondents.

Data collection is a systematic and standard procedure to obtain the necessary data. The data was collected through questionnaires. The items on the questionnaire were closed, and respondents were provided five alternatives of answers.

Table 2 – The Relationship of Variables

Effect	Path Coefficient	t-count	p-value	R ²
X1→Y1	0.326	2.201	0.032	24.4%
X2→Y1	0.492	3.322	0.002	36.8%
Total				61.2%
X1→Y2	0.276	2.154	0.036	21.8%
X2→Y2	0.297	2.204	0.032	23.5%
Y1→Y2	0.362	3.208	0.002	28.6%
Total				73.9%

Source: Data processed (2015).

Note: X1 = Transformational Leadership, X2 = Transactional Leadership, Y1 = Motivation, Y2 = Performance.

RESULTS AND DISCUSSION

The coefficient of determination explains how much the model explains the path formed in explaining the data used in the study. The determination coefficient value ranges from 0.0% to 100%, where the higher the coefficient of determination, the better the model in explaining the data used.

$$R_m^2 = 1 - (1 - 0.612) \times (1 - 0.739) = 0.899$$

Total determination coefficient obtained based on the calculation model of the path is 0.899 that showed that the model could explain 89.9% of the data used in the study. Hypothesis one (H1) tested whether there was the effect transformational leadership on employee motivation.

Table 3 – The Effect of Transformational Leadership on Employee Motivation

Effect	Path Coefficient	Standard Error	t-count	p-value
X1→Y1	0.326	0.148	2.201	0.032

Note: X1 = Transformational Leadership, X2 = Transactional Leadership, Y1 = Motivation.

The path coefficient ($\beta = 0.326$) shows that a good transformational leadership will significantly improve employee motivation, and the vice versa - unfavorable transformational leadership will significantly lower employee motivation.

Table 4 – The Effect of Transactional Leadership on Employee Motivation

Effect	Path Coefficient	Standard Error	t-count	p-value
X2→Y1	0.492	0.121	3.322	0.002

Note: X1 = Transformational Leadership, Y1 = Motivation. Source: Data processed (2015).

The path coefficient ($\beta = 0.492$) shows that a good transactional leadership will significantly improve employee motivation, and the vice versa—unfavorable transactional leadership will significantly lower employee motivation.

Table 5 – The Effect of Transformational Leadership on Employee Performance

Effect	Path Coefficient	Standard Error	t-count	p-value
X1→Y2	0.276	0.059	2.154	0.036

Note: X1 = Transformational Leadership, Y2 = Performance. Source: Data processed (2015).

The path coefficient ($\beta = 0.276$) shows that a good transformational leadership will significantly improve employee performance, and the vice versa - unfavorable transformational leadership will significantly lower employee performance.

Table 6 – The Effect of Transactional Leadership on Employee Performance

Effect	Path Coefficient	Standard Error	t-count	p-value
X2→Y2	0.297	0.051	2.204	0.032

The path coefficient ($\beta = 0.297$) shows that a good transactional leadership will significantly improve employee performance, and the vice versa - unfavorable transactional leadership will significantly lower employee performance.

Table 7 – The Effect of Motivation on Performance

Effect	Path Coefficient	Standard Error	t-count	p-value
Y1→Y2	0.362	0.052	3.208	0.002

The path coefficient ($\beta = 0.3.62$) shows that good motivation will significantly improve employee performance, and the vice versa—bad motivation will significantly lower employee performance.

Table 8 – The Indirect Effect of Transformational Leadership on Performance through Motivation

Effect	Path Coefficient	Standard Error	t-count	p-value
X1→Y1→Y2	0.118	0.057	2.081	0.038

The path coefficient ($\beta = 0.118$) shows that a good transformational leadership will significantly improve employee performance in accordance with the increase in motivation, and the vice versa - unfavorable transformational leadership will significantly lower employee performance in accordance with the decrease in motivation.

Table 9 – The Indirect Effect of Transactional Leadership on Performance through Motivation

Effect	Path Coefficient	Standard Error	t-count	p-value
X2→Y1→Y2	0.178	0.051	3.484	0.001

The path coefficient ($\beta = 0.276$) shows that a good transactional leadership will significantly improve employee performance in accordance with the increase in motivation, and the vice versa—unfavorable transactional leadership will significantly lower employee performance in accordance with the decrease in motivation.

The first hypothesis stating that transformational leadership has a significant effect on work motivation is accepted. The test results show there is a positive and significant effect of transformational leadership on employee motivation. It can be seen from the t-count value (2.201) which is greater than t-table (1.960) and p-value (0.032). This is consistent with the theory (Jung & Avolio, 1999: 209) that trust, admiration, loyalty, and respect from followers to leaders is expected to create a strong, positive influence on the motivation and achievement of followers.

The second hypothesis stating that transactional leadership has a significant effect on motivation is accepted. The test results show there is a positive and significant of transactional leadership on employee motivation. It can be seen from the t-count value (3.322) greater than t-table (1960) and the p-value (0.002) which is smaller than alpha value (0.050).

The third hypothesis stating that transformational leadership has a significant effect on performance is accepted. The test results show there is a positive and significant impact of transformational leadership on performance. It can be seen from the t-count value (2.204) which is greater than t-table (1.960) and the p-value (0.032) which smaller than alpha value (0.050). The path coefficients ($\beta = 0.297$) indicates that a good transformational leadership

will significantly improve the performance of employees, and the vice versa, unfavorable transformational leadership will significantly decrease the performance of employees.

The third hypothesis stating that transactional leadership has a significant effect on performance is accepted. The test results show there is a positive and significant impact of transactional leadership on performance. It can be seen from the t-count value (2.204) which is greater than t-table (1.960) and the p-value (0.032) which smaller than alpha value (0.050). The path coefficients ($\beta = 0.297$) indicates that a good transactional leadership will significantly improve the performance of employees, and the vice versa, unfavorable transactional leadership will significantly decrease the performance of employees.

The fifth hypothesis stating that work motivation has a significant effect on the performance of employees of PT. Dipo Star Finance Makassar Branch is accepted. The test results show there is a positive and significant impact of work motivation on performance. It can be seen from the t-count value (3.208) which is greater than t-table (1.960) and the p-value (0.002) which smaller than alpha value (0.050). The path coefficients ($\beta = 0.362$) shows that high motivation will significantly improve the performance of employees, and the vice versa, low motivation will significantly decrease the performance of employees.

This study contradicts the research done by Munawaroh (2011), which examines a Catholic high school in Malang, East Java. In the study, transactional leadership styles have a negative response. This occurs, as PT. Dipo Star Finance is a profit-based company in which reward and punishment will be a trigger for employees to improve performance.

CONCLUSION

The hypothesis in this study showed a significant and positive response. We can conclude that both transformational and transactional leadership style directly affects the performance of employees of PT. Dipo Star Finance. Transactional leadership style brings a good effect on performance, which is different from the study that examined an educational institution in which transactional leadership style has a negative response. For profit-based organizations, transactional leadership style is suitable to be applied by the upper-level managers.

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DOI <https://doi.org/10.18551/rjoas.2017-01.13>

INCOME DISPARITY AMONG HIGH-RISK JOB WORKERS OF ACROSS-CITIES ACROSS-PROVINCES AUTOBUS DRIVERS IN SOUTH SUMATERA, INDONESIA

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ABSTRACT

This study analysed the income disparity among the high-risk job of inter-city inter-province bus drivers in South Sumatera. The high number of road accident showed that inter-city inter-province autobus drivers' job is a high-risk job. High-risk jobs should be compensated with high salary. In this study, primary and secondary data were analyzed. Saturated sampling technique was used involving 71 intra-Sumatera bus drivers and 125 Sumatera-Java bus drivers to participate in this study. The result of analysis of Blinder-Oaxaca decomposition that there is income disparity among the bus drivers which is caused by the three endowments that were facilities, environment, and compensation. There were two factors that divides the income disparity into two categories; value of factors causing the disparity at 38.993 and unexplainable factors at 2.728. The total of the income disparity was -41.159.

KEY WORDS

Income disparity, across-cities across-provinces (AKAP), Blinder-Oaxaca.

Risky job is a relatively least wanted jobs since it is less interesting and its characteristics cause income disparities. Safe jobs are jobs that provide high social status, flexible work durations, indoor, and is located in comfortable and safe environment which is less risky. On the other hand, risky jobs are the ones with shabby work environment, monotonous tasks, low social status, and located in unsafe places with high risks (Nurlina, 2012).

Adam Smith stated that risky job workers should be compensated with higher salary than others. The high salary is able to increase workers' interests which also causes income disparities at the same time.

There are some jobs that are categorized as risky jobs such as mining workers, construction workers, chemical factory workers, fire fighters, truck drivers, public transportation drivers, and so on. Across-cities across-provinces bus drivers (AKAP) are also workers of risky jobs.

This study aimed at understanding the influence of human capital, job risks, and the compensation system of workers' income as well as the income disparities among the inter-city inter-province autobus drivers of Java-Sumatera route.

LITERATURE REVIEW

The Theory of Hedonic Commission. Higher salary should be given as the compensation to the unfavourable job workers. Besides being compensated for the unfavourable work conditions that they are working in, they also need to be compensated for their risky jobs that may trigger fatal risks, injuries and illness. There are some jobs that do not require workers to have high skills but the jobs are unsafe and risky. Companies pay higher salary for workers working in this unfavourable condition.

Compensation in the form of income disparity is an important social necessity which provides incentives for workers who are willing to do the unsafe jobs. Secondly, it is a reward for them who are doing unsafe jobs compared to other workers of safe jobs.

One of theoretical approaches that can be used to analyze factors that cause income disparity in marketplace is the hedonic theory proposed by Jeremy Bentham. This theory was

the result of hedonic thought that hypothesized that a person will act in a certain way to maximize happiness (from the income) and to avoid risks such as the risks from working in unsafe environment (Mc Connel, et al, 1999: 226).

Hedonism refers to the behavior of a person to work for happiness. In this case, workers are making the most of their utility to achieve happiness. The level of income reflects the risk level of a job. If a job has high injury risk, then the income received by the workers is higher. The high salary is given as the compensation of the high risks that they have to bear and to maintain workers' constant utility in doing the job. Thus, there has to be compensation for every risk in a job in order to be able to maintain certain level of workers' utility.

Income disparity is implemented as an attempt to interest workers to work in such unfavourable conditions with high risks. In another words, the higher the risk of a job, the higher the compensation should be paid by a company (Kaufman and Hotchkiss, 2005: 397).

It is assumed that all workers have already given complete information regarding to risks of the job and they have understood that they are working on unsafe and risky jobs. This is quite important since there are still more undetected risks of the job in the future. From the explanation, it can be understood that workers' utility does not only rely on the level of income, but it also is determined by the risks of the job. Thus, the formula for utility is $Utility = f(w, risks)$.

It is assumed that when a worker choses job with higher salary, then the marginal utility is positive. On the other way around, jobs with high risks creates negative marginal utility. However, when a worker enjoys working the risky job, then their marginal utility is positive. The marginal utility of the job risk is the change of the utility as the impact of the accident probability within an assumed constant income. Marginal utility of income is the change of utility level as the result of the increased income with assumed constant risks.

RESEARCH METHODS

Types and Data Source. Primary and secondary data were collected and analyzed in this study. The primary data were collected from the direct interviews with the drivers using interview guides and questionnaire distribution. Whislt, the secondary data were obtained from the data of police, *KNKT*, and other parties and other documents related to the across-cities across-provinces bus drivers whose routes have been registered to the data of the Ministry of Transportaion, Communication and Informatics, South Sumatera Province.

Population and Sample. The population of this study are 196 inter-city inter-province bus drivers who worked for inter-city inter-province bus companies. The sampling was done using saturated sampling technique which involved all the population to be taken as the sample which was divided into two categories; 71 drivers of Sumatera route and 125 drivers of Java route.

Data Collection Technique. The data of this study were collected through interviews and from the result of questionnaire distribution. Interviews were conducted using interview guide that consists of questions related to the intended data in this study to achieve the research objectives. Questionnaires that consisted of a series of questions were distributed to all of the inter-city inter-province bus drivers.

Operational Definition and Variable Measurement. Definition of operational variables is the specific definition of the measurement criteria or measurement technique that is created by determining the empirical indicators of a concept (Simamora, 2004). In this study, variables that were measured and analyzed are:

a. Drivers' income (Y) is any financial reward received by drivers for their work or service to the company within a month. The ratio scale is used to measure this variable.

b. Human capital workers are explained by driving skill and driving experience of the drivers. Driving skill (X_1) is the skill of a driver in controlling the ordinal skill measurement of the driver. (X_2) is the duration of a driver working as inter-city inter-province bus driver. Nominal scale is used to measure this variable.

c. Job risk refers to the threats to the health and safety of the workers in performing the job as bus drivers. In this study, the concept of job risk is explained by several variables:

- Work durations (X_3) is the duration of a driver in driving a bus started from a starting point to the destined point. Nominal scale is used to measure this variable.

- The distance (X_4) is the length of the distance that should be travelled by the driver from the starting point to the finish point. Nominal scale is used to measure this variable.

- Quality of the quality of the vehicle (X_5) is the condition of the bus that is used to carry passengers from the starting point to the destination. Ordinal scale is used to measure this variable.

- Environment (X_6) is the place or surrounding where the drivers do the jobs or the route that should be taken including the condition of the road, climate or weather, and the safety or threats that might be threatening for the drivers in doing their job. Ordinal scale is used to measure this variable.

d. Compensation system is the real form of compensation that is received by the drivers for their work that is explained by this variable.

- Compensation (X_7) is the way a company pays the inter-city inter-province bus drivers' service done for the company. Ordinal scale is used to measure this variable.

e. (AKAP) Inter-city inter-province transportation is land transportations that carry passengers across cities and across provinces.

The measurement of the value of the variables on the questionnaires items in this study was done using Likert scale. Likert scale was used to measure the response of the subjects on the four points that ranges from 1 to 4 (1. Totally disagree, 2. Disagree, 3. Agree, 4. Totally agree).

Data Analysis Technique. To analyze the data of this study, qualitative and quantitative approaches were administered. Cross-tabulation, double linear regression using SPSS 19 and Oaxaca and Blinder decomposition were used to analyze the data. In order to find out the variables that influence the income of the inter-city inter-province bus drivers in Sumatera and Java, hypothesis testing was administered to hypothesis 1 and hypothesis 2 using these following equations:

$$Y^S = a_0^S + a_1^S X_1 + a_2^S X_2 + a_3^S X_3 + a_4^S X_4 + a_5^S X_5 + a_6^S X_6 + a_7^S X_7 + e^S \quad (1)$$

$$Y^J = a_0^J + a_1^J X_1 + a_2^J X_2 + a_3^J X_3 + a_4^J X_4 + a_5^J X_5 + a_6^J X_6 + a_7^J X_7 + e^J \quad (2)$$

Notes:

Y^S = Drivers' income of Sumatera route;

Y^J = Drivers' income of Java route;

a_0^S, a_0^J = Constanta;

a_i^S, a_i^J = Regression coefficient;

X_1 = Skill;

X_2 = Experience;

X_3 = Work duration;

X_4 = Distance;

X_5 = Quality of the vehicle;

X_6 = Environment;

X_7 = Compensation;

e^S = Standard of error.

To analyze the income disparity, Blinder-Oaxaca decomposition (1973) was used. Theoretically, Blinder-Oaxaca decomposition is divided into two types; disparity that is caused by variety of endowment and disparity which is caused by unexplainable factors. The drivers' income disparity of Sumatera route and Java route is formulated using these following equations:

$$Y^S = a_0^S + \sum_i^S a_i^S X_i^S + \epsilon^S \quad (3)$$

$$Y^J = a_0^J + \sum_i^J a_i^J X_i^J + \epsilon^J \quad (4),$$

in which S is the drivers' income of Sumatera route and J is the drivers' income of Java route. Blinder (1973) showed that the average gap of the income logarithm can be decomposed:

$$\bar{Y}^S - \bar{Y}^J = [a_0^S - a_0^J] \sum_i^n a_i^S [\bar{X}_i^S - \bar{X}_i^J] + \sum_i^n \bar{X}_i^J (a_0^S - a_0^J) \quad (5)$$

The line (bar) above the variable shows the average gap of income logarithm that can be decomposed as follows:

$$\text{Raw differential (R)} = a_0^S + \sum_i^n a_i^S \bar{X}_i^S - (a_0^J + \sum_i^n a_i^J \bar{X}_i^J) = E + C + U = \bar{Y}^S - \bar{Y}^J \quad (6)$$

E differential portion caused by *endowment* differences:

$$E = a_0^S (\bar{X}_i^S - \bar{X}_i^J) \quad (7)$$

C = differential portion caused by different coefficient:

$$C = \bar{X}_i^J (a_0^S - a_0^J) \quad (8)$$

U Unexplainable differential portion:

$$U = (a_0^S - a_0^J) \quad (9)$$

$$D = C + U \quad (10)$$

$$\text{Differential percentage} = D/R \quad (11),$$

where: \bar{Y}^S = Drivers' income of Sumatera route; \bar{Y}^J = Drivers' income of Java route.

DATA ANALYSIS

Instrument Testing. The data of this study were in the form of primary and secondary data. In social research context, the validity and the reliability of the data relied on the instrument and measurement system that were used in the study. If the instruments that are used in a study was invalid or unreliable, the result of the study would not be able to reflect the truth in the field. Based on the standard procedure of constructing research instrument, before being used as the instrument in the research, classic assumption test has been administered to the instrument. In this study, there were three tests administered to check the validity of the instruments that were normal test, heterogeneity test and multi co-linearity test.

The Effect of Human Capital, Job Risk, and Compensation System toward the Income of Inter-Cities Inter Provinces Bus Drivers for Sumatera Route. Working as inter-cities inter provinces bus driver deals a lot with passengers' comfort, security and safety. This research spots on human capital as the person who drives the across-cities across-provinces bus. The risks that can be triggered by a job determine the riskiness level of a job. The compensation system is the form of compensation given to the across-cities across-provinces bus drivers which is drivers' income. The following table shows the model of human capital, job risk and compensation system to the across-cities across-provinces bus drivers' income for Sumatera route.

Based on the result of the estimated model, it can be seen that the standard of coefficient (*Beta*) work duration variable (-0.596) had a high negative value which means the variable of work duration had negatively bigger or negative dominant influence to the drivers' income. It implies that the longer a driver driving the bus, the higher the salary that should be given. Yet, the result of the estimated model shows that the longer the driving duration, the

lesser the income earned by the driver. In this case, compensation is given based on the salary system which adds up the incentive which was called *Uang Dinas Jalan* of around 10% - 15% of the total sold ticket for a certain route. If the distance is short but it requires longer time to travel, then it would not be beneficial seen from the time efficiency and other operational expenses. On the other way around, then the distance is far but it can be reached within short time, it gives some benefits in the form of extra income for the drivers.

Table 1 – Estimated Model of Human Capital, Job Risk, and Compensation System toward the Income of Inter-Cities Inter Provinces Bus Drivers for Sumatera Route

Variable	B	SE	Beta	T	Sig
C	-0,912	0,647	-	-1,409	0,164
Skills	0,027	0,058	0,056	0,476	0,636
Experience	0,411	0,184	0,291	2,230	0,029
Work duration	-1,560	0,388	-0,586	-4,019	0,000
Distance	0,001	0,027	0,006	0,055	0,957
Quality of the vehicle	1,100	0,303	0,555	3,626	0,001
Environment	0,354	0,107	0,326	3,300	0,002
Compensation	-0,202	0,095	-0,216	-2,131	0,037
R = 0,771					
R square = 0,594					
Adj. R square = 0,549					
SE Estimation= 0,214					
F = 13,150 (0,000)					

Dependent variable: Income.

Source: Primary data interpretation (2016).

The result of the estimated model was then transformed into the equations of across-cities across-provinces bus drivers of Sumatera route as follows:

$$Y^s = a_0^s + a_1^s X_1 + a_2^s X_2 + a_3^s X_3 + a_4^s X_4 + a_5^s X_5 + a_6^s X_6 + a_7^s X_7 + e^s$$

$$Y^s = -0,912 + 0,027 X_1 + 0,411 X_2 - 1,560 X_3 + 0,001 X_4 + 1,100 X_5 + 0,354 X_6 - 0,202 X_7$$

From the result of the estimated model, the value $R = 0.711$. This coefficient shows the strength of the correlation between the independent variables toward the dependent variables. It shows that there is a strong correlation among the skill, experience, work duration, distance, quality of the vehicle, environment and the compensation altogether toward the variable of income. Meanwhile the R^2 (*R Square*) was found at 0.594 or 59.4%. This value shows that skills, experience, work duration, distance, quality of the vehicle, environment and compensation variables simultaneously influence the income at 59.4% and the other 40.6% is the contribution of other variables which are not discussed in this study.

F test was administered to see if the independent variables simultaneously give significant influence to the dependent variable, or to see whether or not the regression model can be used to predict the dependent variable. The skill, experience, work duration, distance, quality of the vehicle, environment and the compensation variables had simultaneous influence toward the income at 13.15. From the result of the analysis F_{value} is 13.15 (sig 0.000) and F_{table} of 2.159, thus the $F_{value} > F_{table}$. It shows that skill, experience, work duration, distance, quality of the vehicle, environment and the compensation have simultaneous and significant influence to the drivers' income of Sumatera route.

The result of the estimated model showed t_{value} of every variable as follows; Skill (0.476), Experience (2.230), Work duration (-4.019), Distance (0.055), Quality of the vehicle (3.625), Environment (3.300) dan Compensation (-2.131). The value of t_{table} is 1.999, thus the value of $t_{value} > t_{table}$ which means that there is partial significant influence of every independent variable toward the income. Therefore, it can be concluded that if skill, work duration, distance and compensation show smaller value than t_{table} , it means that partially, each of the skill, work duration, distance, and compensation do not influence the income of across-cities across-provinces bus drivers of Sumatera route.

The Effect of Human Capital, Job Risk, and Compensation System toward the Income of Inter-Cities Inter Provinces Bus Drivers for Java Route. This following table shows the estimated model of human capital, job risk and compensation system toward across-cities across-provinces bus drivers' income for Java route.

Table 2 – Estimated Model of Human Capital, Job Risk, and Compensation System toward the Income of Inter-Cities Inter Provinces Bus Drivers for Java Route

Variabel	B	SE	Beta	T	Sig
C	1, 816	0, 991	-	1, 832	0, 069
Skills	0, 388	0, 180	0, 489	2, 152	0, 033
Experience	0, 517	0, 114	0, 461	4, 548	0, 000
Work duration	-1, 934	1, 967	-0, 097	-0, 983	0, 327
Distance	1, 171	0, 357	0, 456	3, 275	0, 001
Quality of the vehicle	-0, 485	0, 197	-0, 609	-2, 466	0, 015
Environment	-0, 199	0, 108	-0, 177	-1, 846	0, 067
Compensation	-0, 236	0, 072	-0, 268	-3, 271	0, 001
R = 0, 720					
R square = 0, 518					
Adj. R square = 0, 489					
SE Estimation= 0, 309					
F = 17, 959 (0, 000)					

Dependent variable: Income.

Source: Primary data interpretation (2016).

The result of the estimated model was then transformed into the equations of across-cities across-provinces bus drivers of Sumatera route as follow:

$$Y^j = a_0^j + a_1^j X_1 + a_2^j X_2 + a_3^j X_3 + a_4^j X_4 + a_5^j X_5 + a_6^j X_6 + a_7^j X_7 + e^j$$

$$Y^j = 1, 816 + 0, 388 X_1 + 0, 517 X_2 - 1, 934 X_3 + 1, 171 X_4 - 0, 485 X_5 - 0, 199 X_6 - 0, 236 X_7$$

The result of the estimated model shows that the value of standard coefficient (*Beta*) of quality of the vehicle variable is -0.609 which has high negative value. It implies that the quality of the quality of the vehicle has bigger negative influence or dominant influence toward the drivers' income. The better the quality of the quality of the vehicle, the higher the income that will be earned by the drivers. In this case, the better the quality of the quality of the vehicle, the lesser the earned income. Good quality of the quality of the vehicle will make it easier for the drivers to drive the bus. Yet, in fact, the goodness of the quality of the vehicle does not bring higher income for drivers. It is caused by the fact that when public bus companies improve the quality of the quality of the vehicle or provide new buses, there will be lesser compensation for the drivers compared to the drivers of old vehicle since driving old vehicle is more difficult than driving the new ones.

The result of the estimated model showed $R = 0.720$. It shows that there is a strong correlation between the independent variables altogether toward the dependednt variable (drivers' income). R^2 (*R Square*) was found at 0.518 or 51.8% which implies that the influence of the skill, experience, work duration, distance, quality of the vehicle, environment and compensation altogether influence the drivers' income as much as 51.8, whilst the other 48.2% is the influence of other variables which are not discussed in this study.

The result of the F_{value} is 17.959 (sig 0.000) and the F_{table} at 2.089. Thus, $F_{value} > F_{table}$ which shows that the independent variables; skills, experience, work duration, distance, quality of the vehicle, environment and compensation have simultaneous and significant influence to drivers' income for Java route.

T test was administered to see if the regression model of the independent variables have partial significant influences toward the dependent variables. Based on the estimated model, the t_{value} of each variable shows result as follows: Skill (2.152), Experience (4.548), Work duration (-0.983), Distance (3.275), Quality of the Vehicle (-2.466), Environment (-1.846) and Compensation (-3.271). The t_{table} value is 1.980 in which skill, experience, and

distance have $t_{\text{value}} > t_{\text{table}}$, it means that partially, there was a positive influence among the skill, experience and the distance toward drivers' income. Meanwhile, the work duration, quality of the vehicle, environment and compensation have negative influence toward the income of across-cities across-provinces bus drivers for Java route.

The income disparity of across-cities across-provinces (AKAP) bus drivers of Sumatera and Java routes. This study employed the decomposition method proposed by Blinder and Oaxaca (1973) which theoretically divides income disparity into two types which are the income disparity caused by different endowment and income disparity caused by unexplainable factors. After average disparity analysis of across-cities across-provinces bus drivers' income, the disparity value is found as follows:

Table 3 – Average Income of Across-cities across-provinces Bus Drivers in South Sumatera

Category Differences (1)	Mean (2)	Standard of Deviation (3)	Standard of Error mean (4)
Ln_Income of Driver_1	14.842683	0.1504516	0.178601
Ln_Income of Driver_2	14.656834	0.1993984	0.178347
Total Differences	0.185849		

Source: Primary data interpretation (2016).

1 = Sumatera route.

2 = Java route.

Table 3 explains that the average income of the drivers that was derived from the equation Ln showed estimated value of 14.842683 for drivers of Sumatera route and 14.656832 for drivers of Java route. Thus, there is a difference on the total income of 0.185849.

The result of the analysis showed that there was income disparity among the drivers of those two across-cities across-provinces bus routes in South Sumatera. After knowing the existence of the income disparity, the data were then analyzed to see the degree of the disparity that could be seen from the positive or negative signs on the endowment value. Each of endowment difference with positive value (benefits for drivers of Sumatera route) reflected higher endowment level of the drivers of Sumatera route compared to drivers of Java route. The difference of the endowment with negative value (benefits for drivers of Java route) means that the drivers of Java route had lower endowment level compared to the drivers of Sumatera route which minimized the gap of the income disparity.

The result of the analysis on the data related to the income sources of the variables showed that there were three variables with positive endowment influence and four variables with negative influence as presented in Table 4.

Table 4 – Blinder-Oaxaca Decomposition of Across-cities across-provinces Bus Drivers

No	Variable	Cause of the Disparity		E + C
		Endowment (E)	Coefficient (C)	
1.	Skills	-0.4540	-7.0549	-7.5089
2.	Experience	-0.1337	-2.2451	-2.3788
3.	Work duration	-2.1284	-1.2794	-3.4079
4.	Distance	-0.2112	-3.2600	-3.4712
5.	Quality of the vehicle	0.3944	-7.1130	-6.7185
6.	Environment	0.0903	-7.3686	-7.2783
7.	Compensation	0.2770	-7.9442	-7.6672
	Sub Total	-2.1656	-36.2652	-38.4308
	Unexplained (U)	-2.728		
	Disparity (D) = C + U	-38, 993		
	Total Disparity (R) = E + C + U	-41.159		
	Disparity percentage (D/R)	94, 74%		

Source: Primary data interpretation (2016).

The result of the measurement using the Blinder-Oaxaca decomposition method showed that the skill variable had negative endowment influence of -0.4540. It showed that drivers' skill only gave small influence to the income disparity. For the variable of drivers' experience, there was a negative endowment influence of -0.1337 which also showed that the experience gave insignificant influence to income disparity. Work duration variable showed negative endowment value of -2.1284 which also showed that work duration gave small influence to the income disparity. The distance of the travel showed negative endowment influence of -0.2112 which showed that the distance of the travel had insignificant influence to the income disparity. Whereas, the quality of vehicle showed positive endowment influence at 0.3944 which means that the quality of the vehicle influenced the income disparity since the maintenance expenses were covered by the company. The quality of the vehicle should be well maintained to provide passengers with comforts and safety. The environment variable showed positive endowment influence of 0.0903 which means that the environment influenced the income disparity. The difficulty level of the environment determines the income since the higher the risk, the higher the salary that should be received by the drivers. Compensation variable also showed positive endowment influence of 0.2770 which showed that the compensation influenced the income. The form of the compensation should be taken into consideration in determining drivers' salary.

Based on the result of the Blinder-Oaxaca decomposition method, the sub total factors causing the disparity (endowment) showed value of -2.1656 with causal coefficient value of -36.2652 and other unexplainable variables as much as -2.728. Meanwhile, the income disparity is found at -38.993. The test also shows the total income disparity as much as 41.159 which means that the percentage of the income disparity among bus drivers of Sumatera route and Java route was 94.74%.

Theoretically, the result of the Blinder-Oaxaca decomposition analysis categorizes the drivers' income into two categories; the first one is the income disparity caused by endowment, and the second one is the income disparity caused by unexplainable variables that are not discussed in this study. Out of the seven variables, there were three variables showing positive endowment influences that are the quality of vehicle, environment, and the compensation. It implies that the bus drivers of Sumatera route have higher endowment compared to those of Java route. As the result, those three variables are able to increase the gap of drivers' income disparity.

Excellent vehicle quality enhances the safety, security and the comfort that will satisfy the passengers on board. The number of passenger of Sumatera route is not as big as the number of passengers of the Java route. Passengers are also quite selective in selecting the bus company or armada, choosing only those that provides good service during the across-cities across-provinces travel. Environment which is related to the road condition and the nature of Sumatera route is more dangerous because the road is desolated and there are many long winding roads and narrow turns. Due to the condition of the nature and the road, drivers are required to keep themselves alert and drive the bus slowly which make the work duration gets longer. The compensation should be given based commission system, but most of bus companies apply salary system for the compensation. Whilst, the other four variables show negative endowment influence that are drivers' skill, experience, work duration, and distance. It means that the bus drivers of Java route have higher endowment level that minimizes the gap on income disparity between drivers of Sumatera route and drivers of Java route.

CONCLUSION AND SUGGESTIONS

Based on the result of the data analysis, the work duration is the variable that has stronger negative influence or dominant influence to drivers' income for Sumatera route. Meanwhile, for the Java route, the quality of vehicle appears to be the variable that has stronger negative influence or dominant influence to the across-cities across-provinces bus drivers' income.

The analysis of Blinder-Oaxaca decomposition theoretically divides the income into two types; the first one is the income disparity caused by different endowment and the second one is the income disparity that is caused by other unexplainable factors or variables that are not being discussed in this study. Out of seven variables, there were three variables that show positive endowment effects that are the quality of the vehicle, environment, and compensation which means that the bus drivers of Sumatera route tend to have higher endowment compared to those of Java route. Thus, those three variables determine the gap of drivers' income disparity.

It is important that company consider the work duration of the drivers since driving the bus is a risky job related to the life and safety of passengers. It is necessary that companies give drivers time to take enough rest in order to maintain their bodies fresh and to be able to concentrate well while driving the bus. The quality of the vehicle should also be enhanced over time since this job offers public service to the passengers. Passengers will choose the best armadas that give them comfort, safety, and security during their long trip to their destination. Thus, excellent quality of bus will guarantee the glibness of the travel in order to reach the destination on time as scheduled. When passengers feel comfortable, safe and secure, there will be more prospective passengers who choose bus as their preferred transportation. Therefore, government as the rule maker and policy maker should always control the public service of this land-transportation sub sector by regularly checking the quality of service given by bus companies.

Moreover, the welfare or prosperity of across-cities across-provinces bus drivers should be taken into account since this job has high-risk level and it deals with the life and safety of the drivers and the passengers as well. The level of riskiness reflects the amount of salary that should be received by the workers. Thus, it is rightful to give bus drivers high income for their work. By giving them their rights, it is expected that they stay calm and comfortable while doing their job. Besides carrying people to travel from places to places, the land-transportation sector also has vital role as it contributes to the distribution of goods and services all over the nation. Therefore, the government, especially the Ministry of Transportation, Communication and Informatics should control the bus companies in South Sumatera related to their responsibility of providing appropriate compensation for the drivers in order to guarantee drivers' prosperity.

Finally, income disparity might not appear only to land-transportation sub sector. Thus, it is interesting to apply the Blinder-Oaxaca decomposition method in conducting other research on other sub sectors such as ship transportation and aviation.

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DOI <https://doi.org/10.18551/rjoas.2017-01.14>

**THE INFLUENCE OF ORGANIZATION CULTURE AND MOTIVATION
ON THE VOLUNTEER'S INTENTION TO LEAVE MEDIATED BY THE WORK
SATISFACTION: A STUDY ON VOLUNTEERS AT NON PROFIT ORGANIZATION
SAVE STREET CHILD IN EAST JAVA PROVINCE**

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ABSTRACT

The purposes of this research are to analyze the influence of organization culture, motivation, and work satisfaction towards the volunteer's intention to leave, analyze the role of work satisfaction in mediating the influence of organization culture and motivation towards the volunteer's intention to leave in Save Street Child organization. This research uses quantitative approach by using purposive sampling method. Questionnaire is given to the volunteers of Save Street Child in East Java Province. There are 150 respondents in total. Data analysis technique uses Partial Least Square (PLS) as the analysis tool. This research results show that: (1) organization culture significantly influences the intention to leave, (2) organization culture significantly influences the work satisfaction, (3) motivation does not significantly influence the intention to leave, (4) motivation significantly influences the work satisfaction, (5) work satisfaction does not significantly influence the intention to leave, (6) Work satisfaction does not mediate the influence of organization culture on the intention to leave, (7) Work satisfaction does not mediate the influence of motivation on the intention to leave.

KEY WORDS

Volunteers, save street child organization, organization culture, intention to leave, motivation.

There are a lot of organizations, both public and private that need and use volunteer service to actualize their vision and mission. For example, the government in England makes program that supports volunteers by offering individuals who do not work full time or unemployed to become volunteer at Department of Health and Social Security. The purpose of this program is to facilitate individuals who do not work full time or unemployed to become volunteers in health or social service field. While in Canada, volunteers are empowered as an alternative resource to help improve the service quality at hospitals especially for non medical service, such as providing information to visitors, giving moral support, and calming down the patients (Handy and Srinivasan, 2004). Moreover, the involvements of the volunteers are also visible in charity or fund raise events, motivate people to be more prosperous and encourage them to be volunteers (Low et al., 2007).

The current issue here is that the demand of volunteer is often exceed the availability numbers of volunteers (Hager and Brudney, 2011). The research of Handy and Srinivasan (2004) found that the numbers of volunteers involved in non medical services, such as encouraging and motivating the patients, and various kinds of support services at hospitals in Canada in the last five years or more have decreased 80%. In Scotland, the numbers of formal volunteers have decreased 5% in 2005 and 6% in 2006 (Volunteer Development Scotland Research Team, 2007). Labor Statistic Bureau in United States of America shows 2.2% degression of volunteer numbers from 2003 until 2005 (Salas, 2008). According to the research of United Parcel Service Foundation (1998), which was quoted from McCurley et al. (2007), there are several reasons that cause volunteers to leave organization. They found that poor management of volunteer, such as charity event that is not managed properly, does not use volunteer's time and talent appropriately, does not elaborate the volunteer's duties clearly, and no appreciation for volunteers, to cause individuals decision to stop being volunteer.

To keep volunteers in organization, it needs a good management. David Smith's (1998) research found that 71% of volunteers stated that volunteers should be more organized. Friendly atmosphere of organization and experiences gained from the contribution given by the volunteers are important. By giving chances or opportunities for volunteers to express value and develop self identity, volunteers can help organization in forming organization culture which suits the volunteer's wish and need. According to Atkins and Turner (2006), unsatisfying culture that ignores the need of employees can cause disappointment in the employees and stimulate them to find opportunity in other place. In contrary, satisfying culture makes work environment enjoyable therefore increase work passion (Sadri and Lees, 2001). Beside organization culture, another variable that influences the work satisfaction of volunteers is motivation. Farrel et al. (1999) stated that interaction between motivation and real experience influences the satisfaction level of volunteers. If their main motivation is fulfilled through activities held by organization, then volunteers will be satisfied with their performance (Dorsch et al., 2002). By understanding the reason why individual becomes volunteer and what makes them stay, can give solution on how to motivate and maintain volunteer in order to actualize the purpose of the organization. The purpose of this research is to find out and analyze the influence of organization culture, motivation, and work satisfaction towards the volunteer's intention to leave at Save Street Child organization. The research problem are as follow: Is there any influences of organization culture towards volunteer's intention to leave at Save Street Child organization?; Is there any influences of organization culture towards volunteer's work satisfaction at Save Street Child organization?; Is there any influences of motivation towards volunteer's intention to leave at Save Street Child organization?; Is there any influences of motivation towards volunteer's work satisfaction at Save Street Child organization?; Is there any influences of work satisfaction towards volunteer's intention to leave at Save Street Child organization?; Does work satisfaction mediate the influence of organization culture towards volunteer's intention to leave at Save Street Child organization?; Does work satisfaction mediate the influence of motivation towards volunteer's intention to leave at Save Street Child organization?

THEORETICAL FRAMEWORK AND HYPOTHESES

Volunteers. According to Marx (1999), the meaning of volunteer is a person who helps other people without expecting any compensation and giving services without expecting reward. While according to Oppenheimer (2012), volunteer is individual that gives help without expecting something in return. Volunteer gives help in form of time, skills or services for organization, which is done without coercion. There are differences in the definition and conceptualization of volunteer's activity. Several researchers define volunteer's activity only as altruistic act and not paid. While other definitions include the possibility of self interest and need of acknowledgement (Barnes and Sharpe, 2009).

Non Profit Organization Culture. According to Schein (1984), organization culture is the basic pattern accepted by organization to act and solve problem, create employees who are able to adapt to environment and unite the members of the organization. Hofstede et al. (1990) defined culture as interactive aggregate of general characteristic that influence a group of people in responding their environment. While according to Susanto (2007), organization culture is values that become guidance for individual to respond external problem and adaptation into company so that each member of organization has to understand the existing values and how to act or behave. The opinion about organization culture generally emphasizes on the importance of values shared and bond of trust and also the influence towards the behavior of organization member.

Non profit organization has different characteristic from other organizations especially in organization values (Anheier, 2005). Moore (2000) added, various types of organization create values diversity. For profit organization value, it focuses more to the strategy to measure the stability of organization's financial stability, while non profit organization has values that are placed on social purpose achievement. In non profit organization, there is dominant value which is expected and suggested by organization to be shared to the

members of organization. According to Anheier (2005) there are several dimensions that become the basic and value of non profit organization. They are: 1) Charity; 2) Philantropy; 3) Volunteering; 4) Giving.

It can be explained that there is a set of values, role and function of non profit organization that differentiate it from other organization. For example, governmental organization aims to optimize social welfare of the whole community by distributing resources and providing unfulfilled basic needs. Private company aims to increase the profit of the company's owner by producing commodities that can be sold in market. While non profit organization aims to increase client's welfare (homeless, street children, homeless drifter, beggar, etc) and pay attention to minority's interest which is lack of attention from the government.

Motivation. Motivation is a process that has role in intensity, purpose and the continuity length of individual's effort to reach the target (Robbins, 2007). While according to Tua (2002), motivation is factors that direct and encourage people's behavior or desire to do an activity which is actualized in form of strong or weak effort. Maslow (1943) explained that individual's motivation can be illustrated in hierarchy form; that when one of the needs level is fulfilled, then that needs level can no longer able to motivate so that the next level of needs must be fulfilled immediately to motivate the individual.

To be able to understand the volunteer's motivation, Clary et al. (1998) used Functional Analysis method to comprehend the phenomenon and process in the dimension of behavior, social awareness, social relation, personality, and also the answer of question regarding the volunteer's motivation. Clary et al. (1998) formulized six indicators to measure volunteer's motivation, they are: 1) Understanding; 2) Values; 3) Social; 4) Career; 5) protective; 6) Enhancement.

Work Satisfaction. Work satisfaction has been defined and measured as global construction and as a concept with many dimensions (Locke, 1970; Price 1997; Scarpello and Campbell, 1983). In general, work satisfaction is defined as a function of acceptance relationship between what people wants from a job and what they accept as an offer (Locke, 1970). According to Mullin (2005), the level of work satisfaction is influenced by several factors such as: 1) Individual Factor; 2) Social Factor; 3) Cultural Factor; 4) Organisational Factor; and 5) Enviromental Factor. Several factors which are explained previously, only influence at certain condition and probably is not really influencing in other individual.

Intention to Leave. According to Zeffane (1994), intention to leave is employee's tendency or intention to leave their job (resign). Intention to leave is indicated as individual's attitude that refers to the evaluation result regarding the continuance of individual relation with organization and not yet materialized in an exact action form (Suwandi and Indriantoro, 1999). There are a lot of reasons that cause the occurrence of intention to leave; one of them is the desire to get a better job.

Research Models. This research model analyzes the influence of organization culture and motivation toward the intention to leave which is mediated by work satisfaction.

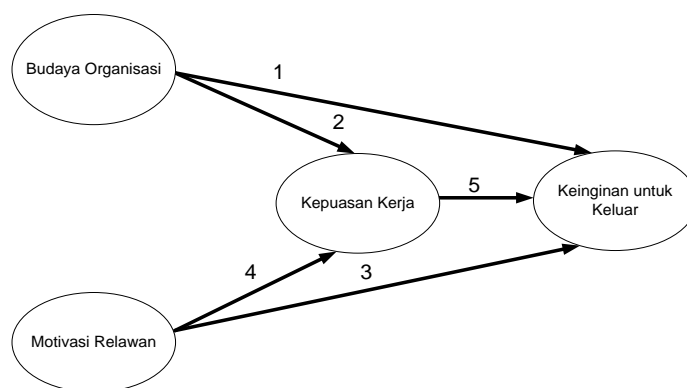


Figure 1 – Research Concept Framework

Research Hypothesis. Based on the research conceptual framework, thus these are the hypothesis of the research:

H1: Organization culture significantly influences the intention to leave;

H2: Organization culture significantly influences the work satisfaction;

H3: Motivation significantly influences the intention to leave;

H4: Motivation significantly influences the work satisfaction;

H5: Work satisfaction significantly influences the intention to leave;

H6: Work satisfaction mediates the influence of organization culture on the intention to leave;

H7: Work satisfaction mediates the influence of motivation on the intention to leave.

RESEARCH METHODS

Population and Sample. Population in this research is the active volunteers at Save Street Child. The reason of choosing active volunteers at this organization as population is because they often involve in activities and they understand the characteristic of Save Street Child organization's culture. Sampling technique used in this research is purposive sampling. Questionnaire is distributed through What's App, BBM, LINE and e-mail containing link that is connected to Google form (electronic questionnaire) to volunteers of Save Street Child organization in Surabaya, Malang, Sidoarjo, Pasuruan, Mojokerto, Blitar, and Jember. The questionnaire's answer method is using 5 scale of Likert. Data analysis used is statistic technique PLS (Partial Least Square).

Table 1 – Variable Measurement

No.	Variable	Indicator
1	Organization Culture (Cartwright, 1999)	Equity
		Equality
		Communication
		Empathy
		Technology
2	Motivation (Clarry et al., 1998)	Development
		Values
		Social
		Experience
		Protective
3	Work Satisfaction (Locke, 1969)	Enhancement
		The work itself
		Appreciation
		Development opportunities
		Supervision
4	Intention to Leave	Co-workers
		Intention to Leave

DATA ANALYSIS AND DISCUSSION

Description of Respondent. Respondent's characteristic is divided based on gender, age, education, and occupation. The number of female respondent is bigger than the male; there is 67% female and 33% male. Majority of the respondents which are 86% aged between 20-30 years old, while the rest 13% and 1% aged below 20 years old and above 30 years old. Based on the education level, the number of respondents with bachelor degrees (S1) is the highest, which is 61%, compared to the number of volunteers with Senior High School background, 26%, D3 9%, magister (S2) 3%, and Junior High School 1%. Meanwhile, the number of volunteers that is university students is the highest 63%, compared to respondents who are private employees which is 13%, and entrepreneur 12%.

From the test result of *convergent validity*, it shows that all research indicators are valid in measuring each research variable, except Development and Enhancement indicator because they have loading factor value less than 0.5.

The test of *discriminant validity* is done by comparing the root of *average variance extracted* (AVE).

Tabel 2 – The Test of Discriminant Validity

Variable	AVE	AVE Root	Correlation between Latent Variable			
			Organization Culture	Intention to Leave	Work Satisfaction	Motivation
Organization Culture	0.541	0.735	1.000	-	-	-
Intention to leave	0.751	0.866	-0.274	1.000	-	-
Work satisfaction	0.531	0.809	0.498	-0.245	1.000	-
Motivation	0.528	0.726	0.403	-0.261	0.714	1.000

Source: Processed Data (2016).

Based on the test result of *discriminant validity* on Table 2, it is found out that AVE Root of every variable shows value > 0.5 and close to 1, therefore all variables have fulfilled discriminant validity.

Based on the test of *composite reliability*, it is found out the composite reliability value of each research variable: 1) organization culture 0.891; 2) motivation 0.898; 3) work satisfaction 0.910; 4) intention to leave 0.900. The test result of Composite Reliability shows that each indicator mutually strengthens the latent variables or able to measure its own latent variable.

Table 3 – Structural Model Testing

Variable	R Square
Work satisfaction (Z)	0.557
Intention to leave	0.485

Source: Processed Data (2016).

Based on the testing of *inner model* on table 2, it is found out that work satisfaction variable has influence with predictioned power of the whole model in the amount of 0.557 or 55.7%. Intention to leave variable (Y) has an influence with predictioned power of the whole model in the amount of 0.485 or 48.5%. Moreover, the testing on *inner model* also can be seen from the evaluation of *predictive relevance stone-geiser Q-square test for predictive relevance*. Next, *R-square* value is inserted in to *Q-square* equation as follow:

$$Q^2 = 1 - (1 - R_1^2) (1 - R_2^2) \dots (1 - R_p^2)$$

Based on the evaluation of *Q-square*, it shows that the model has *predictive relevance*, because it has value 0.7718 which is bigger than 0 (zero); it means the model is good to be used.

Result of Hypothesis Testing. The hypothesis testing result by using PLS and Sobel formula can be seen in Table 4.

Table 4 – Hypothesis Testing

Variable Influence	Original Sample (O)	t-statistics (O/STDEV)	t-tabel	Remarks
Organization culture -> intention to leave	-0.192	2.006	1.64	Significant
Organization culture -> work satisfaction	0.252	4.115	1.64	Significant
motivation -> intention to leave	-0.158	1.351	1.64	Insignificant
motivation -> work satisfaction	0.613	11.709	1.64	Significant
work satisfaction -> intention to leave	-0.036	0.275	1.64	Insignificant
Organization culture -> intention to leave through work satisfaction	-0.0091	-0.2645	1.64	Insignificant
Motivation -> intention to leave through work satisfaction	-0.0221	-0.2717	1.64	Insignificant

Source: Processed Data (2016).

The hypothesis testing is done by comparing t-statistic to t-table. If t-statistic value is bigger than t-table value (1.64), then it is decided that H_0 is rejected and H_1 is accepted or significant and in contrary, if t-statistic is smaller than t-table value (1.64), then it is decided that H_0 is accepted and H_1 is rejected or insignificant. The analysis result of hypothesis test is

presented as follows:

H1: There is a significant influence of organization culture on the intention to leave. The testing result of first hypothesis shows that the value of path coefficient for negative 0.912, and value of t-statistic is 2.006 which is above t-table 1.64 (5%), therefore H1 is accepted and interpreted that organization culture (X1) negatively and significantly influences the intention to leave (Y).

H2: There is a significant influence of organization culture on work satisfaction. The testing result of second hypothesis shows that the value of path coefficient is positive 0.252 and value of t-statistic is 4.115 which is above t-table 1.64 (5%), therefore H2 is accepted and interpreted that organization culture (X1) positively and significantly influences the work satisfaction (Z).

H3: There is a significant influence of motivation on intention to leave. The testing result of third hypothesis shows that the value of path coefficient is negative 0.158 and value of t-statistic is 1.351 which is below t-table 1.64 (5%), therefore H3 is rejected and interpreted that motivation (X2) does not significantly influence the volunteer's intention to leave (Y).

H4: There is a significant influence of motivation on work satisfaction. The testing result of fourth hypothesis shows that the value of path coefficient is positive 0.613 and value of t-statistic is 11.709 which is above t-table 1.64 (5%), therefore H4 is accepted and interpreted that motivation (X2) positively and significantly influences work satisfaction (Z).

H5: There is a significant influence of work satisfaction on intention to leave. The testing result of fifth hypothesis shows that the value of path coefficient is negative 0.036 and value of t-statistic is 0.275 which is below t-table 1.64 (5%), therefore H5 is rejected and interpreted that work satisfaction (Z) does not significantly influence volunteer's intention to leave (Y).

H6: Work satisfaction mediates the influence of organization culture on the intention to leave. The testing of the sixth hypothesis used Sobel test. Based on testing result of Sobel for sixth hypothesis, value of path coefficient is negative 0.0091 and the value of t-statistic is -0.264 which is below 1.64 (5%), therefore H6 is rejected and interpreted that work satisfaction does not mediate the influence of organization culture on the intention to leave.

H7: Work satisfaction mediates the influence of motivation on intention to leave. Based on Sobel test result for seventh hypothesis, the value of path coefficient is negative 0.0221 and value of t-statistic is -0.271 which is below 1.64 (5%), therefore H7 is rejected. It is interpreted that work satisfaction does not mediate the influence of motivation on volunteer's intention to leave.

DISCUSSION OF RESULTS

The discussion of the research result is elaborated according to the descriptive analysis discussion of research variables and then hypothesis result discussion.

Organization Culture. Based on descriptive analysis of organization culture variable which is measured by 15 items, the average value of organization culture variable obtained is 3.830. It means that volunteers feel the strong organization culture at Save Street Child organization. Organization culture indicator which is perceived with the highest average value is technology indicator which has 4.187 for its average value, while organization culture with the lowest average value is equity indicator with 3.569 for its average value. The conclusion of descriptive analysis result is that technology does not only play important role in information transmission or decision making, but also as means to spread and internalize Save Street Child organization culture especially for the newly join volunteers. Meanwhile, equity indicator needs to be upgraded because it is related to the appreciation or experience obtained by the volunteers. Considering that volunteers work without being paid, therefore one of the ways to encourage their involvement is to give appreciation and valuable experience.

Organization culture has the influence on the intention to leave. From the testing result, first hypothesis proves that organization culture has significant influence on the intention to leave. This research result is in line with the researches of Mustika (2012), Johartono and

Retnaningtyas (2013), and Malik (2014). According to Suwandi and Indriantoro (1999), intention to leave is influenced by several factors; one of them is organization culture. A strong culture forms a strong loyalty and commitment towards employees which impacts on the decreasing intention to leave the company. This research result finds that the stronger organization culture, the lessen volunteers' intention to leave Save Street Child and vice versa.

Organization culture has the influence on work satisfaction. The test of second hypothesis proves that organization culture significantly influences work satisfaction. This research result is in line with the research result of Sabri et al. (2011) and Lund (2003). According to Mullins (2005), the level of work satisfaction is influenced by several factors, such as culture factor (behavior, beliefs and value) and organization factor (structure, policy, procedure, leadership, technology, and work condition). This research result finds that the stronger organization culture, it can increase volunteer's work satisfaction, and vice versa.

Motivation. Based on descriptive analysis result of motivation variable which is measured by 19 items, the average value of motivation variable derived is 3.963. It means that the volunteers of Save Street Child have high motivation. Motivation indicator perceived to have the highest value is values indicator with 4.402 for its average value, while motivation indicator with the lowest average value of 3.113 is the enhancement indicator. The conclusion of descriptive analysis result is that values have important role in motivating volunteers because the nature of values at Save Street Child organization is humanism and care for street children. Meanwhile, the enhancement indicator gets the lowest value because the reason of the individual becomes volunteer is not due to their willing to be acknowledged or famous, but it is due to their caring on other people especially street children.

Motivation has the influence on the intention to leave. The test of third hypothesis finds that motivation does not significantly influence the intention to leave. This research result is in contrary with the research result of Oliver (2012) and Sumarto (2009), but in line with the research of Mesch et al. (1998) which found that altruistic motivation within volunteers of Americorp does not influence the volunteer's retention. The research result shows that volunteer's motivation does not significantly influence the volunteer's intention to leave. The reason why motivation does not influence intention to leave is because when volunteers leave the organization, it is not because they want, but they have to. There are other conditions that force volunteers to leave the organization. Based on the respondents/volunteers' answers regarding intention to leave, it shows that the volunteer's intention to leave Save Street Child organization is low. It means that the volunteers joined this organization does not have the intention to leave this organization. Several reasons that force volunteers to leave organization are because they get a job (Wardell et al., 2000), they continue to study to higher level (Iveson, 1999; Blake and Jefferson, 1992), or they move to another area (Davis Smith, 1998). Furthermore, Locke et al. (2003) found that research which studies volunteer's motivation that is expected to be a determinant factor and also correlated with the continuation to become volunteers, shows evidence that it cannot be concluded. It is caused by the variability of research result regarding volunteer's motivation. Moreover, Locke et al. (2003) explained that what becomes the main motivation why people choose to be volunteers does not simply lead their continuity to be volunteers.

Motivation has the influence on work satisfaction. The test of fourth hypothesis finds that motivation significantly influences the work satisfaction. The result of this research is in line with the researches of Saleem et al. (2010), dan Srinadi dan Supartha (2015). In Rao's (2005) research, it is found that satisfaction in work acts as motivation in working. Motivation drives individual to work satisfaction. The result of this research finds that the increasing of volunteer's motivation significantly influences the increasing of volunteer's work satisfaction, and vice versa.

Work Satisfaction. Based on the descriptive analysis of work satisfaction variable, which is measured by 15 items, the average value of work satisfaction obtained is 3.589. It means, volunteers at Save Street Child organization have high work satisfaction. Work satisfaction indicator perceived with the highest value is co-workers indicator with 3.858

average value while work satisfaction indicator with the lowest average value of 3.349 is appreciation indicator. The conclusion of descriptive analysis result is that co-worker indicator plays important role in creating volunteer's work satisfaction. It is because when they become volunteers, individuals get opportunity to meet new colleagues. Moreover, the willingness of fellow volunteers to care and help each other in completing task or execute events gives satisfaction for volunteers. Meanwhile, appreciation indicator which has the lowest average value shows the lack of appreciation between volunteers and also from coordinator/General Coordinator regarding their contributions. This finding needs to be responded by increasing appreciation for every contribution they give both in form of energy and time by giving compliment or recognition.

Intention to Leave. Based on the descriptive analysis of intention to leave variable which is measured by 3 items, the average value of intention to leave variable obtained is 1.964. Based on Mean value, the intention of Save Street Child's volunteers to leave the organization shows a low number, it means volunteers feel comfort to keep contributing and involving in Save Street Child. As example, of three statement items asked to respondents, statement item D1.2 "if respondent is given choices, respondent will not choose to become volunteers" shows the lowest value 1.673. It means almost all respondents agree to still choose to become volunteers. Similarly, statement item D.1.1 "respondent already considers to leave their position as volunteers" and statement item D.1.3 "in the near future respondent will leave their position as volunteers" show low average values which are 2.127 and 2.093. It means the willingness of volunteers to stay in Save Street Child organization is high.

The influence of work satisfaction on intention to leave. The test result of fifth hypothesis finds that work satisfaction does not significantly influence the intention to leave. This research result is in contrary with the researches of Gregory (2011) and Puma (2012), but in line with the research of Sumarto (2009) which found that work satisfaction does not significantly influence the intention to leave. The more work satisfaction the employees get does not in line with the decreasing of intention to leave. The conclusion of this research is the increasing of volunteer's work satisfaction does not significantly influence the decreasing of volunteer's intention to leave and vice versa. The cause of uninfluent relation between work satisfaction and volunteer's intention to leave is because volunteer is the kind of job that is voluntary without any compensation and career stage. According to Ramlall (2003), the consideration of intention to leave is determined by compensation and career development factors. Compensation effectively forms psychology bound between individual and organization, and it is an indicator of individual's performance. Company can minimize the frequency of employees turnover with compensation, therefore company have to make sure that the employees are satisfied with the compensation they receive (Sumarto, 2009). In line with Sumarto's statement, Fiorillo's (2011) found that appreciation in form of compensation has influence towards volunteer's decision to donate their time and also increase their involvement in the organization. However, the nature of work at Save Street Child is voluntary without any compensation and guarantee of a better career stage, thus the satisfaction achieved by the volunteers is only temporary. Therefore, this makes volunteer's work satisfaction uninfluent towards intention to leave.

Besides compensation factor, another cause that makes work satisfaction uninfluent towards intention to leave is because there is ambiguity related to volunteer's satisfaction (Locke et al., 2003). As example, in Finklestein's (1998) research, volunteer's work satisfaction is determined by the duration of volunteer's involvement study on AIDS organization. Moreover, according to Wardell et al. (2000), the dissatisfaction of volunteer towards their job as volunteer does not simply make it the reason they intend to leave. The cause that makes volunteers keep involving in voluntary activity even though they experience dissatisfaction is their responsibility towards organization or because there is no one to replace them to do the job. Volunteer's satisfaction or dissatisfaction in their voluntary work does not influence their intention to leave because the voluntary job at Save Street Child is not formally bound. Therefore volunteers are free to stay or leave the organization without any sanctions or punishments.

The role of work satisfaction in mediating the influence of organization culture on the

intention to leave. In line with the fifth hypothesis, the sixth hypothesis of this research is in contrary with the research result of Macintosh & Doherty (2008). From this research result, the rejection of the sixth hypothesis shows that work satisfaction does not mediate the influence of organization culture on the intention to leave. The increasing of work satisfaction does not mediate the influence of organization culture and motivation towards the increasing or decreasing of volunteer's intention to leave. The work satisfaction that volunteers achieved through a strong organization culture and a high motivation does not influence volunteer's intention to leave because there is no strong bound with the organization. Whether volunteers are satisfied or not with the organization culture at Save Street Child, they tend to leave the organization because they need to get a better job or future guarantee, considering that the majority of the respondents are university or high school students.

The role of work satisfaction in mediating the influence of motivation on the intention to leave. In line with the fifth hypothesis, the seventh hypothesis of this research result is in contrary with the research result of Tzeng (2002). From this research result, the rejection of the seventh hypothesis shows that work satisfaction does not mediate the influence of motivation on the intention to leave. The increasing of work satisfaction does not mediate the influence of motivation on the increasing or decreasing of volunteer's intention to leave. The work satisfaction that the volunteers achieved through the high motivation does not influence the volunteer's intention to leave because the motivation that the volunteer's achieved is only a fulfillment of self actualization needs. Individual, in self actualization level, has needs to actualize the value and beliefs they have. Eventhough in Maslow Hierarchy self actualization need is the highest need, it does not mean that other needs are already fulfilled. This can be seen from the majority of Save Street Child's volunteers who are university or high school students that have not fulfilled their psychology and security need, such as a better occupation and future guarantee. Therefore they are most likely leaving the organization.

Based on the findings elaborated above, it can be concluded that factor influencing individual to become a volunteer is not the factor which is determining individual to keep being a volunteer. Although it can be identified that some variables influence the volunteer's desire to withstand, however the influence of volunteer's characteristic is very complex that it cannot predict what kind of characters that makes individual becomes long term volunteer (Locke et al., 2003). The research of Penner and Finklestein (1998) concluded that it cannot be determined whether satisfaction toward organization that cause the length of voluntary period of individual or the length of becoming volunteer that causes satisfaction. Therefore, for further research, a complex situation analysis that involved many factors regarding the intention of volunteer to leave needs to done.

CONCLUSION AND SUGGESTIONS

The researchers realize that this research has limitations of study, such as this research only measures the intention to leave from the volunteers' internal factor. Next researchers are expected to add volunteer's external factor such as decision to leave due to works, married plan, and continue to study to a higher level. Moreover, this research has not included open question item, thus it is expected that in the next research, researchers will include open question item to be able to examine more about the behavior and characteristic of volunteer.

Based on the research's results and discussion elaborated previously, it can be concluded that result of this research shows that organization culture significantly influences the intention to leave; organization culture significantly influences the work satisfaction; motivation does not significantly influence the intention to leave; motivation significantly influences the work satisfaction; work satisfaction does not significantly influence the intention to leave; work satisfaction does not mediate the influence of organization culture on the intention to leave; work satisfaction does not mediate the influence of motivation on the intention to leave.

Suggestions for further research:

Further research should expand the research object; not only on Save Street Child

organization, but also other volunteer organizations such as Indonesia Mengajar, Kelas Inspirasi, Earth Hour, and Ketimbang Ngemis;

Further research should use qualitative method to get better understanding on the role of organization culture and motivation towards volunteer's intention to leave;

Further research should enrich the research field by adding untested variables in this research such as commitment, work stress, performance variables, and also the use of control variable (such as age range and gender) into research method.

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DOI <https://doi.org/10.18551/rjoas.2017-01.15>

STUDY ON DESTINATION IMAGE, SATISFACTION, TRUST AND BEHAVIORAL INTENTION

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ABSTRACT

The purpose of the study was to develop understanding about the influence of Destination image, and satisfaction towards pada trust and behavioral intention in the tourist village in Sleman, Yogyakarta. The sampes of the study were the domestic tourists whose ages were between 18 and 35 years old. The method of analysis was Generalized Structured Component Analysis (GSCA) in order to analyze the correlation between Destination image as well as satisfaction and trust as well as behavioral intention. The findings show that Destination image had significant influence towards trust, satisfaction had significant influence towards trust, Destination image did not have significant influence towards behavioral intention, satisfaction did not have any significant influence towards behavioral intention and trust did not have significant influence towards behavioral intention. It also showed that satisfaction had indirect influence towards behavioral intention through trust. It was expected that further study may explore the role of trust towards tourism village in Indonesia. It is important to conduct further studies where data are taken from several tourism villages in Indonesia. The findings indicated that there was correlation between Destination image, satisfaction, and trust; these three had influence towards behavioral intention in the future. At last, trust played important role in tourism village.

KEY WORDS

Destination image, satisfaction, trust, behavioral intention.

Intertational tourism business will give contribution to several groups. International tourism provides foreign exchange as well as job opportunity and career development for million people in Indonesia through retail, construction, manufacture, telecommunivation and tourist agency (Mohamad et al., 2014). Development of tourism industry provides job opportunity and investment for the locals in order to improve local economics (Nunkoo and Smith, 2013). The impact of tourism exceeds economic and business aspects. Therefore, tourism becomes strong calayst for growth so that it can result in higher multiplier effect and encourage the growth of other economic sectors (Srivastava, 2013; Hanif et al., 2013). Besides that, tourism boosts regional development tremendously (Chen and Tsai, 2007).

Jayawardena (2002) stated that the future of tourism relied heavily towards how capable each country is in providing qualified products of torusim in order to meet constantly changing preference, need, expectation and demand of international travelers. It showed change in consumer behavior more particularly related to traveler's motivation to travel or decide which tourism spots he or she is going to visit. Another phenomenon that shows change in consumer's behavior is thousand of people go on vacation either on holiday or during the weekend to rural areas especially those with historical sites and architectures. Similar behavior was found in relation to the flow of tourist where most of them travelled to rural areas or villages either as tourist or excursionist (Royo-Vela, 2009).

In tourism industry, it is vital to make sure that travelers re-visit particular tourism spots in the future based on their first experience visiting the places (Osman and Sentosa, 2013). Therefore, tour manager should understand traveler's behavior. The study analyzed traveler's behavioral intention due to its pivotal role for tourist agency; traveler's intention, intention to revisit, and word-of-mouth (recommendation) help predicting whether a traveler will become long-term customer and bring more benefit for tourist agency (Lingling Fan, 2009). Behavioral intention is the signal of actual purchase (Zeithaml et al., 1996).

Destination image and traveler's satisfaction are important predictors of intention to re-visit (Yoon and Uysal, 2005), satisfaction is direct antecedent of traveler's intention (Cronin et al., 2000). The traveler's intention to revisit depends heavily towards his or her positive perception of certain tourist destination (Chi and Qu, 2008). Destination image is essential due to its influence towards potential traveler's decision-making process (Mayo, 1981; Crompton, 1979). It is evident that destination image affect how potential travelers select tourist destination (Hunt, 1975; Gunn, 1988).

Satisfaction is the major indicator of long-term customers and has become significant identifier of customer behavior in the future in terms of tourism; Petrick, 2002) (Oliver, 1980; Cronin and Taylor, 1992. Customer satisfaction predicts following behavior of the customers (Fornell et al., 1996). For tourists agents, traveler satisfaction towards destination is the most pivotal element to develop sustainable business (Khuong and Ha, 2014) and the key of successful marketing; satisfaction influence choice of destination and decision to re-visit (Yoon and Uysal, 2005).

Some external factors such as risk are important indicators of traveler's behavioral intention (Moutinho, 1987). It is a challenge to minimize risk so that travelers feel safe and enjoy their visit. Therefore, tour managers should gain traveler's trust since trust can reduce traveler's uncertainty. Travelers should not feel vulnerable and should believe they can rely on trustworthy organization/ institution during their visit (Aydin and Özer, 2006). A trustworthy tourist destination has strong competitive advantage compared to other tourist destination and may become an alternative for travelers to decide where they are going to spend their vacation (Srivastava, 2013). More specifically, trust minimize traveler's uncertainty in the way that they feel they can rely on tourist agency (Chaudhuri and Holbrook, 2001). Considering the pivotal role of trust in successful marketing, trust is used as one of the variables in the study. Hence, the purpose of the study is to describe the correlation between destination image, satisfaction, and trust and behavioral intention in order to promote the national rural tourism. In other words, it evaluates some concept related to destination image, satisfaction, trust and behavioral intention.

LITERATURE REVIEW

Destination image. Brand image is the main driver of brand equity, which refers to the general perception of the consumer and feelings about the brand, and influences consumer behavior (Zhang, 2015). Kottler (2009) defined brand image as a set of beliefs, ideas and impressions an individual has toward certain brand. Keller (1993) defined brand image as "*the brand relations retained in consumers mind causes the assumptions about a brand.* Studi dari *brand image, brand personality, brand relationship and brand loyalty*" which can be found in the literature related to general marketing focusing on consumer products (Garbarino and Johnson, 1999). However, the application of the theory of branding and its relationship with tourist destination is still relatively new.

Brand image for research in tourism is frequently called destination image. Destination image is the major topic of tourism industry for any destination. It can affect the decision-making process for travelling and sales of products for travelling (Jenkins, 1999). Image refers to the impression of a destination by tourists, and the image is an overall description traveler has in mind that it is an important factor that encourages consumers to take a decision or cognition (Dichter, 1985). "Destination image is an interactive system of thoughts, opinions, feelings, visualisations, and intentions toward a destination (Tasci et al., 2007)." Destination image is the amount of beliefs, attitudes and impressions of individuals or groups to travel to certain tourist destination or the aspect of destination (Weaver and Lawton, 2010). Thus, destination image may be defined as the perception of the destination in the minds of consumers as the driving force in decision-making process.

Once travelers have positive impression towards certain tourist destination, they will have tendency to return (revisit) (Laws, 2002; Beerli and Martin, 2004; Bonn et al., 2005). Destination image is significant and effective for traveller's decision-making process (Yilmaz et al., 2009). Destination image affect the decision-making of the travelers especially during

process to find alternative destination, search for destination, satisfaction towards the destination, and behavioral intention (Jenkins, 1999). It can be concluded that destination image affect traveller's decision-making process when they select alternative destination.

Image becomes the basis of behavioral analysis of travelers: prior to, during and after vacation (Bigne et al., 2001). Image is essential concept in studies about consumer behavior because it influences individual/ public, subjective perception, value for customers, satisfaction and behavioral intention (Dobni and Zinkhan, 1990). According to Schiffman and Kanuk (2008), positive brand image is related to customer loyalty and customer trust about positive brand image and willingness to find the image.

Satisfaction. Conventional literature in consumer behavior showed that customer satisfaction was the result or the final step of the psychological process from recognition of need to evaluate the experience towards certain product (Peter and Olson, 1999). Satisfaction is defined as response to consumer fulfillment towards attitude that involves elements such as ratings after purchase or a series of interaction between consumer and product (Lovelock and Wirtz, 2004). Satisfaction is evaluation of the overall purchase (Fornell, 1992). Oliver (1981) defined customer satisfaction as a direct perception of customer after experiencing particular product or service. It shows that satisfaction is the result of an evaluation after the entire purchasing activities has been completed.

In literatures about tourism, consumer satisfaction is evaluation based on interaction with service providers and used by customers to predict future experience (Crosby et al., 1990). Traveler satisfaction, according to Baker and Crompton (2000), is emotional state of travelers after experience. It means satisfaction is traveler's reaction after having experience or visiting tourist destination. Traveler's satisfaction is real experience after traveling which is derived from psychological state resulted from individual experience to reach certain tourism spot.

In the context of tourism, satisfaction solely refers to traveler's evaluation about tourist destination based on their on-site destination. Traveler's satisfaction is defined as positive mental state activated by experience travelers obtained while traveling (Meng and Uysal, 2008). Destination satisfaction refers to emotional state reflected in post-exposure evaluation of a tourist based on tourism spot he/she visited (Baker and Crompton, 2000) ;(Su et al., 2014). Therefore, it can be inferred that in terms of tourism consumer satisfaction is consumer's reaction and positive impression having visited tourist destination.

Tse and Wilton (1988) developed perceived performance model. The model evaluated satisfaction as actual performance apart from customer expectation prior to purchasing. In other words, actual performance and initial expectation should be measured independently, instead of comparing performance and past experience. Thus, in the model, traveler's expaction is not one of the elements for evaluating traveler's satisfaction using traveling experience. Measuring satisfaction using Tse and Wilton (1988)'s model is measuring performance the traveler's feel and therefore, expectation prior to purchasing is not taken into account. In conclusion, satisfaction is evaluating performance without paying attention to customer satisfaction.

Trust. Trust based on Deshpande and Zaltman (1993, as cited by Little and Marandi, 2003) was willingness to rely on exchange partners and one of them was to believe in trust towards the partner. Trust refers to consumer expectation that service provider is trustworthy and dependable to fulfil their promise (Sirdeshmukh et al., 2002). Barnes, (2001) stated that trust involved individual willingness to conduct certain action because he or she believes his/ her partners would grant his/her wishes and expectation an individual generally has that words, promiste or other people's statement can be trusted. Based on the ideas, it is concluded that trust is to believe that partners are dependable and will fulfil their promises.

Increasing trust in tourist destination is frequently quoted as vital element for suceesful relationship and as the effect, results in increasing quality of relationship to destination. (Keller and Kotler, 2009) explained trust was developed by creating strong bond with customers. Trust showed that each group in developing partnership believes in each other, fulfills promise and develops mutual relationship (Jesri et al., 2013). Based on the elaboration, trust enables the bond between customers and tourist destination.

In marketing, trust has two components, self-trust and reliability which are significantly influenced by customer satisfaction (Morgan and Hunt, 1994). Customer trust signifies customer intention to depend on partners in vulnerable situation (Coleman and Coleman, 1994). Dabholkar and Sheng, (2012) believed that service providers gained customer trust when the customers believe goods and service the providers sell benefit them. In conclusion, customer satisfaction affects trust.

Behavioral intention. Fishbein and Ajzen (1975) also stated that behavioral intention always referred to future behavior and was often correlated to overall behavior. Fishbein and Ajzen (1975) described the intention to behave/ take action as function of (a) evaluative belief towards products of tourism, (b) social factors that likely gave a set of normative belief for tourists, and (c) situational factors that could be anticipated during vacation plans or commitment. Behavioral intention according to Peter and Olson (1999) was proposition that connected an individual to future actions. (Blackwell et al., 2001) explained behavioral intention as subjective judgment about the behavior in the future. Intention to behave was defined as planned or anticipated future behavior of individuals (Oliver and Swan, 1989). Based on those statements, it was concluded that behavioral intention was intention to take actions in the future after consumption or purchasing. Dimensions of behavioral intention frequently used in scientific studies are:

Table 1 – Dimensions of Behavioral Intention

No.	Researcher/Year	Dimension of Behavioral Intention
1	Anderson et al., (1994)	1).repurchase intentions, 2). word-of-mouth intentions, and 3). willingness to pay more.
2	Zeithaml et al. (1996)	1) say positive things about them, (2) recommend them to other customers, (3) remain loyal to them (i.e. repurchase from them), (4) spend more with them, and (5) pay price premiums.
3	Bloemer et al., (1998)	Consumer complaint behaviour, price sensitivity and word-of-mouth.
4	Oliver, (1999)	Repurchase intentions and recommend destinations.
5.	Chen and Tsai (2007)	1). Revisit the destination in the future and 2).recommend destinations
6	Kuenzel et al., (2009)	Intention to revisit (intention to purchase / loyalitas) and word-of-mouth (WOM) recommendation.
7	Canny (2013)	1). Revisit, 2) say positif things and 2) recommend destinations.

Source: secondary data, 2016.

RESEARCH METHODS

Research model. The manager of the tourist village was interested in finding out how destination image and satisfaction may result in traveler's trust and eventually traveler's behavioral intention in the future. The bases were the previous conducted by Chen and Phou (2013), Prayag et al., (2013), Osman and Sentosa (2013), Susyarini et al., (2014), Banki et al., (2014), Canny (2013), Tang (2014), Tavitiyaman and Qu, (2013), and Lo et al., (2013), among others.

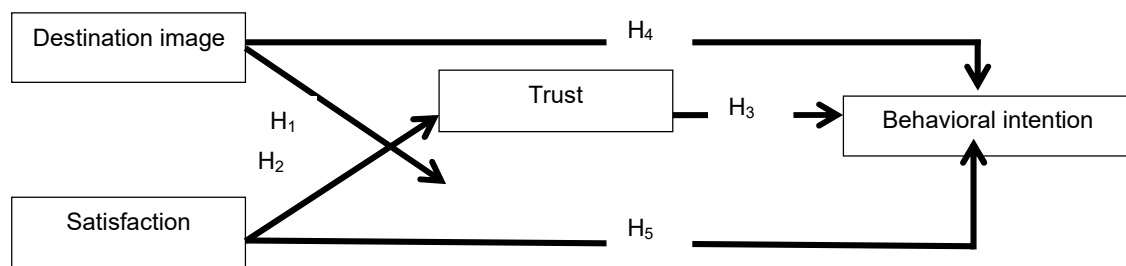


Figure 1 – Hypothesis Model Hipotesis

HYPOTHESES

Relationship between destination image and trust. Schiffman and Kanuk (2008) stated that positive brand image was related to consumer loyalty, consumer trust about positive brand and willingness to search for the brand. In their conceptual study, Chen and Phou (2013) revealed the correlation between destination image and trust. Based on the theory, the first hypothesis of the study was:

H1: Destination image has influence towards trust.

Relationship between satisfaction and trust. Osman and Sentosa (2013)'s study provided empirical evidence related to the positive influence of satisfaction towards trust. It revealed the positive correlation between customer satisfaction and trust. Another study conducted by Chen and Phou (2013) corroborated to Osman and Sentosa (2013) that satisfaction influenced trust. Therefore, the second hypothesis was:

H2: Satisfaction has influence towards trust.

Relationship between trust and behavioral intention. Trust was generally perceived as the key of relationship marketing success (Little and Marandi, 2003). Callaghan et al., (1995) and Morgan and Hunt, (1994) explained that relationship marketing was multidimensi that consisted of six components namely trust, commitment, shared value, empathy and mutual undersanding. Trust directed to successful relationship that improved communication, cooperation, and buying intention as well as encouraged buying attention when complexity and risk could be eliminated (Morgan and Hunt, 1994). Based on the elaboration, the third hypothesis was:

H3: Trust has influence towards behavioral intention.

Relationship between destination image and behavioral intention. Numerous studies had analyzed the relationship between destination image and behavioral intention; one of them was a study conducted by Susyarini et al. (2014). The findings showed that destination image influenced behavioral intention. Hasil yang berbeda ditunjukkan oleh hasil penelitian Banki et al. (2014) showed different finding that cognitive destination image did not influence behavioral intention but affective destination image had positive, direct influence towards behavioral intention. Therefore, the fourth hypothesis was:

H4: Destination image has influence towards behavioral intention.

Relationship between satisfaction and behavioral intention. The was significant correlation between satisfaction towards tourist destination and traveler's intention in the future (Canny, 2013). In addition, Tang, (2014) described that satisfaction had positive correlation towards intention to behave/ take action (re-evaluation and recommendation). Prayag et al. (2013) also postulated that satisfaction had positive correlation to behavioral intention. Other previous studies that supported the study were one conducted by Banki et al., 2014; Tavitiyaman and Qu, 2013; Manhas and Ramjit 2013; Susyarini et al., 2014; Lo et al., 2013 and Chou, 2013). Based on the findings of the previous studies, the fifth hypothesis was:

H5: Satisfaction has influence towards behavioral intention.

METHODOLOGY OF RESEARCH

Survey instrument. There were 4 (four) variables in the study, destination image, satisfaction, trust and behavioral intention. 24 (twenty-four) items were observed to measure the exogenous, independent variables. Destination image, satisfaction and trust consisted of 6 items each. The endogenous variable, behavioral intention, consisted of 6 items. The study also used the 5-point Likert scale (1-strongly agree, 2-agree, 3-meutral, 4-disagree and 5-strongly disagree). The demographics variables questioned are gender, age, status, and education background of the respondents.

Sample. The targeted population was local or domestic travelers visiting the tourist village located in Sleman, Yogyakarta, Indonesia. The sampling technique used was accidental sampling. The characteristics of the samples were (1) they were between 18 and

35 years old; (2) they stayed there for at least one day; (3) they were first-time visitors and (4) they decided to visit the place themselves. The total number of samples was 155.

Data analysis. Inferential statistics, GSCA (Generalized Structured Component Analysis), was used to test the influence of destination image and satisfaction towards trust and behavioral intention. Hwang et al., (2010) stated that GSCA evaluated entire aspects of a model so that one understood how appropriate a model was and then was able to compare the model with other alternatives. GSCA may also be applicable for complex indicators, either reflective or formative indicators. GSCA functioned to obtain structural model for analysis. There are three types of model evaluation based on GSCA namely evaluation of the measurement model, structural model evaluation, and the evaluation of the overall model. SPSS version 20 for Windows was also used to facilitate the data analysis.

FINDINGS OF RESEARCH

Profiles of the respondents. 54.84% of the respondents were male while the remaining 45.16% of them were female. 41.93 % of the respondents were between 18 and 22 years old, 30.97% was between 23 and 27 years old, 16.13% was between 28 and 32 years old and 10.97% was between 33 and 35 years old.

In terms of level of education, 58.06% of them were high school graduate, 27.74% was university graduate, 5.81% had master's degree, 5.16% graduated from three-year diploma program and 3.23% was junior high school graduate. 42.58% of the respondents were university students, 17.41% worked in private institutions, 8.39% was government officers, police officers or worked in the army, 8.38% was non-permamanent workers, 7.74% worked in the government institutes, 5.81% owned business, 3.87% was teachers, 3.23% was students and 1.29% was housewives. 1.3% of the respondents had other occupation.

Construct validity, dimensionality and reliability. Based on the analysis, the loading factors of all of the indicators that measured the 4 variables (destination image, satisfaction, trust, and behavioral intention) were higher than 0.6. Thus, all of the indicators were valid.

The discriminant validity showed that the AVE roots of each of the variables were higher than the correlational coefficient between the variables. Therefore, the discriminant validity that measured all the four variables had been fulfilled.

The construct validity showed that AVE scores of the variables (destination image, satisfaction, trust, and behavioral intention) were higher than 0.50, the cut-off value. Based on the AVE scores, the indicators were reliable. The cronbach's alpha of the variables (destination image, satisfaction, trust, and behavioral intention) was higher than 0.60, the cut-off value and therefore, based on the cronbach's alpha, all of the indicators were reliable.

Model analysis. The first model was presented directly from destination image to trust, satisfaction to trust, destination image to behavioral intention, satisfaction to behavioral intention and trust to behavioral intention. The first stage of testing using GSCA was the Goodness of Fit Model. Goodness of fit was used to find out whether the construct being developed had been fit or not. There are several goodness of fit index in GSCA analysis, Fit, AFit, GFI, and SRMR. Using GFI, the criteria were if $GFI \geq$ cut off (0.90) the model had good fit, but when GFI was between 0.8 and 0.9 the model had marginal fit. Furthermore, FIT showed how far exogenous variables explained the endogenous variables.

Based on the goodness-of-fit, it was found out that the GFI global optimization index was 0.986. It showed $GFI > 0.9$. Thus, the overall model of GSCA towards behavioral intention had good fit. The Fit of 0.701 showed that destination image, satisfaction, and trust had 70.1% influenced towards behavioral intention, while other variables outside the study had 29.9% influences.

Furthermore, criterion-based hypothesis-testing showed that when critical ratio (CR) \geq t-table ($t=2.00$, $\alpha = 5\%$), the exogenous variable had significant influence towards the endogenous variables.

Table 2 showed out of 5 hypotheses, 3 hypotheses were accepted and 2 hypotheses were rejected. The findings were as follow: (1) Based on GSCA analysis, the estimated value was 0.257 and the CR value was $2.78 *$ (asterisk). It meant $CR > t\text{-table}$ ($t = 2.00$, $\alpha =$

5%). Therefore, H1 was accepted due to the empirical findings. It implied that destination image had significant effect towards trust (H1).

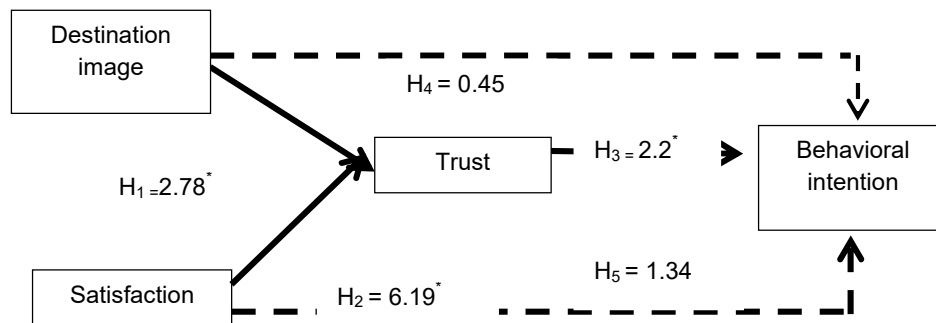
Table 2 – Results of Hypothesis-Testing on Direct Effect

Exogenous	Endogenous	Estimation	SE	CR	Claim	
					Accepted	Rejected
Destination image	Trust	0.257	0.092	2.78*	Accepted	
Satisfaction	Trust	0.486	0.078	6.19*	Accepted	
Trust	Behavioral Intention	0.2	0.091	2.2*	Accepted	
Destination image	Behavioral Intention	0.031	0.069	0.45		Rejected
Satisfaction	Behavioral Intention	0.132	0.098	1.34		Rejected

Source: Primary Data, 2016.

(2) The estimated value was 0.486 and CR value was 6.19 * (asterisk). It meant $CR > t$ -table ($t = 2:00$, $\alpha = 5\%$). Therefore, H2 was accepted. In other words, satisfaction had significant influence towards trust (H2). (3) The estimated value was 0.2 and the CR value was 2.2 * (asterisk). It meant $CR > t$ -table ($t = 2:00$, $\alpha = 5\%$). Therefore, H3 was accepted. In other words, trusts had significant influence towards behavioral intention (H3).

(4) The estimated value was 0.031 and CR was 0.45. It meant $CR < t$ -table ($t = 2:00$, $\alpha = 5\%$). H4 was rejected or could not be accepted. It implied that destination image did not have significant influence towards behavioral intention (H4). (5) The estimated value was 0.132 and CR was 1.34 (asterisk). It meant $CR < t$ -table ($t = 2:00$, $\alpha = 5\%$). H5 was rejected or could not be accepted. Therefore, satisfaction did not have significant influence towards behavioral intention (H5). In conclusion, the two rejected hypotheses were hypothesis 4 and 5, destination image did not have significant influence towards satisfaction (H4) and satisfaction did not have significant influence towards behavioral intention (H5). The findings of the study were described in the following charts.



Note: * = significant influence

Figure 2 – Findings of the Study

The second was trust became the mediating variable between customer experience and behavioral intention (see Tabel 6). Based on the analysis of the mediating variable shown in Table, there was not any correlation involving the mediating variable. The result of the analysis was as follow:

Table 3 – Results of Mediating Variable Testing

No.	Variable			Estimation	SE	CR
	Exogenous	Mediating 1	Endogenous			
1.	X ₁	Y ₁	Y ₂	0.089	0.089	0.996
2.	X ₂	Y ₁	Y ₂	0.097	0.047	2.073*

Source: Primary Data, 2016

Note: * = Significant

Table 3 showed that destination image did not have indirect correlation to behavioral intention. Satisfaction had indirect correlation to behavioral intention, through trust.

DISCUSSION OF RESULTS

The finding showed that the destination image had significant influence towards trust. It supported the findings of Chen and Phou (2013)'s study that there was correlation between destination image and trust. Schiffman and Kanuk (2008) stated that positive brand image was related to customer loyalty, consumer trust regarding the positive brand value, and willingness to look for the brand.

The study also found that satisfaction had significant influence towards trust. It corroborated to Osman and Sentosa (2013)'s study that there was positive correlation between customer satisfaction and trust. Another study, one conducted by Chen and Phou (2013), also showed that satisfaction influenced trust. The findings of the study was at the opposite of Nili et al., (2013)'s study, which stated that satisfaction had no effect towards trust.

The study also revealed that trust had significant influence towards behavior intention meaning that when the travelers had good impression towards the tourist village, they would take positive action such as behavioral intention. There has yet been any study in tourism that analyzed the influence of trust towards behavioral intention in the future. Trust resulted in successful relationship that enhanced communication, cooperation, purchase intention and trust may trigger an increase in the purchase as long as complexity and risk of purchasing were reduced (Morgan and Hunt, 1994).

Other finding was destination image had no significant influence towards behavioral intention. It supported the previous studies conducted by Banki et al., (2014), Jin et al., (2013). Banki et al., (2014) that cognitive destination image did not influence behavioral intention but affective destination image had direct influence towards behavioral intentions. The finding was not in line with the previous studies conducted by Susyarini et al., and (2014), Moon et al., (2013). Moon et al., (2013) stated that the destination image was positively associated to behavioral intentions of consumers. As an addition, Susyarini et al., (2014) stated that destination image influenced behavioral intention.

Furthermore, the study found that satisfaction did not have significant influence towards behavioral intention. It also described that satisfaction had indirect relationship to behavioral intention of behaving through trusts. They were different from the findings of Canny (2013)'s study that there was significant correlation between satisfaction and behavioral intentions in the future. Tang (2014) showed satisfaction had positive correlation to behavioral intention (in revisiting or giving recommendation). Prayag et al., (2013) also postulated that satisfaction had positive correlation to behavioral intention. The previous studies of which findings were different from the study were Banki et al., (2014), Tavitiyaman and Qu (2013), Manhas and Ramjit (2013), Susyarini et al., (2014), Lo (2012), and Chou (2013)'s studies. They showed that satisfaction did not have influence to behavioral intention in the future. Keaveney (1995) and Reichheld (1993) explained the phenomenon by explaining that certain customers would switch products and buy another product although they were satisfied with the products they had bought. Garcia et al., (2012) stated that even though travelers were satisfied and had no regrets about their choice of tourist destination, they may switch to other tourist destination due to variation.

CONCLUSION

The main objective of the study is to describe the influence of destination image and satisfaction towards trust and behavioral intention in the future in the rural tourism industry. Based on the review of previous studies in tourism, there has yet been any study that examines the relationship between the trust and behavioral intention. Preliminary studies found the influence as well as no influence of destination image towards trust, satisfaction towards trust, destination image towards behavioral intention and satisfaction towards

behavioral intention. The model was developed to explain the influence of destination image towards trust, satisfaction towards trust, trust towards behavioral intention, destination image towards behavioral intention and satisfaction towards behavioral intention. To achieve the research objective, GSCA was adopted for data analysis.

Then, the mediation is introduced in the model where trust becomes mediating variable in destination image and behavioral intention as well as satisfaction towards behavioral intention. Theoretically, it is not easy to justify the superiority of the model; to solve the issue, empirical testing was conducted. The study proposes empirical model to evaluate and make sure that there is indirect relationship between destination image and behavioral intention as well as satisfaction and behavioral intention where trust becomes mediating variable.

Based on the findings, there are direct and indirect correlation between variables. The first finding is destination image has influenced towards trust. Second, satisfaction has significant influence towards trust. Third, trust has significant influence towards behavioral intention. Fourth, destination image does not have any significant influence towards behavioral intention. Fifth, satisfaction does not have significant influence towards behavioral intention. Based on the findings, it is revealed that trust is an important factor affecting behavioral intention. The conclusion shows there is destination image, satisfaction, and trust only have direct influence towards behavioral intentions. Trust has a role as a mediator in the correlation between the satisfaction and behavioral intention or satisfaction has indirect relationship towards behavioral intention.

Practical implications. The practical implications is to increase the trust of travelers about the tourist village. The study revealed that trust had important influence towards behavioral intention in the future. Second, the tourist village should carry out relationship marketing and gains trust from the visitors. The future of the tourist village depends on ability of the management to gain customer's trust. Studies have shown that trust results in behavioral intention and is needed to reduce risk. Trust is fundamental element for the success of relationship marketing. Behavioral intention in the future was intention to say positive things about them, revisit, give recommendation, and alternative.

Research limitations and directions for future research. The researchers describe the limitation of the study as reference for future researcher. First, the study is cross sectional study that has limitation to analyze dynamics of the variables involved from time to time. Trust, as variable, has long-term effect while satisfaction and destination image are dynamics. Therefore, longitudinal study can give stronger conclusion. Second, satisfaction is measured using single item (performance).

To enhance their contribution, it is expected that future researchers use longitudinal approach and invite participation of the management of the tourist village in order to get more comprehensive findings. As an addition, further studies should not use single item of measurement. Further studies should widen the setting of the study and involve various types of tourist village as their objects. At last, domestic travelers visiting the village for more than one time should be used as unit of analysis.

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DOI <https://doi.org/10.18551/rjoas.2017-01.16>

THE IMPACT OF WORK MOTIVATION AND COMPETENCE ON EMPLOYEE PERFORMANCE THROUGH SERVICE QUALITY IN ADMINISTRATIVE STAFF OF UNIVERSITAS NEGERI JAKARTA, INDONESIA

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ABSTRACT

This study aims to examine the influence of employee motivation and competence on the performance and also to assess the effect of employee motivation and competence towards its performance through service quality variables. The sample used in this study was 120 employees spread across work units at University of Negeri Jakarta. The method used in this research was Structural Equation Model (SEM) with Lisrel analysis tool software. The research proves that 3 hypotheses from 5 hypotheses were accepted, namely, employee competence affected service quality, employee motivation influenced employee performance, and service quality affected employee performance. While on the other hand, the two hypotheses were rejected; employee motivation could not influence service quality and employee competence was not able to affect work performance.

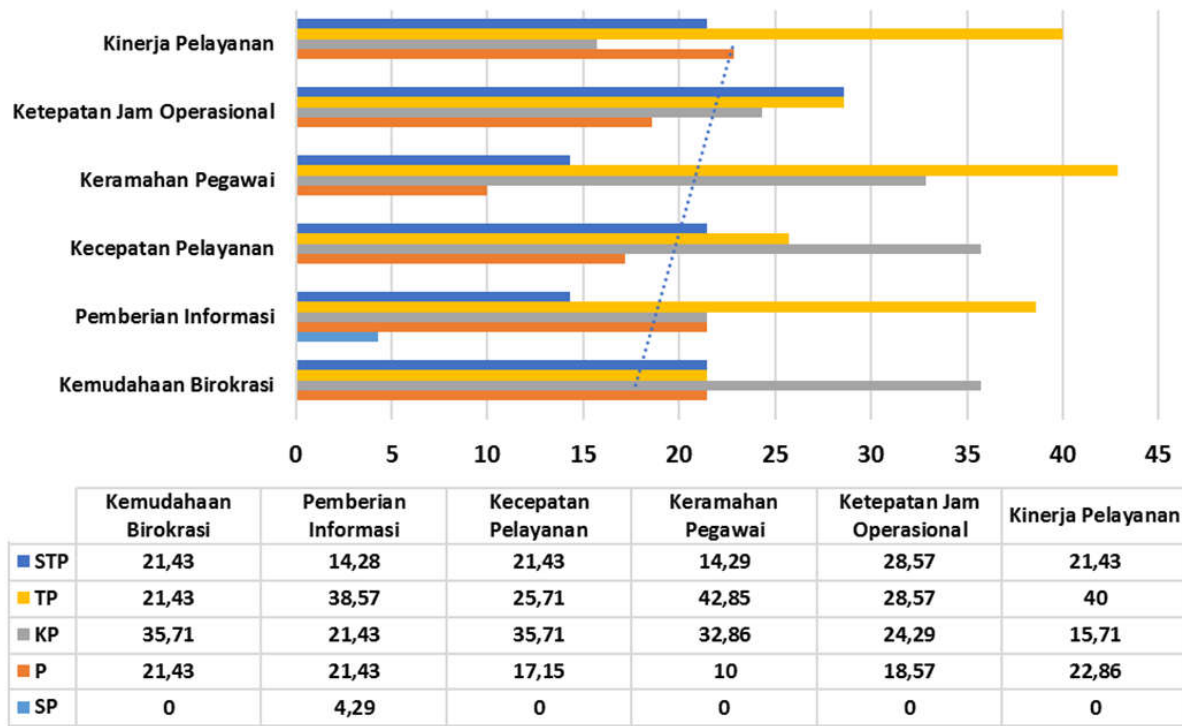
KEY WORDS

Work motivation, employee competence, quality service, employee performance.

A civil servant is a government personnel who is oriented in providing services to the public in accordance with their field of duty. Good employee competence is needed in order to establish a good service. The higher the competence of the employee, the higher the performance of the organization and vice versa. Employee competence is very important due to organizational performance improvement. In a government sector, qualified personnel will improve the quality of the community service, so that, a government seems to always continue improving the quality of its public service and provides a decent life for its people (Abomaleh and Zahari, 2014).

The quality of the employees in public organization like in a governance system is reflected by the competence of its civil servants who have the duty to manage the organization. A competent employee will enhance the quality of the community service and will affect the government to run better. Employee competency gives a significant positive effect on employee performance (Arifin, 2015). What is meant by employee performance in here include human resources which are developed through competencies improvement and has a positive and significant impact towards employee performance. The enhancement of employee competence is carried out by assessing the human resources management, particularly about the labor issues which are arranged in the order of the functions. To be effective and efficient in achieving the organization's goals, the demand to acquire, develop, and retain the qualified resources is increasingly urgent in accordance with the dynamics of the environment and the ever-changing technology. The human resources strategy also involves the competence problem like in technical ability, conceptual issue, and public relations. The impact of employee competency in employee performance can be seen from the level of competence which has practical implications for human resources planning. It also can be seen from the illustration that knowledge and skills competency tend to be relatively more real and exist on the surface, this is one of the characteristics of the employee.

Employee competence could affect service quality and employee performance. In this case, service quality is still a today's issue for Universitas Negeri Jakarta. Furthermore, the preliminary survey shows that the service satisfaction index in 2015 is still relatively low in which it can be seen in Figure 1.



Notes:

- Kinerja Pelayanan >> Service Performance
- Ketepatan Jam >> The Accuracy of Operating Hours
- Keramahan >> Friendliness
- Kecepatan >> Speed
- Kemudahan Birokrasi >> Bureaucracy

Figure 1 – Employee Service Satisfaction Index

Figure 1 shows that the customer satisfaction index of service quality in the administrative staff of Universitas Negeri Jakarta is still relatively low. In details, from 6 indicators (bureaucracy, speed, friendliness, the accuracy of operating hours, information provision, and service performance), only 1 indicator which is the information provision that received a very satisfied rating where it only rose by 4,29%. The data shows that the average service value provided is at the level of discontent. The level of customer dissatisfaction is able to influence the employee performance so that it becomes a problem by the organization in the future.

Service quality gives an effect to measure the employee performance. The lower the quality of its service, the lower the employee performance measured. The evaluation of employee performance is measured by the output of the employee both in quantity-quality and community satisfaction perception. In accordance with that, service quality and employee performance can be motivated to the maximum in order to achieve better results. Another thing is that service quality and employee performance can be affected by work motivation. The more motivated employees to work, the better the service quality delivered and the better the employee performance measured. The facts show that a good employee of an organization will perform its duties and responsibilities well (Azar and Shafighi, 2013). Meanwhile, according to Iqbal et al., (2012) employees' motivation and competence will collectively participate in the employee performance with a variety of difficult assignments given to them. Psychologically, motivation is one of the most important terms for most managers who want maximum output and productivity (Zameer et al., 2014).

Employee competence and motivation in a governance system become a very important aspect, with a good competence, the service quality will be improved and the employee performance will be increased as well. Employee competence, one of which, is strongly influenced by educational background. This statement is in line with what is felt by

the current government as stated by Mr. Yudhi Crisnandi, the Minister of State Apparatus Empowerment and Bureaucratic Reform on *Harian Kompas*, February 16th, 2016 that the government has a target to increase the number of highly educated state officials in order to improve the quality and professionalism of the service apparatus. The data presented in Table 1 demonstrate many variables which are targeted to be achieved by the government.

Table 1 – The Targeted Education Level of Civil Servant

No	Education	Total Current (%)	Upcoming Target (%)
1	Undergraduate Degree (S1)	42	50
2	Postgraduate Degree (S2)	5	10
3	Doctoral Degree (S3)	1,1	-

Source: *Harian Kompas*, February 2016.

Employee competency is not the only factor which affects the service quality and performance; there is another factor which is the work motivation. Motivation will lead to the fact that employees will perform their duties and responsibilities seriously (Azar and Shafighi, 2013). This means that employees who have a high enough intelligence could fail due to a lack of motivation. Motivation is the concept of events and phenomena associated with the people in a work context. In this research, the work motivation observed is the motivation to come to work through the employee attendance index. The following Figure 2 shows the employee attendance index in 2016 which is still not maximal.

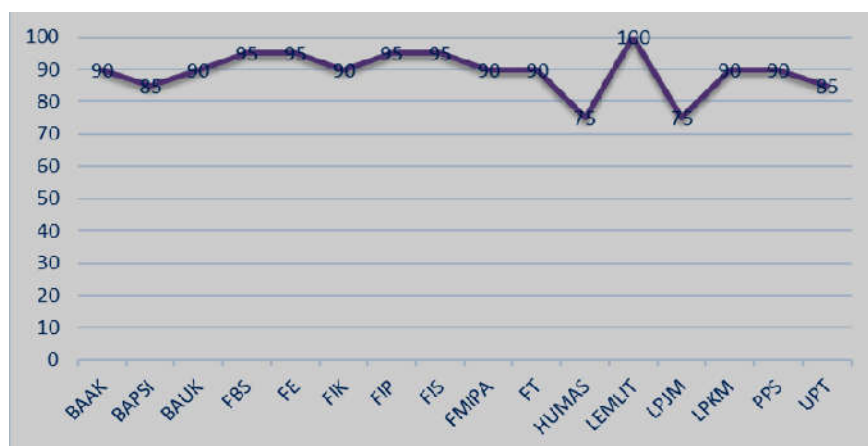


Figure 2 – Employee Attendance Index

The above data show that there is still an employee attendance index by 75% while the minimum attendance index set by the organization is by 90%. The presence of an employee is one of the work motivations in which it will directly affect the employee performance. Employee performance is very important for the company in order to survive and be successful. Also, employee behavior towards customers has a direct impact on the customer's impression of the quality of services provided (Abomaleh and Zahari, 2014).

THEORETICAL REVIEW

Motivation is the most important thing for any public or private sector organizations. This is supported by the statement that motivation plays an important role in the success of any organization either in the public or private sector (Chintaloo and Mahadeo, 2013). According to Chaudhary and Sharma (2012), basically, motivation comes from the word «motive». «Motive» means the needs, wants, and desires of the people. So, employee motivation means the process by which the organization inspires employee in the form of rewards, bonuses, and others to achieve organizational goals. The theory of motivation developed by Abraham H. Maslow in Hariandja (2007) was essentially revolves around the

notion that humans have five levels or hierarchy of needs, namely: (1) physiological needs, (2) safety needs, (3) social needs, (4) esteem needs, and (5) self-actualization.

Competence includes various technical and non-technical factors, personality and behavior, soft skills and hard skills. Competence is widely used as the aspects to recruiting employees for many organizations. According to Spencer in Sutoto (2004), he defined competence as the underlying characteristic of an individual that is causally related to criterion referenced effective and or superior performance in a job situation.

Service quality can be determined by comparing the perceptions of consumers for the services that they obviously received the services that they expected to get through the attributes of an enterprise service. If the received service or perceived service is what they have expected, then the perceived service quality is good and satisfactory. Moreover, if the received service is exceeding the consumers' expectation, then the perceived service is superb. While conversely, if the received service is lower than expected, then the perceived service is classified as a poor quality of service. Kotler (2002) explained that the definition of service is any action or activity that can be offered by one party to another, which is essentially intangible and does not result in any ownership; its production may be linked or not linked to a physical product. A service is the producer behavior carried out to meet consumer needs and desires in order to achieve customer satisfaction. Kotler also said that behavior could be occurred during, before or after the transaction

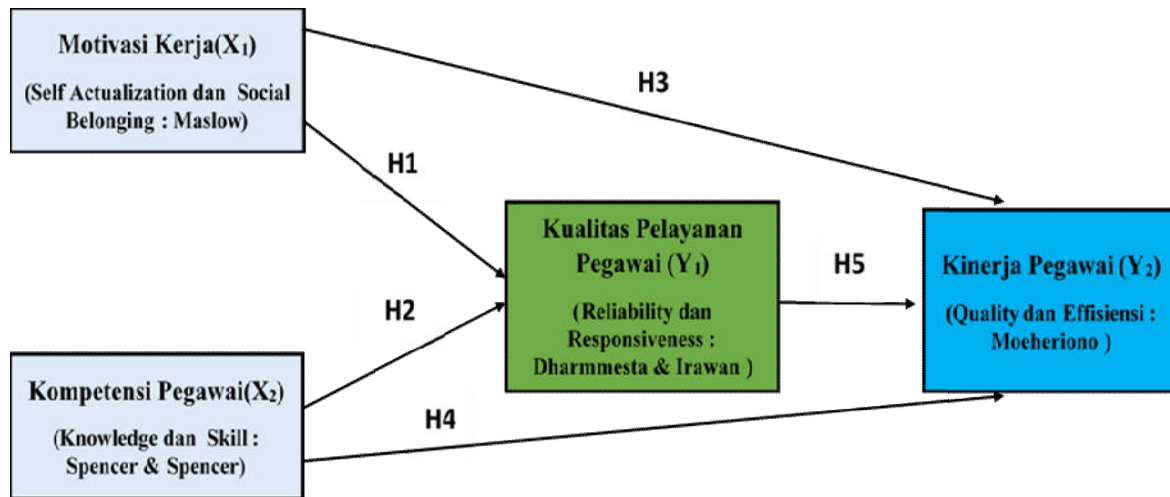
Performance comes from the word "job performance" or "actual performance", means that this is the actual performance or achievement attained by a person. The performance also can be described as the result of the quality and quantity of work accomplished by an employee in performing its functions in accordance with the responsibilities given to him. Performance is the result or output of a process (Nurlaila, 2010). Performance is also illustrated as an overview of the level of achievement in a program, policy or activity in order to realize the goals, objectives, vision and mission of the organization through the strategic planning of an organization (Moehariono, 2012).

Several previous types of research have linked the influence of motivation and competence to employee performance and service quality levels in an organization. The research was either conducted in Indonesia or outside Indonesia in which the author here tries to collect some previous research that was relevant and related to this research. By that, this can be seen in Table 2 as follows:

Table 2 – Previous Research

No	Author Name, Year	Research Title	Research Variable	Conclusion
1	Muhammad Arifin, 2015	The Influence of Competence, Motivation, and Organisational Culture to High School Teacher Job Satisfaction and Performance	Competence, Motivation, organizational culture, satisfaction, and performance	Competence and job satisfaction have a positive and significant impact on teacher performance and organizational culture but not on job satisfaction.
2	Hashim Zameer, 2014	The Impact of the Motivation on the Employee's Performance in Beverage Industry of Pakistan	Motivation and Performance	Motivation plays an important role on the performance of employees in the beverage industry of Pakistan
3	Ukaejiofo Rex Uzonna, 2013	Impact of motivation on employees' performance: A case study of CreditWest Bank Cyprus	Motivation and Employee Performance	Employee motivation related to employee performance
4	Muhammad Bilal Ahmad, 2012	Impact of employee motivation on customer satisfaction: study Of airline industry in Pakistan	Employee motivation and Customer Satisfaction	Employee motivation gives a positive and significant impact on customer satisfaction

Then, the conceptual framework of the research was built based on the previous theory and research which were relevant to this research. The conceptual framework of the research is presented in this following Figure 3:



Notes:

- *Motivasi >> Work Motivation*
- *Kompetensi >> Employee Competence*
- *Kualitas >> Service Quality*
- *Kinerja >> Employee Performance*

Figure 3 – Research Framework

Based on the theory, previous research, and research framework, the hypothesis proposed in this study are: work motivation is affected service quality positively; employee competence gives positive effect on service quality; work motivation delivers a positive influence on employee performance; employee competence positively affected employee performance; service quality has a positive impact on employee performance.

RESEARCH METHODS

The approach of this research was conducted by using a description method in which will examine the status of human groups, an object, a set of conditions, a system of thought, or a class of events in present. Descriptive research is intended to study the problems in a society as well as the applicable procedure in a community and specific situations including relationships, activities, attitudes, views, on-going processes, and phenomenon effects. This research was also an explanatory research, investigators tried to determine the relationship between variables based on the data obtained from the determined sample through the observation unit survey. The research variables were measured by using the development instruments which were used in previous studies, making it possible to improve the measurement validity and reliability. The measurement of each variable was carried out by using Likert scale of 1 to 5 with variables operationalization on Table 3.

The population is the generalization region which consists of objects or subjects that have certain qualities and characteristics defined by the researchers to learn and then to draw a conclusion (Sugiyono, 2011). Moreover, according to Sumarsono (2005), a population is a group of subjects or objects that have different traits or characteristics from other subjects or objects group. The population chosen in this study was the administrative staff of Universitas Negeri Jakarta and spread over in 11 units with the total of 456 employees. Next, Sugiyono (2011) stated that a quota sampling technique is a technique which is used to determine the sample of the population that has certain characteristics to the desired total quota. In this study, the number of sampling had been set at 120 sampling in which this was taken proportionally from each unit. The data distribution of the population and the sample is presented in Table 4.

The data analysis was performed by using Structural Equation Model (SEM). The main reason of the use of SEM in this research was the ability to analyze the relationship pattern

between latent constructs and its indicators, latent constructs with one another, and to analyze the measurement error. SEM allows the researcher to do an analysis in multiple dependent and independent variables directly (Hair *et.al.*, 2006). In this study, the software used to support the study was Lisrel 8.8.

Table 3 – Operationalization of Research Variables

Variable	Dimension	Indicator		Measure Scale
Work Motivation (X1)	<i>Self-Actualization</i> (Maslow Theory)	1	The desire to go forward	Ordinal
		2	Self-achievement potential	Ordinal
		3	Creative nature	Ordinal
	<i>Social needs</i> (Maslow Theory)	4	Relationships with co-workers	Ordinal
		5	Relationship with supervisor	Ordinal
		6	Teamwork	Ordinal
Employee Competence (X2)	<i>Knowledge</i> (Spencer and Spencer)	7	An understanding about duties and responsibilities	Ordinal
		8	The knowledge of procedures and technical services	Ordinal
		9	The knowledge about regulations	Ordinal
	<i>Skills</i> (Spencer and Spencer)	10	Administrative skills	Ordinal
		11	Technical skills	Ordinal
		12	Social skills	Ordinal
Service Quality (Y1)	<i>Reliability</i> (Dharmmesta and Irawan)	13	Employee's reliability in providing information	Ordinal
		14	Employee's reliability in technical services	Ordinal
		15	Employee's reliability in answering customer questions	Ordinal
	<i>Responsiveness</i> (Dharmmesta and Irawan)	16	Employee's responses to complaints	Ordinal
		17	Employee's responses to suggestions	Ordinal
		18	Employee's responses to the queue	Ordinal
Employee Performance (Y2)	<i>Quality</i> (Moeheriono)	19	The quality of the work	Ordinal
		20	The frequency of making mistakes	Ordinal
		21	The ability to work under pressure	Ordinal
	<i>Efficiency</i> (Moeheriono)	22	The efficiency of labor costs	Ordinal
		23	The dexterity of work	Ordinal
		24	The speed of works	Ordinal

Table 4 – The Distribution of Research Population and Sample

Observation Unit	Population	Sample	% Total Population
Administration Bureau of Academic Affairs and Cooperation	20	5	1,10
BAPSI	14	4	0,87
Administration Bureau of General Affairs and Human Resources	114	30	6,58
Faculty of Language and Art	25	6	1,31
Faculty of Economics	15	4	0,87
Faculty of Sport Sciences	19	5	1,10
Faculty of Political Sciences	32	8	1,75
Faculty of Social Sciences	17	5	1,10
Faculty of Mathematics and Natural Sciences	29	8	1,75
Faculty of Engineering	38	10	2,20
Technical Implementation Unit and others	133	35	7,68
Total Population	456	120	26,31

Source: Universitas Negeri Jakarta, processed by authors in 2016.

RESULTS AND DISCUSSION

The test of the dimensionality of a construct was performed by using a confirmatory factor analysis. In general, before making the structural model analysis, the first thing to do was establishing the measurement model in order to test the validity and reliability of the indicators by performing Confirmatory Factor Analysis (Latan, 2013). After the validity and reliability test was implemented, the suitability test of the model must be conducted. The suitability test results is presented in this following table:

Table 5 – Goodness-of-fit Test Results

Fit Measure	Good Fit	Acceptable Fit	Score Research	Result
χ^2	$0 \leq \chi^2 \leq 2df$	$2df \leq \chi^2 \leq 3df$	258,99	Good Fit
P value	$.05 < p \leq 1.00$	$.01 \leq p \leq .05$	0,272	Not Fit
RMSEA	$0 \leq RMSEA \leq .05$	$.05 \leq RMSEA \leq .08$	0,021	Good Fit
NFI	$.95 \leq NFI \leq 1.00$	$.90 \leq NFI \leq .95$	0,94	Acceptable Fit
NNFI	$.97 \leq NNFI \leq 1.00$	$.95 \leq NNFI \leq .97$	0,99	Good Fit
CFI	$.97 \leq CFI \leq 1.00$	$.95 \leq CFI \leq .97$	0,99	Good Fit
GFI	$.95 \leq GFI \leq 1.00$	$.90 \leq GFI \leq .95$	0,92	Acceptable Fit
AGFI	$.90 \leq AGFI \leq 1.00$	$.85 \leq AGFI \leq .90$	0,86	Acceptable Fit

Source: Data analysis by using Lisrel (2016).

The data of goodness of fit statistics above shows that the NFI, NNFI, CFI, GFI are greater than 0,90 while RMSEA is more or less than 0,08. This means that the overall model is in good level (good fit). Meanwhile, AGFI is at $0,80 \leq GFI \leq 0,90$, this shows that the indicators are in an acceptable fit. In the other hand, the p-value which is by 0,0272 shortly shows that it is less matched. From the combination of those various matched measurements, generally, it can be concluded that the overall measurement is a good fit. Table 5.10 above shows that all the testing criteria show such good results. The test is intended to generate a good confirmation on the dimensions and causality between factors so that we can conclude that the overall model is acceptable. From the results above, we can have estimated the model estimation as follows:

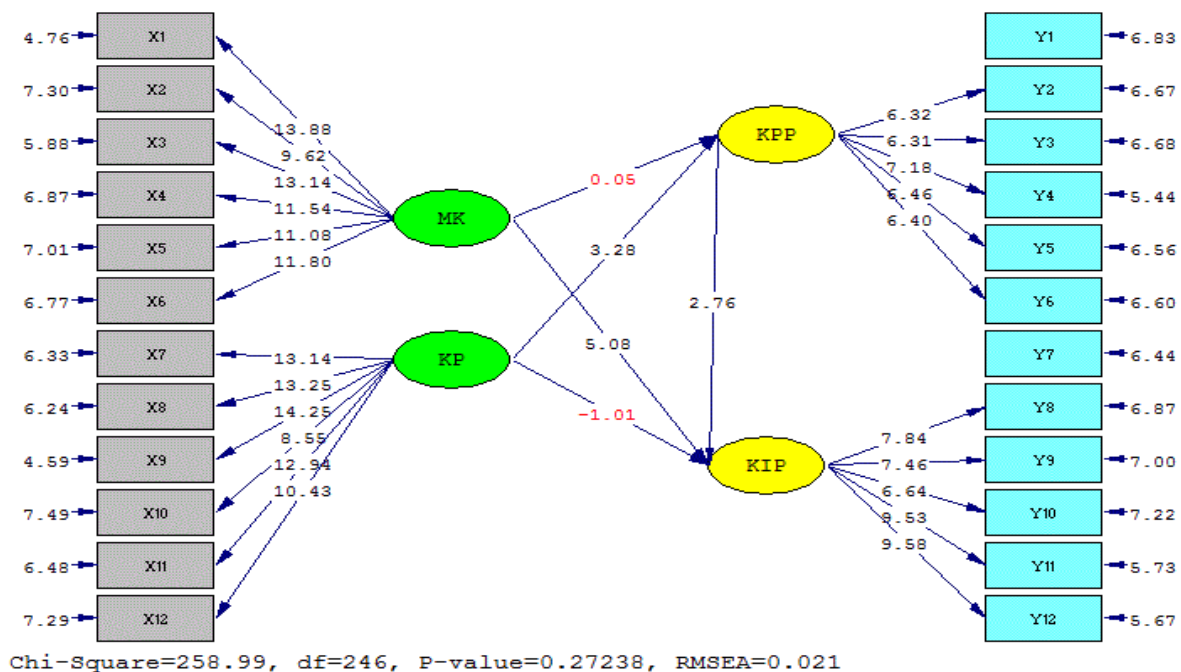


Figure 4 – T-value Model Diagram

In Figure 4, the coefficient value of the constructs is obtained and the loading factor, as well as the t-value, has been qualified. In the goodness-of-fit model above, most of the indicators that are likely to fit the model have reached the value of a good fit. The test shows that the value of the construct has met the required value in which the significance test can be said to be significant if the t-count is larger than t-table. The t-value used in this study was 1,96 with the significance level of 95%. In addition, to see the magnitude of the effect between the latent variables, not only from the t-value model but it can be seen from the estimated resulting model. In this study, the result of the estimation model is illustrated in Figure 5:

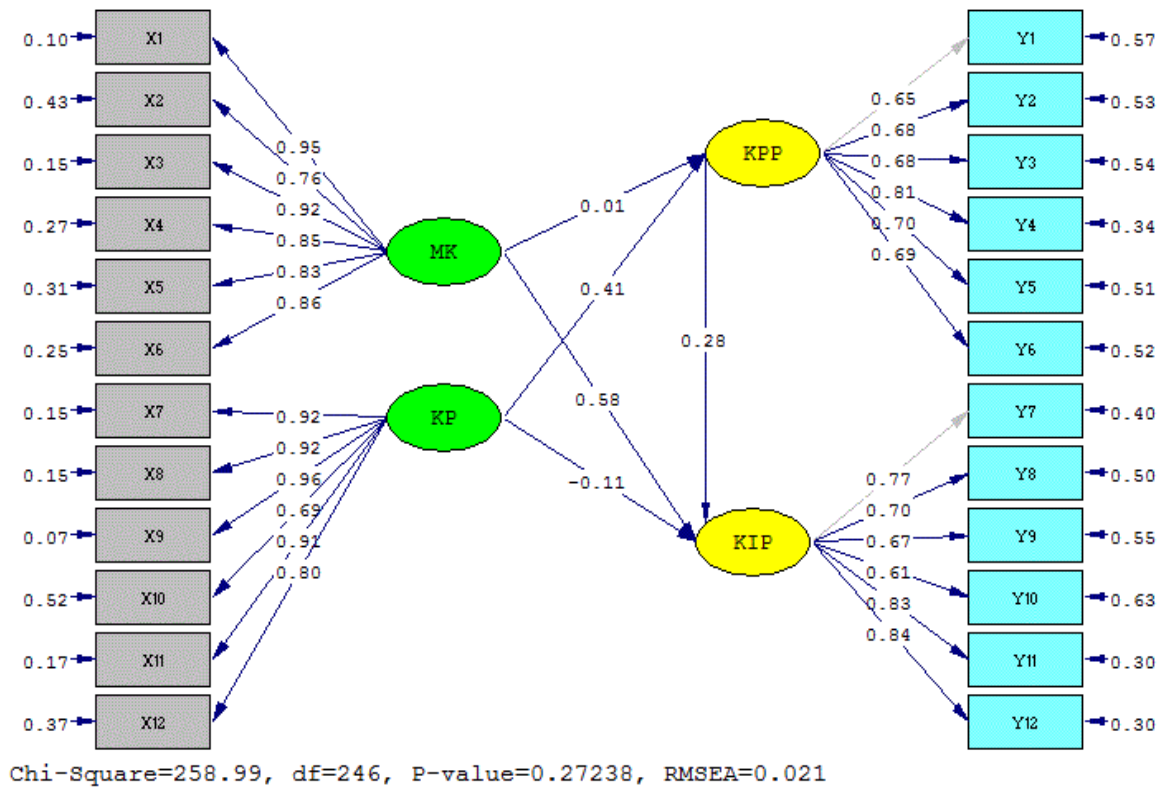


Figure 5 – Standardized Solution Model Diagram

The model above shows that the value met all the required standards. After seeing the combination of various matched sizes, generally, it can be concluded that the overall suitability of the model is a good fit so that it deserves to be analyzed further. After that, the hypotheses test is implemented and the results are presented in this following table:

Table 6 – Hypotheses Test Results

No	Path	Estimation	T-value	Conclusion
1	MK → KPP	0,01	0,05	Not significant
2	KP → KPP	0,41	3,28	Significant
3	MK → KIP	0,58	5,08	Significant
4	KP → KIP	-0,11	-1,01	Not significant
5	KPP → KIP	0,28	2,76	Significant

Based on the data which was processed by using SEM method as described above, the discussion of the results is presented in a comprehensive manner as follows:

Work Motivation is Influenced Service Quality. The result showed that the t-value of 0,05 is smaller than t-value in the table which is 1,96, so the hypothesis 0 is accepted and hypothesis 1 is rejected. The results of statistical analysis showed that motivation did not affect the quality of services in Universitas Negeri Jakarta. It is proven by the influence of

motivation to service quality which only impacted by 1% in which this indicated that the size of the loading factor is worth at 0,01.

The study concluded that in order to improve the service quality, the management or rector in Universitas Negeri Jakarta should consider the above indicators. Leaders need to encourage the employees to improve their potential in terms of moving forward, creativity, and have a good teamwork through the approach of motivational training, for example, provides a clear reward and punishment. This needs to be done in order to improve the reliability of employees in technical service, the reliability in answering questions and in response to the complaints. How? This effort could be carried out by developing an exciting work environment that aims to motivate employees in the work so that their contribution in solving and achieving organizational goals could be achieved (Ahmad et.al, 2012). Besides that, the desire to move forward, creativity and teamwork can be enhanced through the provision of rewards and punishment, this is in line with the research of Simon and De Varo (2006), they said that companies can motivate their employees by offering a good salary, organizational culture and promotion opportunities.

Employee Competency Affecting Service Quality. The result showed that t-value of 3,28 is larger than the value in the table which is 1,96. This means that the hypothesis 0 is rejected and hypothesis 2 is accepted. The results of statistical analysis showed the influence of employee competence and service quality by the loading factor value of 0,41 in which this means that there is an influence in between employee competence to service quality by 41%. Employee competence in the form of rules, technical procedures, duties and responsibilities understanding will significantly affect the reliability of the employees in providing technical service, answering customer inquiries, and handling complaints. This is in line with the previous studies of Nurmasitha et.al. (2016) which stated that employee competence and working environment have a significant effect on the service quality. To maintain and improve the quality of the service, employee competence must be improved by the management, for example, through the provision of regular socialization and training which are scalable and sustainable.

Work Motivation has an Impact towards Employee Performance. The analysis showed that t-value of 5,08 is larger than t-value in the table which is 1,96. So, associated to that, hypothesis 0 is rejected and hypothesis 3 is accepted. The statistical analysis showed that motivation could influence employee performance. The magnitude of the effect is shown by the value of the loading factor by 0,58, this shows that the influence of work motivation on employee performance at Universitas Negeri Jakarta is 58%. This study confirms the previous research of Azar and Shafighi (2013) which indicated that motivation will lead to the fact that employee will seriously carry out its duties and responsibilities in the organization. A good salary is a valuable motivational tool and plays an important role to improve employee performance also to increase organizational productivity. The study also in line with the research conducted by Iqbal et. al. (2012), he stated that, collectively, employees' motivation and ability will participate in its performance and the difficult tasks given to them. Furthermore, this study also provides support for research of Zameer et. al (2014), motivation plays an important role on the performance of employees. This motivation can be improved, for example through awards, capacity building training, work comfort improvement and employee's career and welfare consideration.

Employee Competency Affects Employee Performance. The data analysis shows that the t-value of -1,01 is smaller than t-value in the table by 1,96, This means that hypothesis 0 is accepted and hypothesis 4 is rejected. From the results of statistical analysis above, it can be concluded that the competence of the employees does not affect the performance of employees in Universitas Negeri Jakarta. In details, the amount of the influence is only 11% where it was indicated from the loading factor value by 0,11.

This study shows that the competence indicators does not significantly affect the working dexterity, speed, and quality. This research is not in line with the previous studies like the research of Arifin (2015) which referred that the employee competence is positively and significantly affecting the employee performance. In the other hand, this result is different from Lawler et.al. (2012) research, he thought that in the case of management

performance, the use of competency assessment seems to be quite extensive. Competence is positively related to individual performance and managerial performance, it can be enhanced with a competence system mentoring. This indicated that most of the employees in Universitas Negeri Jakarta feel that their performance is not affected by their capacity but influenced by their motivation as described above, or may be influenced by other factors which are not examined in this study such a leadership commitment, culture and working environment, working facilities or comfort environment

Service Quality Influencing Employee Performance. The result of the data analysis described above shows that the t-value of 2,76 is greater than the t-value in the table (1,96) in which this means that hypothesis 0 is rejected and hypothesis 5 is rejected. It indicates that there is a significant impact on employee performance by 28%. The amount of how big the effect is shown on the loading factor value by 0,28.

This study provides an empirical evidence to the previous studies and supports previous research which examines employee reliability in providing technical service, in answering customer questions, and in handling complaints. This may increase the size of the work dexterity, speed, and quality. The quality of service provided to employees can affect the size of employee performance. This is in line with the research of Purwatiningsih (2015), there is a close relationship between service quality to employee performance. The study also confirms previous research conducted by Abomaleh and Zahari (2014), it is said that the behavior of employees to customers is reflected in the quality of services that have such immediate impact on customer satisfaction.

CONCLUSION

This study demonstrates the factors that affect service quality and the impact on employee performance. From 5 hypotheses proposed at the beginning of the study, 3 hypotheses were accepted and 2 hypotheses were rejected, with the following conclusions:

1. Work motivation does not influence the service quality. This shows that most of the administrative staff in Universitas Negeri Jakarta felt that service quality they provide does not depend on the motivation they have, but depends on other factors, such as leadership style, work culture, management commitment, or any other factors.
2. Employee competence affected service quality. This study confirms and supports several previous studies that employee competence has a significant and positive effect on service quality. The better the competency of the employees, the better the quality of the services provided. According to the administration staff in Universitas Negeri Jakarta, employee competence with the indicators of understanding the regulations, technical procedure, duties, and responsibilities will significantly affect the reliability of the employees to provide technical service, to answer customer inquiries and to response complaints. A good competence employee will provide a good service. A qualified service can be delivered to the maximum if the employee has a good competence in their field.
3. Work motivation able to influenced employee performance. This study shows that the majority of the employees in Universitas Negeri Jakarta agreed that their performance is influenced by motivation. The more motivated employees to work, the better the performance. Thus, the motivation needs to be maintained and enhanced, for example, through awards, training capacity building, work comfort improvement as well as employee's career and welfare consideration.
4. Employee competence has no impact on employee performance. This indicates that most of the employees in Universitas Negeri Jakarta found that their performance is not affected by their capacity, but is influenced by their motivation to work. Although employees have a good competence, but if the employee does not have the motivation to work, the performance will still be low. Most employees also think that their performance is influenced by other factors such as management commitment, culture and working environment, working facilities or comfort environment.

5. Service quality affects employee performance. The study also shows that most of the employees in Universitas Negeri Jakarta confirmed that employee performance is influenced by the quality of service they provide. The better the quality of the service, then the better their performance. This means that an increase in service quality can improve the performance of the staff in Universitas Negeri Jakarta.

Based on the results and discussion above, the author suggests two things as follows:

This study provides recommendation and advice to Universitas Negeri Jakarta that some of the indicators which are related to service quality and employee performance management should be a serious concern to be considered, namely:

- Employee motivation has a significant impact on employee performance. In order to improve employee motivation, it can be established by using the approach of (1) opportunity to move forward, (2) encourage the growth of creativity, and (3) improving teamwork system. A desire of the employees to keep on moving forward should be encouraged through incentives, rewards (promotions), training and higher education. While on the other hand, creativity can be enhanced through training and some internal competitions to explore creative ideas. Lastly, teamwork can be improved through outbound activities, family gathering, and other activities that can improve cooperation, both among employees and leaders.
- Employee competence has a significant effect on service quality. To develop service quality, management should improve the employee competence by (1) Increasing knowledge about the rules, (2) increasing the understanding of procedures and technical services, and (3) giving an understanding about the duties and responsibilities. The enhancement of employee competence through those indicators should be measured and evaluated regularly. Management should have a short, medium, and long plan in accordance with employee competence through a measurable and continuous training and socialization activities.
- Service quality affected employee performance. The increasing service quality could be developed through (1) employee reliability in providing technical service, (2) employee reliability in answering customer questions, and (3) employee reliability in handling complaints. By that, the size of an employee's performance will be better. In terms of service reliability and speed, handling a complaint is something that must be really concerned of. Management should be able to monitor every moment of the service and able to provide adequate facilities in the community.

Further research needs to consider the use of a broader sampling. This is necessary to be carried out so that the results and conclusions of data analysis can reflect and portray the real condition. Besides, further research is very important to be conducted in order to examine other factors such as work culture, management commitment, and also environmental factors, because it relates to what the author have found during this research.

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DOI <https://doi.org/10.18551/rjoas.2017-01.17>

SEVERAL FACTORS THAT INFLUENCE HOUSEHOLD ECONOMIC DECISIONS OF RICE FARMERS IN INDONESIA

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ABSTRACT

The objective of this study is to point out the factors that influence household economic decisions in the use of labor, production, and consumption. This study was undertaken in Kupang regency, East Nusa Tenggara with 114 samples of agricultural household. A specification of household economic model used a simultaneous equations system. Parameter estimation uses two-stage least squares (2SLS) method. The results showed that the act of using labor in a household for rice farming was significant influenced by agricultural wage rate, rice product price, household income, farming area, and the number of household member. While the use of wage-labor was significant influenced by wage rate, farming area, and the use of household (domestic) labor. The use of urea and SP-36 was affected by ratio of rice price to fertilizer, and farming area. Rice production was influenced by farming area, total number of labor used, and amount of fertilizer used. Rice consumption from farming was positively significant influenced by an amount of rice production produced and the number of household member. Rice consumption from purchase was negatively influenced by the number of rice production but positively influenced by the number of household member.

KEY WORDS

Econometric model, labor, production, consumption, farmer.

Rice is a grass which produces seeds to be used as a staple for most Indonesian. Rice demand in Indonesia tended to be increase from year to year (Nurasa and Purwoto, 2005; Irawan, 2005). During the period of 2008-2012, rice demand increased up to 4.14 percent (Trade Ministry, 2013). The demand increases was caused by population increases and a change in consumption pattern of community that initially have non-rice consumption pattern, then changed to be rice consumption (Leki, 2010). On the other hand, rice plant was also needed as a raw material for food industry and non-food industrial raw materials, such as cosmetics industry and chemical industry (Central Statistics agency/BPS, 2011).

If the supply of local rice could not meet the needs, so that in the future Indonesia will be more depending on importing rice from other countries. Therefore, Indonesia has to make an effort to increase rice production by increasing plants productivity and land extension. According to domestic trade policy center (2013), source of rice growth from productivity was 0.86% and growth of harvest area was 1.99 percent per year.

Rice working in Indonesia is dominated by home-based business. In 2013 there were 14.206.355 agricultural households that attempted to plant rice (BPS, 2013). Agricultural households have a dual role in producing rice for household consumption needs or to meet the needs of the entire population.

Household in producing production unit by combining goods of modal and raw materials along with outpouring of work and time to produce final goods. (Becker, 1965) Agricultural household in maximizing the advantages to face the obstacles of time allocation, production, and income. (Barnum and Square 1979; Singh, et al.1986) According to Barnum and Square (1979) the total of household time were allocated to combine goods production and leisure, as well as good time allocation on farm and/or off-farm (Chang et al, 2012) Ellis (1998) then stated that household has the freedom to work household (domestic) labor and to rent labor from outside household in the applicable wage rate.

The allocation of labor was influenced by several variables, such as wage rate, product cost, income level, and household characteristic. In addition to labor input, household should require other production inputs such as seeds, urea fertilizer, SP-36 fertilizer and so on to carry out production activity. Bokhuseva and Hockman (2004) stated that one of the factors that influence production was technical inefficiency. Furthermore, Kumbakhar (2002) stated that agricultural production related to farmers managerial ability in managing production.

Model of agricultural household economic has attracted the attention of researchers for a long time. Hanani and Yonekure (2009); Fariyanti et al (2007), used model of household economic to analyze the act of household economic decision-making behavior of vegetable farmers. Rochani and Lolollo (2005); Dwiastuti (2008); Setiani (2015); Makki (2014); Leki et al (2016) used household economic model to analyse the decision of agricultural household of crops.

Those results showed that agricultural household has a dual role in decision-making of consumption and production. The production decision directly affects the amount of income that will be accepted and the income level affects the decision of household consumption. While the influence of consumption towards production shows the different behavior. The results of study conducted by Nuhfil and Yonekure found that household consumption expenditure significantly influenced the decision-making of vegetable farmers household. However, the result of study conducted by Leki et al (2016) showed that non-food expenditure to have not significant influence over the use of fertilizer for maize plant.

Based on the analysis above, so that it is important to conduct research aiming to point out factors that influence household economic decisions in using of labor, production, and consumption.

MATERIAL AND METHODS OF RESEARCH

Study Area. This study was undertaken in Kupang Regency, NTT, Indonesia. This location was chosen since it is one of rice production centers in NTT with 21.765 ha in area. Samples of household was randomly chosen, there were 114 households from household population in two sample villages.

Data Analysis Method. In this study was constructed an economic model of agricultural household in the form of simultaneous equations consisting of 7 structural equations and 3 identity equations as follows:

- (1) $LWH = a_{10} + a_{11}W + a_{12}PQR + a_{13}HI + a_{14}FA + a_{15}NHM + \mu_1$
- (2) $LOH = a_{20} + a_{21}W + a_{22}FA + a_{23}LWH + a_{24}SHI + \mu_2$
- (3) $LUT = LWH + LOH$
- (4) $FUR = a_{30} + a_{31}(PQR/PUF) + a_{32}FA + a_{33}ENF + \mu_3$
- (5) $FSP = a_{40} + a_{41}(PQR/PSF) + a_{42}FA + a_{43}ENF + \mu_4$
- (6) $QR = a_{5,0} + a_{5,1}FA + a_{5,2}LUT + a_{5,3}FUR + a_{5,4}FSP + a_{5,5}SR + \mu_6$
- (7) $SHI = HI - EH$
- (8) $EH = EF + ENF$
- (9) $CRF = a_{6,0} + a_{6,1}PPR + a_{6,2}HI + a_{6,3}QR + a_{6,4}NHM + \mu_6$
- (10) $CRP = a_{7,0} + a_{7,1}PPR + a_{7,2}HI + a_{7,3}QR + a_{7,4}NHM + \mu_7$

Names of the variable in the model are presented in detail in Appendix 1.

A built-model has to meet the criteria of economics, statistics, and econometrics. (Koustoyiannis, 1977). Moreover, the model has to be able to be operated, analyzed, and also producing a conclusion related to the phenomenon being studied (Sitepu and Sinaga, 2006).

Identification result of each structural equation in the model is over identified because variable total of the model is 21 ($K=21$) consisted of 10 endogenous variables and predetermined variables that all of them are exogenous variable with 11 variables. In the equation with total of M equal to 2, then it is obtained $(K-M) = 19$ greater than $(G-1) = 9$. Similarly, in the equations with 6 M is obtained $(K-M) = 15$ greater than 9.

Because of all structural equations identified are over identified so that structural equation parameter is analyzed by using Two Stage Least Square (2SLS) methods. It was chosen because having superiority compared to other methods (Gujarati, 2012) the estimation of the model uses a computer application program package named Statistical Analysis System / Econometric Time Series (SAS / ETS) version 9.1 for windows.

RESULTS AND DISCUSSION

Estimation result of household economics model. Structural equation estimation results presented in Appendix 2 showed that all the equations having R²-value were more than 0.5. F test results showed that all of the structural equations constructed statistically were significantly different from zero at the one percent level. In terms of economic criteria all parameter estimators of built-model have signs and magnitude which was accordance with the hypothesized. Based on statistical criteria, econometrics, and economic criterion can be concluded that agricultural household economic model built was well enough to use.

The estimation results of agricultural household economic model are presented in Appendix 3, they were summarized as follows:

- (1) $LWH = -17.0791 + 0.00033 W + 0.00267 PQR - 1.4E-07 HI + 64.6416 FA + 0.6782 NHM$
- (2) $LOH = 15,8768 - 0,00047 W + 60,1199 FA - 0,1952 LWH + 8,38E-08 SHI$
- (3) $LUT = LWH + LOH$
- (4) $FUR = -0,0517 + 9,0739 (PQR/PUR) + 80,4184 FA - 4,8E-07 ENF$
- (5) $FSP = -0,4222 + 15,9295 (PQR/PSF) + 70,9160 FA - 5,3E-07 ENF$
- (6) $OR = 31,7737 + 1792,834 FA + 6,3033 LUT + 10,8821 FUR + 2,1899 FSP + 5,0437 SR$
- (7). $SHI = HI - EH$
- (8) $EH = EF + ENF$
- (9) $CRF = 127,197 - 0,0268 PPR + 3,82E-06 HI + 0,2727 OR + 45,8976 NHM$
- (10) $CRP = 200,9859 - 0,0265 PRP - 1,6E-06 HI - 0,0442 QR + 57,3047 NHM$

The Decision of Labor Use on Rice Farming. In managing rice farming, household not only use labor within the household but also hire wage-labor. Analysis result of labor use was presented in Appendix 3, it showed that agricultural wage variable to have positive significant influence over the use of labor within the households for rice production. Every 1% increase of agricultural wage would increase 0.7% of household labor use for rice production. Agricultural wage to have significant influence over the use of wage-labor. Every 1% increase of agricultural wage caused 2.08% decrease in the use of household (domestic) labor. This was because households faced limited income so that they would reduce the use of wage labor if there is wage increase.

Variable of seed price to have significant influence over the use of household labor. Every 1% increase of seed price would encourage households to increase the use of household labor for rice production.

Total of household income has a significant negative sign parameter estimator at the level of 10 percent, it meant the addition of household income total would reduce the use of household labor for rice production. This happened because households allocated labor to work to earn income and leisure. If the income was considered to have been able to guarantee the household needs, thus the household tended to reduce working time and increase leisure time.

The number of household member to have positive influence over the use of household (domestic) for rice production. The bigger the total of household member, the bigger household (domestic) labor that would be used for rice production activity.

Rice farming area to have positive significant influence over the use of household (domestic) labor or wage-labor for farming rice. The larger rice farming area, the more activities can do, so that it needed many labors. The result was same as reported by Maleha (2008) that farm area cultivated to have positive influence over the use of labor for corps business.

Parameter estimator of household (domestic) labor 1% addition would decrease 0.6% of hired labor used.

Household income surplus to have not real influence but has a positive sign based on hypothesized. It gave an indication that there was a greater tendency that household income surplus would increase the use of hired labor.

The Decision to Use Fertilizer for Rice Production. The analysis result of equation use of urea fertilizer and SP-36 fertilizer presented on appendix 3 showed that ratio variable of seed price to fertilizer to have a significant influence over the use of fertilizer and pesticide. This reflected that farmers were more critical in doing agricultural business because they have considered the price of product and fertilizer although the response was low. It was seen from the elasticity value that less than 1. The rice price getting high would encourage households to add the use of fertilizer, otherwise the increase of fertilizer prices led the decrease of fertilizer use for rice production.

Farming area to have significant influence over the use of fertilizer and pesticide. Every addition of rice farming area led to use of fertilizer become high.

Non-food expenditure showed no significant influence on the use of urea and SP-36 fertilizer, but it has positive parameter estimator that indicated there was a tendency that households would reduce the use of fertilizer along with the increase of non-food expenditure. The results of this study were similar to Leki et al (2016) that non-food expenditures to have not significant influence over the use of fertilizer for maize in Timor. This was one the subsistence household indicators that always gave high priority on the effort to meet food needs from other interests. In addition, households as a member of society could not avoid the traditional events at community which need a lot of costs. To deal with that condition, household was burdened by various demands of tradition/cultural that has to be paid soon. As a result, they would hold household budget reallocation so as to reduce the purchase of fertilizer. For that reason, the use of fertilizer tended to be low.

Several Factors Affecting Rice Production. Analysis results of the rice production behavior presented in Appendix 3 has coefficient of determination of 0.9712 that means 97.92 percent of rice production variation was able to be explained by the explanatory variables included in the model.

Farming rice area to have significant influence over rice production. Every 1% addition of farming area would increase rice production by 0.4%. Parameter estimator of employment is positive and significant at the level of less than 15%, which means the addition of the use of labor will increase production. This occurred because the addition of labor can be used for weeding, pest control and disease until harvest and post-harvest so that it positively affected rice production.

The use of fertilizer to have significant influence over the rice production, but the use of pesticide to have not significant influence. This result supported the findings of Dwiastuti (2008) and Setiana (2015). Rice seeds did not show significant effect on rice production. Nevertheless, positive parameter estimator sign suggested that there was a tendency that use more seeds will increase the production of rice.

Factors Affecting Rice Consumption's Behavior. In this study, rice consumption's behavior was distinguished by rice consumption derived from farming and rice purchase. The results of parameter estimation rice consumption behavior presented in Appendix 3, shows that the production of rice significantly influences the results of the rice consumption from farming. Every 1% addition of rice production caused the rice consumption from farming increased up to 0.62%. This phenomenon was related to the purpose of farming to meet household food needs, thus the bigger production, the larger the result got. On the other hand the number of rice production to have negative influence over the rice consumption from purchase. This condition implied that there was quantitative substitution relationship between rice production and rice consumption from the purchase. The higher rice production, the larger the food availability in a household to consumption, so that households will reduce rice consumption from the purchase.

The number of household to have positive influence over the rice consumption from farming or rice purchase. Thus, the bigger household member, the bigger rice consumption in households.

Total household income to have not significant influence over the rice consumption. Price rice estimator parameter was not statistically different from zero but has a negative value in accordance with the laws of economics. Not real effect of rice price was assumed by the price rice that almost same sold in market. The same result was stated by Taiwon (2006) and Surachman et al. (2009) rice prices did not affect rice demands.

The effect of Policy Simulation. Model validation was first done before simulation by criteria of Theil's Inequality coefficient (U-Theil) and its decomposition (Pindyck and Rubinfeld (1991). Based on the average of actual value and the predictions average value presented in Appendix 4, It was apparent that all endogen variables were identified very close between the average of actual value and its prediction. The analysis result showed that all the U^M value was equal to zero, while the U^S value close to zero, and U^C value approaching one. Thus, it could be concluded that the model was valid and can be used for simulation.

The policy simulation results of farming scale 25% addition presented in appendix 5 showed that farming expansion resulted in the use of production and labor became high, thereby increased production by 19.84%. Production increases led to household income increased up to 14.86% and revenue surplus by 29.19%. Production increases encouraged household to increase rice consumption from farming by 14.51% but decrease rice consumption from purchase by 7.07%.

The policy simulation of subsidy 25% fertilizer price presented in appendix 5 showed fertilizer price subsidy to have influence over the fertilizer demands through changes in the ration of product price to fertilizer. Structurally, fertilizer use increase to have direct influence over the production and production cost. The impact of fertilizer price subsidy policy affected the use of urea and SP-36 fertilizer increased respectively 12.38% and 14.87%. There was 4.24% rice production increase as following effect. Farming production increase caused the availability of food for consumption became high, so that households increased the consumption of rice from farming income but decreased the rice consumption of purchase.

CONCLUSION

The act of household (domestic) labor use for rice farming is affected by agricultural wage rate, seed price, household income, farming area, and the number of household member. While the use of wage-labor is significant influenced by wage rate, farming area, and the use of household (domestic) labor.

The use of urea and SP-36 fertilizer is influenced by the ratio of seed price to fertilizer and farming area. While the non-food expenditure to have not significant influence. Rice production is significant influenced by farming area, total number of labor used, and amount of fertilizer used.

Rice consumption from farming income is positively influenced by an amount of rice production produced and total of household member. Rice consumption from purchase is negatively influenced by an amount of rice production but positively influenced by the number of household member.

Policy simulation of farming scale extension has a significant impact on labor utilization, production increase, and rice consumption from farming results addition.

POLICY IMPLEMENTATION

In order to improve the condition of agricultural household economy, thus it needs a government policy to expand farming scale by utilizing the potential of farm area that has not been utilized for a while. This policy needs to be supported by provision of various agricultural supported facilities or agricultural household empowerment program on an ongoing basis.

APPENDIX 1 – Variable Name

Variable	Description
LWH	The use of labot within household
LOH	The use of labor outside household
LUT	The used of total labor
FUR	The use of urea fertilizer
FSP	The use of SP-36 fertilizer
QR	Rice production
HI	Household income
SIH	Surplus of household income
EH	Household expenditure
EF	Food expenditure
ENF	Non food expenditure
RCF	Rice consumption from farming
RCP	Rice consumption from purchases
PQR	Price of Rice Product
PRR	Purchase price of rice
PUF	Prices of urea fertilizer
PSP	Prices of SP-36 fertilizer
FA	Farming area
SR	The use of seeds
NHM	Number of household member
W	Wage

APPENDIX 2 – Indicator value R2-Statistic, F-value, Probality F, and Durbin Watson from Structural Equation

Endegenous variable	R2	F-value	Pro –F	DW
LWH	0.97483	690.65	<.0001	2.080215
LOH	0.89748	238.54	<.0001	2.229918
FUR	0.89961	328.59	<.0001	1.840937
FSP	0.88994	296.48	<.0001	1.877879
QR	0.97917	1015.27	<.0001	1.757964
CRF	0.69972	63.50	<.0001	1.590924
CRP	0.54212	32.26	<.0001	1.936612

APPENDIX 3 – Estimation Result of Agricultural Household Economic Model

Equation	Variable Description	Parameter estimate	t-value	Elasticity
LWH	Intercept	-17.0791	-3.28***)	
	W	0.000334	2.23**)	0.7031
	PQR	0.002674	8.8***)	0.2774
	HI	-1.4E-07	-1.83*)	-0.0410
	FA	64.64161	36.8***)	0.7385
	NHM	0.678161	2.1**)	0.1888
LOH	Intercept	15.87677	2.51**)	
	W	-0.00047	-2.51**)	-2.0786
	FA	60.11997	8.43***)	1.4430
	LWH	-0.19522	-1.99**)	-0.4102
	SHI	8.38E-08	0.78	0.0689
FUR	Intercept	-0.05173	-0.02	
	PQR/PUR	9.073995	6.61***)	0.3713
	FA	80.41841	19.77***)	0.7048
	ENF	-4.8E-07	-0.72	-0.0739
OB	Intercept	-0.42219	-0.18	
	PQR/PSP	15.92948	7.38***)	0.4461
	FA	70.91602	16.72***)	0.6612
	ENF	-5.3E-07	-0.8	-0.0869
QR	Intercept	31.77372	1.23	
	FA	1792.834	4.19***)	0.4039
	LUT	6.303262	1.54*)	0.1835
	FUR	10.8821	4.83***)	0.2798
	FSP	2.189868	0.99	0.0529
	SR	5.043663	0.86	0.0425
RCF	Intercept	127.197	0.14	
	PPR	-0.02684	-0.3	-0.6790
	HI	3.82E-06	0.9	0.0511
	QR	0.272664	11.4***)	0.6173
	NHM	45.89757	1.92**)	0.5707

Continue of Appendix 3

RCP	Intercept	200.9859	0.67	
	PPR	-0.0265	-0.9	-1.6231
	HI	-1.6E-06	-1.11	-0.0514
	QR	-0.04423	-5.53***)	-0.2425
	NHM	57.3047	7.16***)	1.7252

APPENDIX 4 – Actual Average Value and Prediction. U-Theil Coefficient and its Decomposition in Agricultural Household Economic Model

Variable	Actual Average Value	Prediction Average Value	Deviation	(U ^M)	(U ^S)	(U ^C)	Coefficient U-Theil
LUT	24.7807	24.8837	0.416	0.0000	0.0000	1.0000	0.0655
LWH	16.7895	16.8271	0.224	0.0000	0.0000	1.0000	0.0717
LOH	7.9912	8.0567	0.820	0.0000	0.0300	0.9700	0.1542
FUR	21.886	21.8859	0.000	0.0000	0.0300	0.9700	0.1424
FSP	20.5702	20.5708	0.003	0.0000	0.0300	0.9700	0.1500
QR	851.3	852	0.082	0.0000	0.0100	0.9900	0.0780
SHI	6565501	6466099	-1.514	0.0000	0.0700	0.9300	0.2407
EH	8458351	8376657	-0.966	0.0000	0.0500	0.9500	0.1014
CRF	376	375.5	-0.133	0.0000	0.1000	0.9000	0.2565
CRP	155.3	155.6	0.193	0.0000	0.1400	0.8600	0.2521

Appendix 5 – Policy Simulation Effect of Farming Scale 25% Extension and 25% Subsidy of Fertilizer Price

Variable	SIM BASIC	25% Extension Policy of Farming Scale	25% Subsidy Policy of Fertilizer Price
LUT	24.8837	21.451	-0.013
LWH	16.8271	16.955	-0.137
LOH	8.0567	30.839	0.245
FUR	21.8859	17.623	12.377
FSP	20.5708	16.534	14.868
QR	852	19.836	4.237
HI	14842756	14.865	1.390
SHI	6466099	29.185	2.815
EH	8376657	3.811	0.291
CRF	375.5	14.514	2.850
CRP	155.6	-7.069	-1.285

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DOI <https://doi.org/10.18551/rjoas.2017-01.18>

AN ECONOMIC RESPONSE OF EXPORT PERFORMANCE AND COMPARATIVE ADVANTAGE OF RICE TRADE BETWEEN CHINA AND VIETNAM

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ABSTRACT

Rice is an important crop that fulfill the domestic food requirements and also a source to earn foreign exchange for the economy. This particular study was conducted with an objective to explore the rice export trends between China and Vietnam. Another major objective was to assess the export competitiveness and concentration commodity among cereals for both countries. For the research analysis, time series data from the year of 1961 to 2013 regarding rice production, cultivated rice area, rice export quantity and value were processed to calculate the compound growth, instability and direction of export. Results of the trend analysis demonstrated that Vietnam export of rice may increase in coming years and for the case of China, the export of rice may decrease in future. The growth rate analysis of both countries suggests that export quantity of rice were found to be 2.70% (China) and 6.10% (Vietnam). In terms of instability, during the period-I China was more instable as compared to Vietnam in terms of quantity and value, while during the period-II China export of rice was more stable than Vietnam. The direction of trade between both countries presented significant results as compared to the other neighboring countries. The nominal protection co-efficient (NPC) for export of rice from Vietnam were found to be lower than unity, which explained that Vietnam rice is favorable export commodity than China.

KEY WORDS

Export performance; production response; trade instability; trend analysis; China; Vietnam.

In 2004 the General Assembly of United Nations (UNO) had declared rice as an international year of rice. This happens because almost half of the world's population consumed rice as staple food in their cuisine. For developing countries rice is a major source of foreign earnings. According to FAO (2013) the Thailand and Vietnam were the largest rice exporters and these countries contributed for more than 50% in world rice exports. Food crops have been considered the most important sector of Vietnam economy and rice crop accounts for 85 percent in it. After 1991, the relationships and cooperation between China and Vietnam dramatically improved which subsequently offered trade benefits between two neighboring countries. After undergoing through a series of policy reforms during the past few decades, the pattern of rice production and trade had significantly changed between China and Vietnam. To explore the precise impacts of these policy reforms on trend and instability for rice export, this study was carried out by analyzing the time series data of rice trade. The particular objectives of this research article were to conduct a trend analysis for rice exports between China and Vietnam; estimate the level of rice export instability; estimate the export competitiveness and finally analyze the inward/outward direction of rice trade between two countries.

MATERIALS AND METHODS

Data Source. In order to examine the rice export performance and competitiveness, the trade period selected for data set was started from 1961 to 2015 and the covering period was segmented into two halves. The first period-I was comprised from 1961 to 1985 and the second period-II was from 1986 to 2015. Another data set required for assessing the commodity concentration and trade direction between two countries were from 2000 to 2015.

Annual data based on rice exports in quantity and value terms, the unit value of exports and the domestic and international prices were also collected. The major source of these data collection was from United Nation (UN) Comtrade data set webpage (<http://comtrade.un.org/data/>). Secondly, national trade publication of China and Vietnam also used for data validations. Furthermore, certain other trade magazines of leading exporting agencies were also consulted for making a fact based study.

Analysis Techniques:

Compound Annual Growth Rate. The export performance and export competitiveness of rice were calculated by Chan (2009) procedure which is utilized to estimate the compound annual growth rate. The formula for measuring the annual compound growth rate for rice export quantity and value can be written as:

$$CAGR = \left(\frac{Ending\ value}{Beginning\ value} \right)^{\left(\frac{1}{no.\ of\ years} \right)} - 1 \quad (1),$$

where: CAGR indicates the compound annual growth rate for commodity.

Coppock's instability index. According to Coopock (1977) the instability in export process hamper the economic development process. He proposed an estimation technique known as Coopock, s instability index that measured the variation and instability in exports. Algebraically Coopock, s formula can be expressed as:

$$\text{Coppock's instability index} = \left| \text{Anti} \log \sqrt{\log V} - 1 \right| \times 100 \quad (2)$$

$$\log V = \frac{1}{n-1} \left[\sum (\log x_{t+1} - \log x_t) - \frac{1}{n-1} \sum (\log x_{t+1} - \log x_t) \right] \quad (3),$$

where: X_t denotes the exports value in a particular year "t"; n represents the total numbers of years covering a trade period.

Markov Chain Analysis. Markov chain model was applied to examine the nature of structural change in rice exports. The elements of transitional probability matrix " P_{ij} " describe the nature of probability that exports of commodity (rice in our case) will switch from country 'i' to country 'j' over the time. The probability of a country retaining its market share is revealed by the diagonal elements P_{ij} , which in other words elucidate the loyalty of an importing country to the exports of a particular country. In current context, the structural change was treated as a random process between China and Vietnam while the figures of average exports of rice from Vietnam to China for the period of 2000 to 2015 were administered for analysis. Algebraically Markov chain model can be expressed as:

$$E_{jt} = E_{it-1} P_{ij} + e_{jt} \quad (4),$$

where: E_{jt} denote the exports of rice from Vietnam to the jth country during the year 't'; E_{it-1} denote export volume to ith country during the year 't-1'; P_{ij} denote the probability of exports that will shift from ith country to jth country; e_{jt} represent the error term; r denote the number of importing countries.

Nominal Protection Co-efficient (NPC). In context of free trade environment and to measure the competitive advantage of rice Nominal Protection Coefficient (NPC) was worked out. NPC represent the ratio of domestic rice price to the world reference price and it gave the extent of competitive advantage of rice export (Gonzales 1993). If the NPC is less than unity, the commodity is treated as globally more competitive.

$$NPC = \frac{P_d}{P_b} \quad (5),$$

where: P_d denote the domestic wholesale rice price; P_b represent the world reference rice price.

Measures of Concentration. In the present context of rice trade with Vietnam, the trading partners will be assumed as individual elements. The share of these individual elements was used to work out the concentration measures. Let m represent the number of trading partners with Vietnam and q_{it} denotes the volume of exports or imports from i th partner country at time t . Then sum of q_{it} from 1 to m countries will be q_t . The exports or imports share of each country for that group of commodity for the year ' t ' could be written as:

$$p_{it} = \frac{q_{it}}{q_t} \quad (6),$$

$$i = 1, \dots, m \text{ and } t = 1, \dots, T$$

The Hirschman-Herfindahl Index (HH) simply consists of the sum of p_{it} s weighted by themselves (Nauenberg et al. 1997):

$$HH_t = \sum_{i=1}^m P_{it}^2 \quad (7)$$

The HH index lies between $1/m$, the case where all p_{it} s are equal, and 1, where there is only one p_{it} , implying that $q_{it} = q_t$.

RESULTS AND DISCUSSION

Outcomes of Trend Analysis for Rice Export between Vietnam and China. In 1961 the area under rice cultivation was 4744 (000Ha) and the production of paddy rice was 8997.40 (000 t), as well as the production of milled rice was 6001.27 (000 t). In 2015 the area of cultivation increased up to 7816.48 (000Ha) and the production of paddy and milled rice also increased an average of 21441.16 (000 t) and 14004.12 (000 t), respectively. There was increased in area 3158.81 (000Ha) and both kind of rice (paddy and milled) 58416 (000 t) from 1961 to 2015. Meanwhile, the world wide export of rice increased from 182.25 (000 t) to 3939.08 (000 t) (FAO 2015).

To find the trend in export of rice between two countries, the non-parametric regression analysis was used. The results were derived for the period of 1961 to 1985 and denote that the trend of export was constant but after 1985 the export of rice increased. To initiate the country's integration process with world economy, Doimoi reforms were launched in 1986. These policies encouraged the development in agricultural sector and resultantly the rice production increased to a greater extent (Yearbook 2012). During analysis the value of co-efficient of regression R^2 was found 0.90 (Fig. 1).

The analysis was also carried out to find the export performance of the neighboring countries. Our analysis results indicate that export of rice from Vietnam to China showed a significant positive trend, while Cambodia and Thailand trend curve gradual decreased with a coefficient of regression (R^2) value 0.73, 0.74 and 0.09, respectively.

Overall, the results showed an increase in trends of rice export between Vietnam and neighboring countries. The co-efficient of regression value was found 0.72.

The non-parametric trend analysis for export of rice from China was also calculated to assess the performance of rice export. The trend line indicated that the export of rice had been decreased in last ten years as compared to Vietnam. The area of cultivation increased by 22% compare to Vietnam. This decrease in export of rice was due to the other substitute trading, changing rates of fluctuation and increase in domestic consumption. During analysis the value of co-efficient of regression (R^2) was found 0.23.

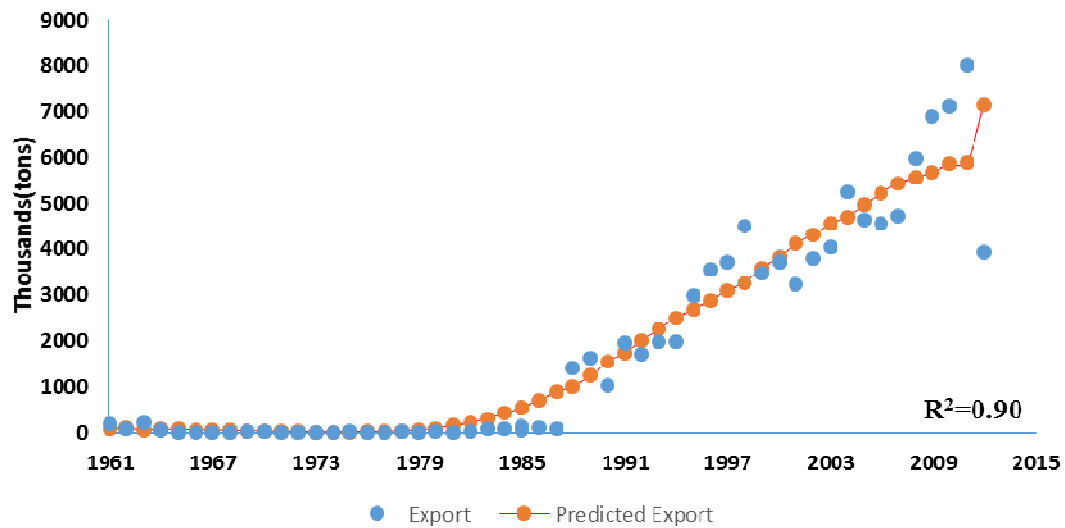


Figure 1 – Trend of rice export from Vietnam (1961-2015)

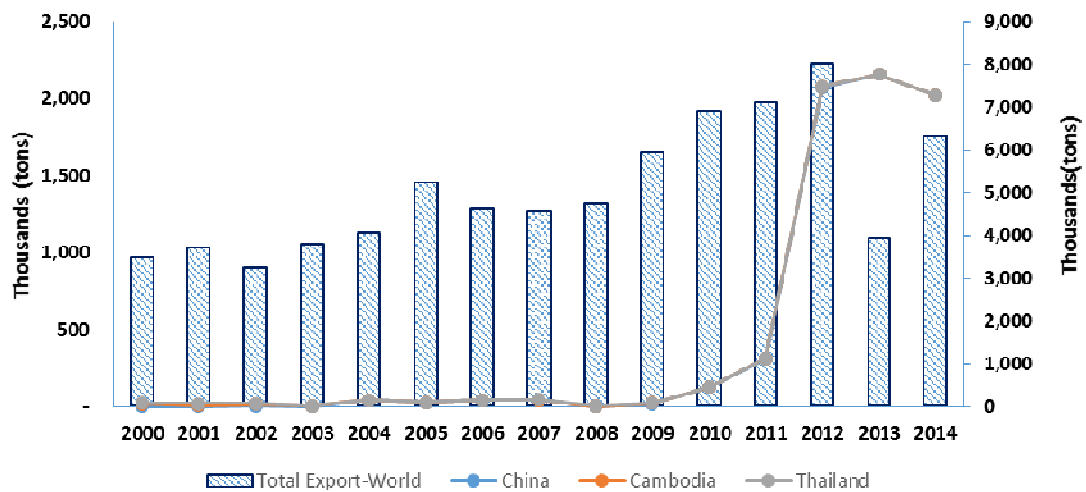


Figure 2 – Export performance between Vietnam and neighboring countries

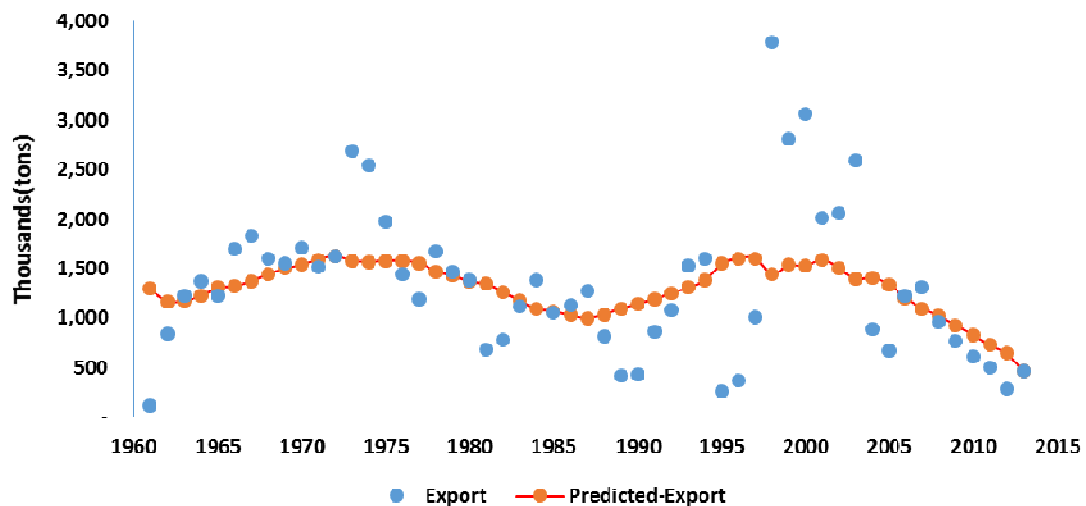


Figure 3 – Trend of rice export from China (1961-2013)

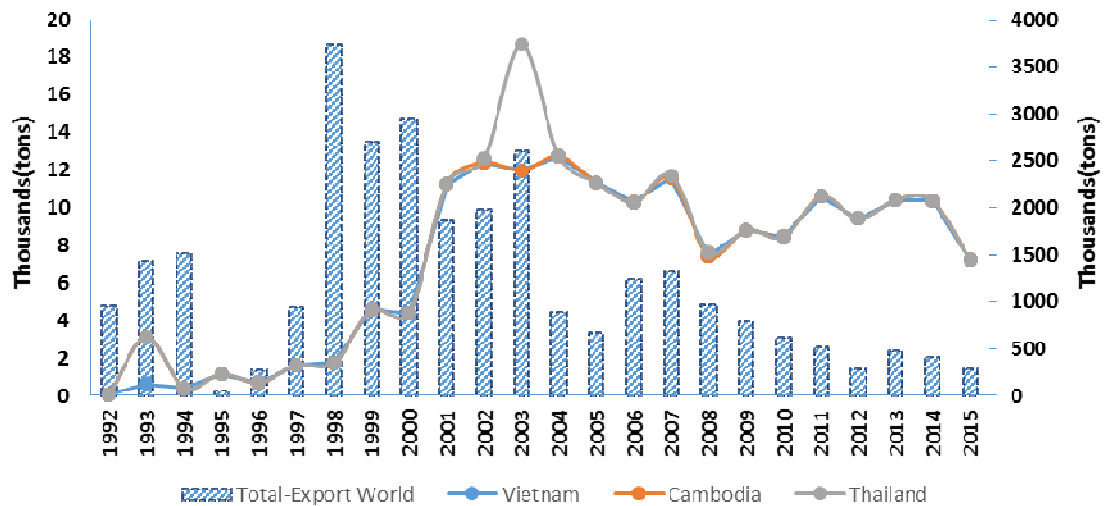


Figure 4 – Export performance between China and neighboring countries

Figure 4 explained about the export scenario from 2003 towards the world, a gradual decrease in export of china had been observed. The results also indicated that the export trends toward neighboring countries were significantly negative. Overall, the decreasing trends were found during the analysis. The value of the coefficient of regression (R²) was found 0.34 during analysis.

Outcomes of Compound Annual Growth Rate (CAGR). Table-1 represented the results for analysis of compound growth rate between China and Vietnam. In period-I CAGR of China was (9.7%) and Vietnam was (-4.60%), respectively. Vietnam CAGR was negative due to political unrest and China was becoming stable after political stability particularly after 1981. In period-II China CAGR was negative due to less rice export and high domestic consumption as well as the occurrence of seasonal flood situation. These circumstances resulted low export volume of rice, while in the case of Vietnam after 1975 the political situation became stable, the volume of exports from the country also increased. Therefore, under stable economic conditions a sharp increase in exports of rice had been observed during the preceding years.

Table 1 – Compound growth rate

Time line	China	Vietnam
Period-I	9.7%	-4.60%
Period-II	-3.0%	13.40%
Overall	2.70%	6.10%

Overall, the overall CGR of the export quantity of rice were found to be 2.70% (China) and 6.10% (Vietnam) which states that there was an increase in the prices of rice in the international market.

Findings of Cop pock's Instability Analysis. The Cop pock's instability index was applied to estimate instability trend of rice trade between China and Vietnam for the two periods. Period-I for Vietnam from 1961-1985 and 1986-2015 before and after the Doimoi reforms. For China same time line was assumed to find the export differences during for both time periods.

Table 2 – Cop pock's instability analysis

Particulars	China		Vietnam	
	Period-I	Period-II	Period-I	Period-II
Quantity	57.24	10.38	37.86	29
Value	66.04	40.79	13.93	43.72

Source: Authors data analysis results, 2016.

The instability of export quantity of rice from China in period-I (57.24) is higher than Vietnam (37.86), that indicated that during this period China faces more restrictions and decrease in demand as compared to Vietnam. For the period-II Instability of rice export quantity of China (10.38) is lower than Vietnam (29). That's mean during this period the fluctuation and growing demand influenced by new policies and restrictions for Vietnam as compared to China.

The estimation of instability for export value, during period-I for China was 66.04 that is much higher than Vietnam (13.93) (Table-2). This implies that China faces many restrictions than Vietnam. In period-II the instability in export rice values was (40.79) and Vietnam was (43.72). This means that after 1986 China received stability in export value, while in Vietnam production and export of rice was increased as compared to China which showed that fluctuations in prices resulted in higher instability as compared to China.

Findings of Markov Chain Analysis

The direction of trade of China and Vietnam to adjoining countries had been presented in Table-3. It can be perceived that the probability of direction of the trade from Vietnam to China was stable. China was found a stable importer of rice from Vietnam with gained share of 99.9% as compared to neighboring countries such as Cambodia, Laos and Thailand. These trading partners were not a stable importer because these countries had been pooled under the category of other countries.

Table 3 – Direction of trade from Vietnam for export of rice (quantity), 2000-2015

n/n	China	Cambodia	Laos	Thailand
China	99.9%	0.5%	0.4%	0.0%
Cambodia	0.5%	0.0%	0.0%	0.0%
Laos	0.4%	0.0%	0.0%	0.0%
Thailand	0.0%	0.0%	0.0%	0.0%

Source: Authors calculations, 2016.

Overall, the results showed that export of rice between China and Vietnam is stable and in future these two countries could be one of the most stable traders of rice among each other.

Outcomes of Nominal Protection Co-efficient (NPC). The nominal protection co-efficient for export of rice from Vietnam to China was found to be lower than unity as shown in Fig. 5. The results implied that rice proved as a good exportable agricultural commodity. It was also observed through the foregoing results that indicated rice was price competitive enough in the international market. Furthermore in coming years, for domestic industry expansion the rice trade showed the existence of vast potential.

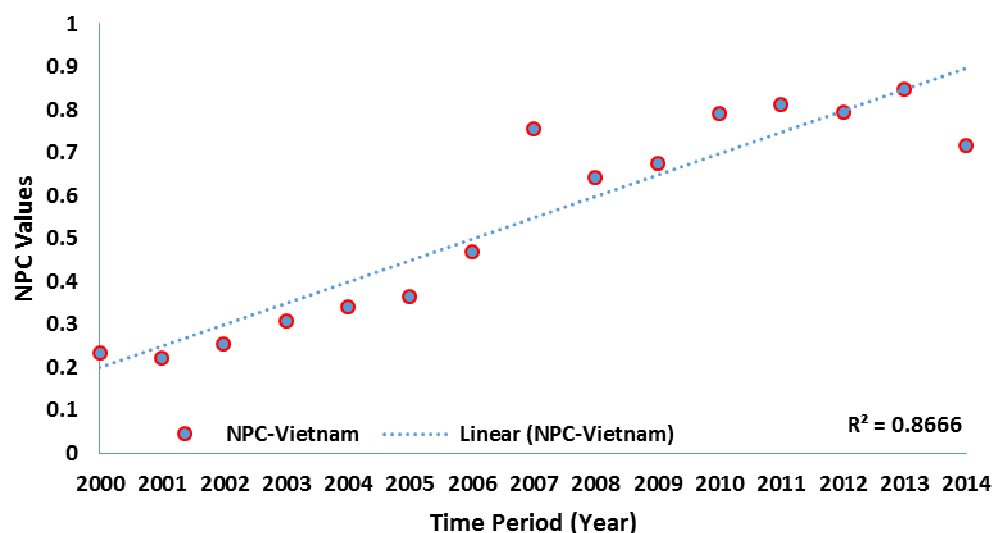


Figure 5 – The nominal protection coefficients for export of rice from Vietnam

The nominal protection co-efficient for export of rice from China was not found to be lower than unity as shown in Fig. 6. Most of the years were found greater than unity, while the year 2003, 2004, 2011 and 2014 were found lower than unity, during this period the export of rice was higher as compared to other years from 2001-2014. The trend of export of rice from China already discussed, which means the export of rice from China may decrease in next few years due to weather, high domestic consumption for a larger population or demand of other countries.

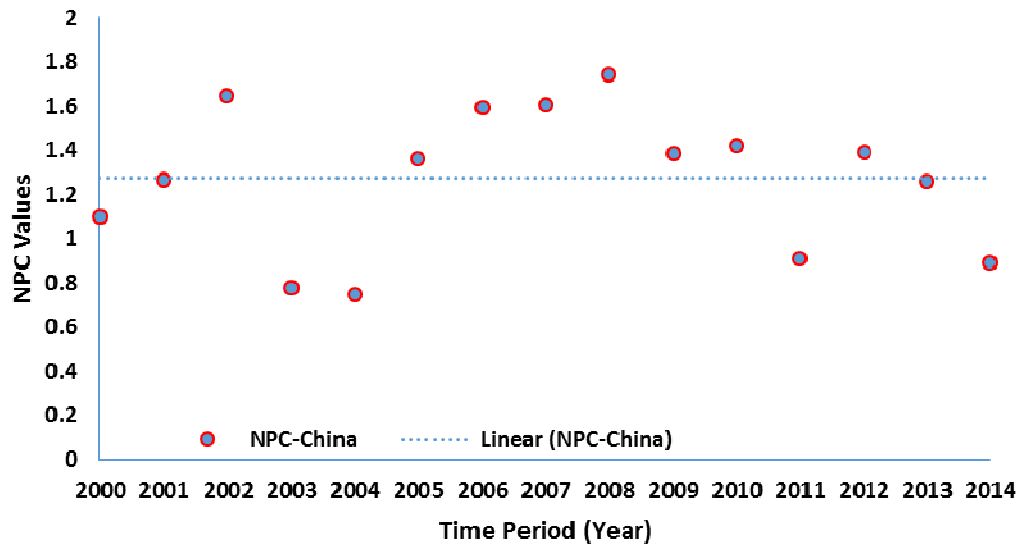


Figure 6 – The nominal protection co-efficients for export of rice from China

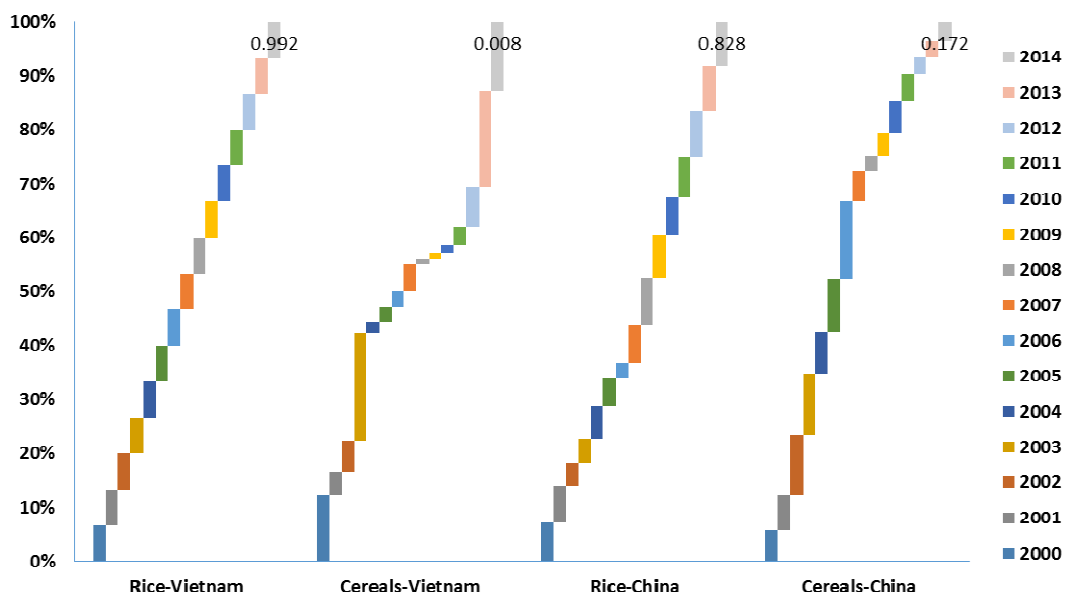


Figure 7 – Comidity concentration

The commodity concentration. Figure 7 shows that the concentration of Vietnam rice as compared to China rice stable in all the time period, while china rice showed the fluctuations from 2000 to 2006. The commodity values increasing and decreasing pattern were found during the time scale. The concentraion of Vietnam rice among the cereals was found higher duirng all the time period. The concentration of China cereals was higher in the begening of the time period, while after it loose its concentration.

CONCLUSION

This comparative study was carried out with a focus to measure the performance of rice export between China and Vietnam. On the basis of analysis it was observed that the rice area and yield in Vietnam showed a continuous increase; whereas in the case of China increase in domestic demand was observed. The trade volume had also been increased and this increase had been the result of the green revolution, the introduction of new rice varieties with higher promising yields, better supply of agricultural inputs, a sharp increase in the international rice prices and many other factors. The privatization of the export sector of rice has also helped a lot to promote rice exports from Vietnam which motivated farmers to grow rice as the better prices were expected. The trend analysis indicated that Vietnam export of rice may increase in next few years and in the case of China the export of rice may decrease in future. The growth rate analysis of both countries suggests that export quantity of rice were found to be 2.70% (China) and 6.10% (Vietnam) which states that generally, an increase in the prices of rice in the international market.

In terms of instability, during the first period, China was more instable as compared to Vietnam in terms of quantity and value, while during the period-II China was more stable than Vietnam.

The direction of trade between both countries showed the significant results as compared to other neighboring countries. The nominal protection co-efficient for export of rice from Vietnam were found to be lower than unity, while for China most of the year was found greater than unity. This showed that the export of rice from Vietnam is a good exportable product as compared to China. The commodity concentration of Vietnam rice was more stable among the cereals than China. China rice concentration showed the instable concentration as compared to Vietnam. Overall rice growing area in Vietnam was lower as compare to China. In order to bridge the gaps of production area and yield, several steps can be taken. For this purpose stable performing varieties can be introduced and as well as the hybrid rice varieties give more production. The effective measures to prevent the weeds can be taken to increase the production and reduction of the losses. Better irrigation facilities can also be very useful to increase the production and yield. The reduction in export restrictions between two trading partners can further improve the situation.

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DOI <https://doi.org/10.18551/rjoas.2017-01.19>

**ENVIRONMENTAL INFLUENCE ON BUSINESS AND STRATEGIC PLANNING
OVER THE SMALL-MEDIUM ENTERPRISES' PERFORMANCE: A STUDY ON FEATURED
PRODUCT PRODUCED BY SMES IN SIDOARJO, INDONESIA**

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ABSTRACT

The improvement of competitiveness of small enterprises often finds an obstacle as the economics scale and the resources are smaller than the large business. SME has to be able to make a strategic step as a basic of the right decision making process so as being able to survive and have a high competitiveness. SME which now attempts to improve its performance has to pay attention several factors that can give contribution for its success, that is the factor of business environment used as a basic of strategic planning arrangement. The aims of this study are to: 1) examine and analyze if the business environment influences over the performance of SME in Sidoarjo district, 2) Examine and analyze if the strategic planning influences over the performance of SME in Sidoarjo district. Object of study of featured product produced by SME in Sidoarjo included in the area of tourism market is; Jetis batik village in Sidoarjo, home-based shoe and sandal manufacturers in Mojosantren village, Krian sub district, prawn cracker village in Kedungrejo village, Jabon sub district, Small scallop cracker village in Candi sub district, Leather craft industry in Kludan village, Tanggulangin sub district, and smoked fish village in Penatarsewu village, Sedati sub district. The results show that, firstly, environment business does not significantly influence on the performance of featured product produced by SME in Sidoarjo district, secondly strategic planning significantly influence the SME performance in Sidoarjo district.

KEY WORDS

Business environment, strategic planning, SME performance.

Small enterprises sector has a big role in the economics development of a nation (Karjantoro, 2010). However, the improvement of small enterprises competitiveness often find obstacles since the economics scale and the resources are smaller than large business. In relation to the competitiveness at micro level (company or firm level), competitiveness is commonly defined as a capability of a company in a basic mastery, establishing and maintaining marketing position, overcoming change and market competition, and capacity to sell products in an advantage way. To have a competitive advantage, a business person or an entrepreneur need to create a quality product so as it can be a featured product of a region. Sidoarjo district has a featured potential in the industrial sector spread over several regions that most of them are tourism market area. In this study, the writer take an object of study on the featured product produced by SME which is included in the area of tourism market, they are: Jetis batik village in Sidoarjo, home-based shoe and sandal manufacturers in Mojosantren village, Krian sub district, prawn cracker village in Kedungrejo village, Jabon sub district, Small scallop cracker village in Candi sub district, Leather craft industry in Kludan village, Tanggulangin sub district, and smoked fish village in Penatarsewu village, Sedati sub district. There are several reasons why this study is conducted on the SME, one of them are the performance of SME is tending to be better in term of producing productive manpower. As a part of its dynamics, SME often reaches the improvement of productivity through investment and technological development, as well as having superiority in term of flexibility compared to a larger business (Berry et al, 2001). External business environment has a big role to influence the managerial decision-making process and organizational structure (Keats & Hitt, 1988), thus external environment business is important to be monitored and analyzed. A company has to be able to adapt to the environmental change, it

is like a theory proposed by Hopkins & Hopkins (1997) and Miller and Cardinal (1994) that a company has to be able to overcome and adjust the change of turbulent environmental condition.

According to the studies conducted by some of experts, strategic planning defeats non-strategic planning. It means that a company having a formal plan is more excellent than informal plan as the planning process require embodying ideas and goals to be taught maturely (Hopkins & Hopkins, 1997).

SME has to be able to make a strategic step as a basic of the right decision-making process so as being able to survive and having a high competitiveness. The rapidly environmental change will affect the arrangement of strategic planning becomes harder. It is as proposed by Glaiser and Buckley, 1996; small enterprises need to keep the flexibility to adapt over the environmental change.

The performance of manufacture is influenced by three factors, namely company affectivity, growth, and profitability (Alfred, 1997). The effectiveness of company are comprising product, the success of new product, and always maintaining customers. While the growth or portion comprise the target of market portion, the growth average, and sales improvement. Profitability comprises equity, gross profit, and return of investment. Musran Munizu (2010) explained that through the use of descriptive analysis data and structural equation modeling, it can be concluded that external factors have a significant and positive role at the micro, small and medium enterprises. However, Yan (2010) found a different result by using a survey methodology of structured questionnaires and regression analysis which measures the level of relationship of environmental change by using an indicator of condition of economic, production, business improvement, and performance which uses an indicator of sale growth and profitable growth. The result of this study concludes that environmental change is not significantly related to the performance of SME. The same statement was proposed by Hafsah (2004) in that she said that a problem commonly faced by SME was an unhealthy competition and inadequate facilities and infrastructure as well as not integrated development. SME trying to improve its business performance has to pay attention several factors which are able to give contribution for the success that is business environment factor used as a basic of strategic planning arrangement like theory proposed by Prevos (2005) that strong planning relationship and profitability appears when a company faces the environmental change.

According to the background and ideas which has been explained above, it becomes a beneficial and important need to analyze and examine if business environment and strategic planning significantly affects over the performance of SME in Sidoarjo district.

LITERATURE REVIEW

Several results of study have shown that there are relationship between business environment and company performance like a result of study conducted by Cohen (2001) in Rofiaty stating that environment positively affected over the performance. The result are supported by the study conducted by Handayani (2013) and Aldehayyat (2011), the result shows that macro environment consisted of the power of political and legal environment, economics environment, technological environment, and socio-culture environment are significantly affected over the performance of SME. It was different with the study conducted by Willie and Shirley (1997) in Rofiaty that environmental factor (complexity and change) is not positively affected over the performance. The same opinion in the journal of "Competitive Strategy and Business Environment: The Cass of Small Enterprises in China" Yan (2010), stated that environmental change did not significantly connected to the construction of performance of SME. Li & Atuahene-Gima (2001) also stated that environmental factor was not connected with SME performance.

According to Arasa & K'Obonyo (2012), there was strong relationship between strategic planning and company performance. Another study conducted by Anders mellquham-Schmidt (2010) stated that through statistical procedure called meta-analysis can be stated that strategic planning factor has positive effect in the company performance. The result

above supports a conclusion which has been stated in the study conducted by Balasundaram (2009), strategic planning has a significant contribution in its relationship with small enterprises performance. Besides, Kraus (2006) found that formality of strategic planning has a positive and high significant influence over the profitability.

According to Wright et al. (1996:4), Wheelen and Hunger, (2000:8), and Hitt et al (1995:6), business environment or organizational environment could be divided into two parts, namely internal environment and external environment. Internal business environment comprise: structure, culture, and resources (Wheelen & Hunger, 2000). Strategic planning is a method which involves a thought through a creation, the invention of managerial function is the appearance of planning expert. Planning system is a good strategy as a stage of strategy that will be implemented by business person and manager of a company to direct to not make a mistake (Mintzberg, 1994). Main strategic or long term strategic has to be based on main idea of how a company can compete in a market. The main idea is a popular business strategy widely known as Generic strategy which was created by Michael Porter. To reach a performance that might be the highest, each of strategy selection need to be connected with the right resource (Booch et al., 1999).

CONCEPTUAL FRAMEWORK

The study being conducted focuses on business environment variable, strategic planning, and the degree of influence into the variable of SME performance. The researcher is interested to analyze the level of relationship between each of variable which is based on a condition in the industrial sector of featured product in Sidoarjo district, in which there is still a sale of production result that is not optimally absorbed yet by market.

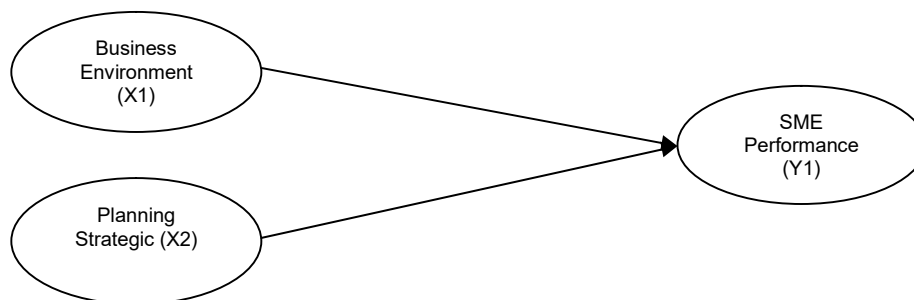


Figure 1 – Relationship between Variables

Hypothesis: The relationship of Business Environment over the SME Performance. According to the study conducted by Vijfvinckle, Bouman, and Hessels (2011), it showed that environmental dynamics significantly affected in a positive way toward the performance of SME. The same result was also proposed by Cohen (2001) that environment is positively influenced over the performance, so as this study propose the same hypothesis.

H1: The higher the change of business environment, the higher the performance of SME.

According to the study conducted by Falshaw and Glaister (2005), strategic planning has a positive relationship over the performance of company. In this case Schwenk and Shrader (1993) also stated that strategic planning has a positive effect over the performance of small enterprise. According to Arasa and K'Obonyo (2012), there is a tight relationship between strategic planning and company performance. In reference to the study conducted by Aldehayyat and Twaissi (2011), there is tight positive relationship between strategic planning and company performance.

H2. The increasing of strategic planning process will decrease the performance of SME.

Operational definition:

Business Environment. Business environment uses a dimension that comprises:

a. External environment is an environment outside the organization that need to be analyzed to determine opportunities and threat which will be faced by company. To measure the external business environment it uses an indicator developed by Crijns and Ooghi (2000), Zhang (2001), Wilkinson (2002) and Pelham (1999). There are 3 indicators used in this study, they are:

- Customers;
- Suppliers;
- Competitors.

b. Internal environment is an environment inside the organization and it needs to be analyzed to know the strength and the weakness faced by a company. To measure the internal business environment, it uses an indicator developed by McCommick et al (1997), Laceiva (2014), and Maupa (2004). Indicators used in this study are:

- Human resources aspect;
- Financial aspect;
- Technical aspect;
- Market and marketing aspect.

Strategic planning. According to Kaye (2005) strategic planning is a systematic process agreed by organization and to build involvement between the main stakeholder about the intrinsic priority for its mission and being responsive to the operational environment. According to the study conducted by Baringer & Buedorn (1999) through the use of four indicators from the implementation of strategy planning, those which is considered to have the most relevant in encouraging the act of entrepreneur are:

- Competition intensity;
- Locus of planning;
- Planning flexibility;
- Horizon planning.

Performance. Performance can be defined as a benchmark of success and development of small, medium, and large enterprises. The measurement of the return of investment, growth, volume, profit, and manpower of company is generally performed to know the company performance (Kaplan and Morton, 1992). According to the literature and empirical study which have been available, there are several indicators used in this study to measure the company performance, namely:

- Sales growth;
- Profitable growth;
- Asset growth.

RESEARCH METHODS

This was explanatory research, meaning to give explanation of causality relationship of each variable through hypothetical experiment and performing explanation at once. This study used quantitative method. It was undertaken in several sub districts of Sidoarjo district, namely, Jabon, Sidoarjo, Tanggulangin, Sedati, Candi, Krian, Prambon. This study was conducted for six months. The data analysis method used in this study was Partial Least Square by using SmartPLS 2.0 M3. program (Ghozali, 2011). An analysis through this approach was quantitative analysis.

RESULTS AND DISCUSSION

Hypothesis 1: The higher the change of business environment, the lower the performance of SME. Correlation coefficient of 0.091 having positive mark and t-statistic value of 1.255 > 1.960 or p-value of 0,210 < 0.05 indicates that analysis result between business environment and SME performance is proven to have positive but not significant correlation. The higher the value of business environment, the lower the performance of SME. For that reason, the sixth hypothesis proposed for this study can not be accepted or

supported by empirical fact.

Hypothesis 2: The higher the strategic planning process, the higher the performance of SME. Correlation coefficient of 0.275 having positive mark and t-statistic value of $3.420 > 1.960$ or p-value of $0,001 < 0.05$ indicates that analysis result between strategic planning and SME performance is proven to have positive and significant correlation. It means that the value of strategic planning which becomes higher can increase the performance of SMEs. So that, the seventh hypothesis proposed in this study is acceptable or supported by empirical fact.

SMEs in Sidoarjo do not have yet strong competitiveness to face the competition since the low entrepreneurship chiefly to make innovation. Secondly, the lack of level of expertise in facing the organizational and management problem so as it is not able to efficiently create a flexibility product which has a competitive value. Thirdly, the lack of networking so as there is limited access of information, market, and input compared to small enterprises in other cities. Fourthly, the limited linkage causes inability to exploit well, regional and national market. The last, access of financial which is less favorable to the SME owner will be hard to quickly develop. The result of this study support the study conducted by Shirley (1997), Li & Atuahene-Gima (2001), and Yan (2010) stating that environmental factor was not positively influenced over the construction of SME performance.

Strategic planning system of SME in Sidoarjo resulting in coherent strategy target will promise the augmentation of long-term financial performance. It happens because manpower are motivated to find a strategic initiative that functions to realize a strategic target in the perspective of financial, customer, internal business process, learning, and growth. The coherence of strategic target promising an augmentation of financial performance is extremely needed by company to be put on the competitive business environment. The balance of strategic target produced by strategic planning system is important to result in long-term financial performance. The result of this study support the finding of Kraus (2000), Balasundaram (2009), Arasa & K'Obonyo (2010), Aldehayyat & Twaissi (2011), Glaister (2005), Mellquham-Schmidt (2010) stating that strategic planning factor has a positive influence in the company performance including small and medium enterprises.

CONCLUSION

From the findings, the conclusions can be made:

Business environment which is measured from suppliers, competitors, aspect of human resource, marketing aspect and marketing indirectly give an influence in improving the performance of featured product produced by SME in Sidoarjo district;

Strategic planning measured from the intensity of planning, planning of locus, planning flexibility, and planning horizon is directly able to influence to increase the performance of featured product produced by SME in Sidoarjo.

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DOI <https://doi.org/10.18551/rjoas.2017-01.20>

INFLUENCE OF IMAGE, SERVICE QUALITY, TRUST, AND EMPHATY ON REVISIT TO THE TOMB OF GUS DUR IN EAST JAVA, INDONESIA

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ABSTRACT

Indonesia is rich with prominent figures tombs with high potential for being religious tourism destination. Mostly those that are respected for their contribution to Islamic religion spreading in early times. In effect, the present society knows them from historical literature, or from the remaining mosques or other buildings. In contrast, most of Indonesian people know Gus Dur directly, as he once the chief of the largest social organization (Nadhlatul Ulama, 1989-1999) and President (1999-2001). Even though he was not spreading Islamic teachings as most Walis had done in early times, many consider him as one, since he brings the messages with him such as equality, democracy, tolerance and strong civil society which are thought as integral part of religiosity. Hence, the study applies relevant variables covering image, knowledge, trust and empathy related to Gus Dur figure that can lead to revisit behavior, and also covers serqual to represent conditions around the tomb as its first purpose. The second one is to explore and compare two frameworks of revisit behavior embedded in the model, those are trust-empathy-revisit behavior and knowledge-empathy-revisit behavior.

KEY WORDS

Image, trust, empathy, knowledge, serqual, revisit behavior.

Several countries in Asia have histories of Islam religion spreading in early times. Prominent figures with undeniable contribution of Islam religion spreading were called wali (s). Wali in Arabic language means ones the God loves for their total devotion (or Sunan in Javanist language, title given to respected figures in 15th and 16th centuries). Their tombs surprisingly become the magnet for tourism. People respect and appreciate their contribution in Islam religion spreading by developing pilgrimage habit to their tomb. This pilgrimage activity itself relates to one of the religion's norms that consider making a journey from one a place to another for obedience to God purpose as a noble thing.

Governments nowadays turn on Walis' tombs for their economic buffer of the government revenues as the number of pilgrims are increasingly growing. Local religious tourism centered on Walis' tombs also has an effect on people's economic dynamism living nearby. It can be in the form of a spontaneous market around the tomb, or others such as homestays, hotels, tour and travel agencies, or kiosk and restaurants. This kind of tourism has a growingly stronger attraction and has prospect to replace nature tourism as a dominant tourism with largest income prospect.

One of those countries blessed with abundant tombs are Indonesia. With so many Wali's tombs scattering across Java and Bali, one that strikes most attention is Gus Dur's. While, thought, Gus Dur has relation to historical Wali, he lived in a much far recent. He died in 2009. Some of the people, instead many do not, believe that Gus Dur was also a Wali. According to them, Gus Dur has several characteristics commonly attached to Wali. His entire life was devoted to improve society position vis-a-vis to government, support democracy, and equality of all social groups that were previously accustomed to segmented and segregated way of life that many believe that Gus Dur brought with him the messages

from God. Some of the messages are democracy, tolerance, equality, and strong civil society.

One big different separating Gus Dur from most Walis is that so many people has recognized Gus Dur, as they witnessed his struggle to improve social life his living time. In contrast, all people in Indonesia know Walis only from the historical books and remnants such as tombs and mosques. Most people in Indonesia know well Gus Dur as he was one president in 2009, the grandson of the biggest religion social group known as Nahdlatul Ulama (NU), and once the leader of this organization for three period (1989-1989, 1989-1994, 1994-1999).

The NU has large members. With this, NU has unavoidably influence in social and political issues. It should be unsurprising that NU has a political party representing its interests in government known as PKB (nation awakening party). In the middle of reformation movement, by means of this Party, Gus Dur seized power as president in 1999.

Before assuming presidency, Gus Dur has tried to strengthen the position of society vis-à-vis government which was at that time was characterized as building a strict authoritarian power. He intended to form a strong civil society which has capability to develop itself in the face of government which often stifle this prospect to keep it in power

During his presidency, Gus Dur removed all rules that hold down the freedom of certain minority groups. For example, thanks to Gus Dur, Chinese ethnics can perform their religious rituals and customs. He also defended disadvantage small religious groups such as Jemaah Ahmadiyah and many others reproached for their deviation from true Islam's principles. During this time, he tried to make a shake-up within government such as, removing some ministries he assumed to be full of inefficiency and corruption, skipping hearing with parliamentary he thought as standing in the way of his plans, and sacking some political party-related ministers. Many high officers and his allies in government felt hurt and fought back against him. As the dissents unite the power, they cooperate to make Gus Dur fall down.

With this as a background, it is reasonable to assume that people commonly has formed image and harbored knowledge of Gus Dur, and trust as well based on reputation Gus Dur has molded during his leadership. Variable empathy is applied to represent people's alleged silent support to Gus Dur. This variable is thought as related to the fact of Gus Dur's tomb largest visitors and their amalgamate nature. The present research tries to apply those variables and design a model to explain revisit behavior among pilgrims to Gus Dur's tomb. To factor in the influence of conditions around the tomb, the research includes variabelserqual. This is especially so as the tomb has special characteristics such as simplicity, far distance between the place and parking lot, and amalgam of pilgrims.

The focus on revisit behavior is based on data from East Java Tourism Office that reveals that the number of pilgrims visiting to Gus Dur's tomb averages 8.000 people a day. It means the number of pilgrims reaches to 150 thousands in a month, the number that exceed the average number visiting other Walis' tombs such the tombs of Sunan Bonang, Maulana Malik Ibrahim, Sunan Ampel, Sunan Drajat, and Sunan Giri in East Java (TRIBUNnews.com Network, 2014).

Sunan Bonang's tomb in Tuban which is claimed as a crowded religious destination in East Java only attracts 2,231 million of visitors a year, followed by Maulana Malik Ibrahim's tomb in Gresik with 1,439 million, and Sunan Ampel's tomb in Surabaya with 1,273 million.

All variables in the present study covers the time during, before and after Gus Dur leadership, and condition around his tomb. The study assumes that all variables mentioned above have interplay effect that can lead to revisit behavior today, that is the main aim of this research.

Tourism literature is still thin. It is worsen by the fact that there is still short of research exploring religious tourism by means of quantitative methodology. Religious tourism research is replete with psychological and sociological values alien to management and economics science, and qualitative approach is apt to reveal hidden phenomenon (neumenon). The present study tends to fill the gap, by applying variables worth to be considered by religious tourism management and government, and even entrepreneurs as long as it has relevance.

Moreover, there is lack of religious tourism literature exploring brand figure. Indonesia is rich with tombs of well-known figures which either has been or can be developed to be tourism destination. Most tourism literature explores issues of worshipping places, religiosity, and government policies.

Variable empathy is commonly found in psychological and sociological literature, and quite rare in tourism literature. Empathy in economic and management terms can play parts for products with which consumers emotionally can relate, especially those that enable them to bring up the values of nationalism, fairness, identity and existence, defending they thought need to be defended, environment awareness, respect, appreciation and others.

Research Questions. With background outlined above, the present study intends to explore the following research questions:

1. Does image, and serqual have direct and significant effect on revisit behavior of pilgrims to Gus Dur's tomb?
2. Does trust have mediating effect to relationship between image and empathy?
3. Does knowledge has mediating effect to relationship between Serqual and empathy?
4. Does empathy has mediating effect to relationship between trust and revisit behavior?
5. Does empathy has mediating effect to relationship between knowledge and revisit behavior?

LITERATURE REVIEW

Image. Hogan (2005) holds that image of a brand is formed from all sorts of information concerning product, service and company of the brand. Consumers obtain the information from: firstly, direct experience that influence satisfaction and expectation. Brand is not only made to work optimally and provide the base for good performance, but also to grasp and reflect desired values so that fulfill consumers' personal needs, important for the relationship building between them. It is possible so through perception purposely molded by the company owning the brand by means of many kinds of communication. To most of brands, media and environment to which brand is offered to the consumers can communicate the available attributes. All media have role in nurturing positive relation to consumers. For optimal result, all these factors should work synergistically in such a way that they make a total picture of the brand. This whole picture is called brand image.

Brand image reflects the promises, superiorities and personal characteristic perceived by consumers. Davis (2000) pinpoints that attributes of brand image include *brand associations*, that is the characteristics that are associated to the brand by consumers, perception of the promises made by the brand, and belief that brand will continuously fulfill consumers' expectation. According to Davis, another equally important element is *brand personality*, that is variety of human characteristics encapsulated into the brand by consumers, covering personality, characters, gender, size, form, ethnicity, intelligence, socio-economic status, and education. Personalities of the brand determine its strength and weakness amid other brands, its special position in the wilderness of competition, and its chance to win consumers' favor over others. David Ogilvy (in Biel, 1999: 161) in American Marketing Associations (AMA) in 1955 argues that brand image "*is the picture people carry around in their heads of a brand, it is the intangible sum of a product's attributes: its name, packaging, and price, its history, its reputation, and the way it's advertised*".

Aaker (1991) considers brand image with personalities as a requisite to be accounted as *brand equity*, and defines a brand as a series of human characteristic associated to the brand. According to Aaker (1997), personalities consist of five dimensions: *competence, sincerity, excitement, sophistication, and ruggedness*.

Empathy. Early perspective pictures empathy as putting cognitively oneself on other's psychological perspective without involving emotion feeling, or one's effort to grasp other's psychological condition. Spiro (1992) defines empathy as comprising of pity feeling, sincerity, and respect to other. Affective feeling put forward by Hoffman (1984) and Eisenberg and Strayer (1987) describes empathy as a affective response, or emotional response, to other

people suffered by certain problem. Batson et al. (2002) enriches this affective definition by emphasizing that affective reaction to other people suffered by certain people as an empathy feeling. According to them, empathy motivates people to help others in need.

To settle this cognitive and affective debates over empathy definition, Davis (1983, 1996) argues that empathy is a multi-dimension process, involving a set of intertwined constructs. He defines empathy as a cognitive process in putting oneself on other's perspective (perspective taking), as affective experience in providing affective attention, and as affective experience in the form of worry or distress (personal distress). Perspective taking and role taking refer to the process during which an observer tries to comprehend other through bonding perception, be it kinship, friendship, acquaintance, commonness, or imagination of other's perspective.

Empathy attention and personal distress refer to experience someone has in responding to other people's experience. Empathic attention is emotional reaction in the forms of pity, sympathy, gentility and concern about other people. Personal distress refers to inclination for one to experience anxiety, tension, and uneasiness as seeing other's pressure and discomfort. Drawing on Batson's theory, Davis finds that perspective taking and empathic attention are positively related and that personal distress and empathic attention are negatively related.

For the purpose of the study, the present study applies variable constructs covering perspective taking and role taking from Davis (1980) and McBane (1995).

Trust. Gefen, Karahanna and Straub (2003b) take trust as a set of beliefs in ability, benevolence, and integrity of the trustee as distinct from consumers' *behavioral intentions*. Characteristics of brand leading to trust include predictability, having reputation and being competent. For the purpose of study, the present study applies three constructs from Aaker, DA and Alvarez del Blanc, RM., 1995; Lassar, W., Mittal, B., and Sharma, A., 1995; and Yoo, B., Donthu, N., and Lee, S., 2000 representing all elements above.

Knowledge. Knowledge are comprised of two dimensions, namely familiarity and past experience. Millman and Pizam (1995) applies prior visitor number as a measure of familiarity and find that familiarity has a significant effect on the desire and intention to visit a destination. A study examining the reasons driving Arabian people to visit Europe finds that familiarity is the main one (80% respondent) (Hales and Shams, 1990).

Past experience is among factors with significant influence on decision-making process. Bettman and Park (1980) prove that consumers who do not have prior experience make harder consideration in decision-making process than otherwise.

This study follows the constructs from Wang et al (2009). The variable consists of four construct representing knowledge, familiarity, and past experience.

Service Quality. Service quality has been identified as an important factor in building competitive edge and superiority. Parasuraman et al. (1985) list ten determinants of service quality (reliability; responsiveness; competency; access; hospitality; communication; credibility; security; understanding consumers; and tangibles). They then makes a simpler five dimensions of SERVQUAL (Parasuraman et al., 1988, 1991), those are:

1. Tangibles, referring to physical facilities, equipments, personnel and communication means;
2. Reliability, ability to provide service as promised accurately and reliably;
3. Responsiveness; quick in responding complaints and handling problems;
4. Assurance, referring to knowledge and hospitality necessary in building trust and belief; and
5. Empathy, referring to special attention to consumers.

This study applies constructs of Serqual from Parasuraman et al (1988, 1991) representing all this elements. This variable consists of five constructs.

Loyalty. The most - researched dimension of loyalty is repurchase intentions and word-of-mouth (Swan and Oliver, 1989; Zeithaml, 2000; Zeithaml et al., 1996). Consumers' loyalty on a certain service or firm (Andreassen and Lindestad, 1998). Buying continuously, using a service repeatedly, and spreading positive word-of-mouth are main indicators of consumers' loyalty (Andreassen and Lindestad, 1998; Selnes and Hansen, 2001; Zeithaml, Berry, and

Parasuraman, 1996). For the purpose of study, the study chooses the first indicator with adaptation, namely revisit. The indicators are taken from several researchers, including Zeithaml et al., 1996; Srinivasan et al., 2002, and McKinny et al., 2002).

RESEARCH CONCEPTUAL FRAMEWORK

Research Conceptual Framework. Conceptual framework is designed to provide a clear description as to which variables standing as independent, dependent and mediating. These positions, relations among them, and hypothesises on which to sustain them are based on existing theoretical and empirical studies. They are analytically elaborated as following.

Image, Service Quality and Loyalty. Image is generally defined as overall impression visitors have on a certain destination (Rynes, 1991). Image is considered as a relevant factor in a final evaluation of a service (Bitner, 1995; Gronroos, 1984). Moreover, literature concerning service has formed a strong relation between image and perceived service quality (Flavian et al., 2009). Previous researches have confirmed (Cheng, T., Lai, L., and Yeung, A. 2008), (Hu, H.H.S., Kandampully, J., and Juwaheer, T.D. 2009), and (Ladhari, R., Souiden, N., and Ladhari, I. 2011). Literature has shown ample evidence on the potential effect of perceived service quality has on consumers' future behavior (Rust and Oliver, 1994; Taylor and Baker, 1994).

In specifying antecedents of loyalty, researchers consider image as a significant component. Fredericks and Salter (1995) consider image along with price, innovation and service quality determine the level of loyalty. In the same vein, European Satisfaction Index (EPSI) includes image as determinants affecting service value and consumers's loyalty (Eskildsen et al., 2004). A destination needs a positive image to hold its market-share (Crompton, 1979).

However, relation between image and loyalty have mixed results: Sirgy and Samli (1985) report that there is direct relation between image and loyalty. Bloemer et al. (1998) study in banking industry reveal indirect relation where the influence of image is mediated by service quality. In tourism field, Kandampully and Suhartanto (2000) find that image constitutes as one of two most important factors in determining repurchase and revisit.

Empathy and Loyalty. Few studies have explored relationship between empathy and loyalty. Shin et al (2011) have shown significant relation of empathy and luxury brand loyalty. Taute et. al. (2011) confirm that empathy can lead to behavioral intention. Kim et al (2007) show that empathy drives Japanese tourist keep flowing to Korea to see drama shooting sites.

Trust, Empathy and Loyalty. Most of the existing researches confirm relation between trust and loyalty. Garbarino and Johnson (1999); Chaudhuri and Holbrook (2001) emphasize the importance of building trust as determining consumers loyalty. Roodurmun and Juwaheer (2010) hold that destination loyalty is influenced by trust, and that tourists tend visit destination that they see trusting and reliable (Ekinici and Hosany, 2006). Destination can build a strong emotional relationship with consumers, which in turn can lead to stronger loyalty (Hsu and Liping, 2009).

Only small body of research reveal the gap between trust and loyalty. Valvi and West (2013) exploring the relationship between e-trust and e-loyalty find trust does not necessarily lead to loyalty. In their study, they think it may due to customers' fear of online fraud, as buying online is not secure (Hoffman et al., 1999). As a result, online customers are harder to trust an online transaction compared to offline. Andreasse and Lindstedt (1997) exploring loyalty in B2B environment in Australian SMEs find no significant relationship between trust and loyalty. Shainesh (2012), exploring the effect of trustworthiness and trust to loyalty, only find the association is partially supported. Herington and Weaven (2007) also find no association between trust and loyalty. This small fragment of researches lend a base for the present research to explore the effect of trust on loyalty in religious tourism field.

The present study observes that trust mostly engender emotional results such as attachment, commitment, affect, intimacy and others that are prerequisite for repurchase or revisit. Trust itself is cognitive and affective attitude that is close to emotive feeling.

This study puts forward empathy variable to mediate relationship between trust and loyalty. Some works have shown relationship between trust and empathy. One obvious example is the work of Boitor (2012) who proves relation between relationship trust and relationship intention which can be identified as loyalty, mediated by empathy.

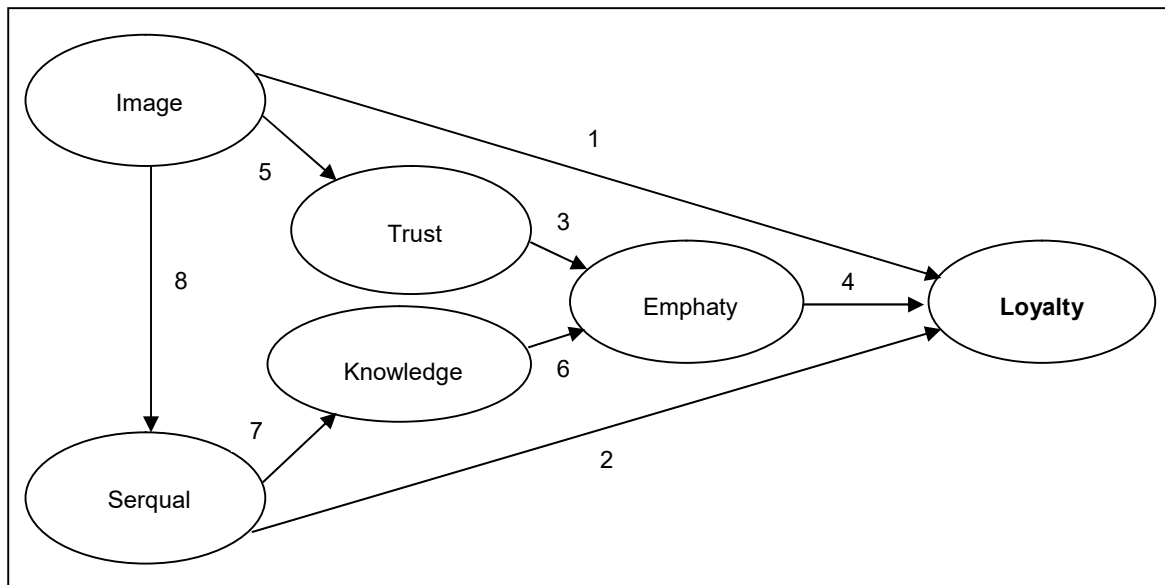
Knowledge, Empathy and Loyalty. Different from trust where the bulk of researches prove significant relationship between trust and loyalty and small part prove otherwise, those exploring one of knowledge and loyalty provide somewhat mixed results. They quite depend on the nature of company, industry, types of consumers and markets.

Despite many researches reveal significant relationship between knowledge and loyalty, a similar share of the body reveal the opposite. For instance, Yang and Wang (2010) exploring relationship between consumers' knowledge and loyalty to a store composing three stores selling products of respectively higher quality and higher price, of medium quality and priced, and lower quality and priced show that knowledge does not have direct effect on individual store loyalty and on general store loyalty as well. Jamal and Anastasiadou (2009) explore the relationship between consumers' expertise and loyalty in banking service sector. They define expertise as consumers' ability to perform product/service related tasks successfully and their understanding of and knowledge about various attributes in a product/service category (Alba and Hutchinson, 1987; Jamal and Al-Mari, 2007; Jamal and Naser, 2002; Sheth et al., 1999). They find that knowledge does not have a direct effect on loyalty, which means that a higher knowledge on the part of consumers regarding to the service might lead to decreased loyalty. It lends support from Wirtz and Mattila's (2003) thinking that individuals with the higher levels of knowledge and expertise would have lower risk perceptions and switching costs, and hence, would exhibit decreased loyalty levels. Partial effect is also found in some parts of researches. Lee and Hsu (2010), for example, who explore the effect of brand knowledge on retail service brand loyalty find a partial correlation of the two for convenience store, but significant correlation for cosmetic store.

This study puts forward empathy variable to mediate relationship between knowledge and loyalty. Some works have shown the relationship. One obvious example is the work of Shin et al (2011). While they have shown significant relation between empathy and luxury brand loyalty, they also prove that other variables along empathy including congruity with internal self which can be identified as consumer's familiarity have effect on luxury brand loyalty through empathy as a mediator. Human et al (2011) have shown significant relationship between brand knowledge, brand affect and brand loyalty. They define brand affect as the ability of the brand to evoke positive feelings and emotions from consumers in which empathy might be classified.

Image and Trust. Many studies have confirmed the relationship between image and trust. (Lin and Lu, 2010) surveying consumers of online tour agencies in Taiwan identify that corporate image composed of institutional image, functional image and commodity image all have significant effect on loyalty. In similar vein, Hog et al (2010) confirm that Islamic bank image in Malaysia have significant effect on Islamic bank trust (Chen and Phou, 2013) show that there is relationship between destination image and destination trust. It can be inferred that image might lead to trust.

Serqual and Knowledge. Some works already confirm relationship between serqual and knowledge. Sreejesh et al (2015) imply the relationship between serqual and knowledge through the application of service innovativeness, self-congruity, and functional congruity which is moderated by prior experience. O'Neil and Palmer (2005) have shown the relationship between Serqual perception and experience which is part of consumers' knowledge. Otim and Grover (2006) have explored the effect of post-purchase service which implies relation between serqual perception and experience and knowledge on repeat purchase intention. Thus it can be inferred that relationship between Serqual and knowledge has been well established.



Sources: Faullant et al. (2008), Giovanis et al. (2014), Feng et al. (2003), Shin et al. (2011), Chen & Phou (2013), Schwartz (2002), Jingjun et al. (2011), Castro et al. (2007)

Figure 1 – Research Conceptual Framework

Research Approach. This research falls into *causal study* as it intends to explore the effects and causal relationships among applied variables through hypotheses testing (Sekaran and Bougie, 2013). Especially, it intends to explore and analyze the interplay relations among variables covering image, knowledge, serqual, an trust that can lead to revisit behavior among the pilgrims of Gus Dur, tomb in Jombang Regency. Hence, it applies quantitative method as it fits best to its main purpose.

The survey will be carried out at Gus Dur's tomb in Jombang Regency. The population covers all pilgrims present at the time survey conducted. The average number of pilgrims is 3,000. Early survey will be conducted for 7 days that the whole population amounts to 21.000.

To get the right sampling, the present study applies quota as its sampling method. To arrive at the right sampling number, Slovin formula serves best the purpose (Sekaran and Bougie, 2013). The formula is as follows:

$$n = \frac{N}{1 + N(e)^2},$$

where: n = Sample size; N = Population size; e = Leniency percentage is as much as 10%. Based on the formula, the appropriate sampling number for the study should be as follows:

$$n = \frac{21.000}{1 + 21.000 (0,1^2)} n = 99,5$$

The above number lead to 100. The present study consider 100 as its most appropriate number for the sampling.

The present study applies 5-point Likert scale ranging from highly disagree to highly agree (Sekaran and Bougie, 2013).

For instrument validity, the research applies factor confirm a tory factor based on the results of convergent validity and discriminant validity. For reliability, alpha Cronbach constitutes adequate reliability. SEM PLS enables for the study to perform the test of both. Besides, the tool is appropriate for prediction purpose which is important part of the study.

Table 1 – Appendix A: The Constructs of Variables

Variables	Constructs	Sources
Image	<ol style="list-style-type: none"> 1. Gus Dur has always a good impression 2. Gus Dur has a good image 3. Gus Dur has a better image than other figures 	Nguyen and Le Blance, G., 2001
Knowledge	<ol style="list-style-type: none"> 1. I am aware of Gus Dur's thoughts 2. I understand Gus Dur's attitude 3. I understand the background and direction of Gus Dur's thoughts 4. I follow all of Gus Dur' struggle 	Wang et. al., 2009
Serqual	<ol style="list-style-type: none"> 1. All Physical facilities around the tomb are convenient 2. The arrangement for the incoming and going-out pilgrims is positive 3. The arrangement of visiting hours is positive. 4. The layout of all physical building is positive. 5. The security around the place is positive 	Parasuraman et al, 1986; 1991
Trust	<ol style="list-style-type: none"> 1. I trust Gus Dur 2. I consider Gus Dur's thought as appropriate 3. I see Gus Dur's thoughts can potentially be solution to nation's major issues 	Aaker, DA and Alvarez del Blanc, RM., 1995; Lassar, W., Mittal, B. and Sharma, A., 1995; Yoo, B., Donthu, N., and Lee, S., 2000.
Empathy	<ol style="list-style-type: none"> 1. I particularly sensitive to pressures Gus Dur went through 2. The pressures Gus Dur went through disturb me 3. I understand Gus Dur's position when he got pressured 4. I understand Gus Dur more by imagining myself in his position. 5. When he got pressured it looks as if me who got pressured 6. I feel contribute to Gus Dur by supporting his thoughts. 7. It is hard to accept other ways of thingking different from Gus Dur's 	McBane, 1995; Davis, MH, 1980
Revisit behavior	<ol style="list-style-type: none"> 1. I like visiting Gus Dur' s tomb better than others 2. I intend to keep visiting Gus Dur's tomb as condition permits 3. I will recommend this destination when I join in a tour group. 	Srivivasan et al., 2002; McKinny et al. 2002

FINDINGS OF RESEARCH

Based on literature review, it can be seen that image has direct effect on revisit behavior. But through trust and empathy, the relationship between image and revisit behavior is stronger. It also holds to relationship between serqual and revisit behavior, where knowledge and empathy variables strengthen the relationship. For the case of Gus Dur's tomb, it is seen that empathy in latter case plays a bigger role that the former as bulk of literature has confirmed relation between knowledge, empathy and loyalty. Contrary to this, for former case only few studies confirm relationship between trust, empathy and loyalty.

Knowledge has proven to be more susceptible to bring up empathy, which together might lead to loyalty as many studies have confirmed. In Gus Dur's case, knowledge on Gus Dur's struggle during pre-presidency, presidency, and post-presidency provide a bigger propensity to bring up empathy among people living during those times. Many studies, however, show that knowledge does not necessarily lead to loyalty, such as Jamal and Anastasiadou's study (2009), Yang and Wang's (2010) and others. It is then seen that empathy serves full mediation in the relationship between knowledge and revisit behavior.

In the same vein, trust does not necessarily lead to loyalty, as several studies have shown such as Valvi and West's (2013), Shainesh (2012), Andreassen and Lindested (1997), Herington and Weaven (2007) and others. Many studies have confirmed that relationship between trust and loyalty is more established than that between knowledge and loyalty. It is so due to the nature that trust tends to engender emotional attachment, commitment, and connectedness that are prerequisite for loyalty. It is then seen that empathy serves partial mediation in the mediation between trust and loyalty.

DISCUSSION OF RESULTS

For tourism involving figures as central magnet usually provide knowledge and trust for the people to consider revisiting. However, there is not assurance that both respectively determine people to revisit. Many studies have shown that there are no significant relationship between knowledge and loyalty, and trust and loyalty. While other factors might play parts, for prominent figures whose fight for social interest many people witness during their living times, empathy might play significant role.

Even the relation with loyalty is positive, knowledge and trust play part in the different weight in people's consideration to revisit. Trust tends to engender emotions and feeling such as emotional attachment, commitment, and connectedness that are prerequisite for loyalty. It means that trust is more able to skip empathy to arrive at loyalty than knowledge. It is seen then that empathy serves partial mediation in the relation between trust and revisit behavior, and serves full mediation in the relation between knowledge and revisit behavior.

If it is the case, than manager and administrator of prominent figure-based tourism destination should prioritize knowledge over trust by for example building museum and library related to the concerned figure, an institution to maintain figure's ideas and ideals, printing books concerning figure's biography and his/her ideas and others most of which have been materialized in Gus Dur's case. It might explain the large number of pilgrims visiting Gus Dur's tomb compared to other Walis' tombs.

Empathy might play a much lesser part for figures who lived at historic time when many current people are not present to witness. In this case, trust might have a bigger weight than knowledge for people to consider to revisit.

CONCLUSION

Empathy can be applied in loyalty framework in tourism sector, as long as figure, place, or nature-based tourism destination has concurrent time relation with people as its consumers. Gus Dur provides image, trust, and knowledge for people to revisit, and condition of serqual that is made to reflect Gus Dur's personality, reputation, and nationwide respect to his struggle and contribution to nation advancement. Since many people witness directly Gus Dur's struggle, empathy plays a significant part, and can serve a mediation to relation between trust and revisit behavior and that between knowledge and revisit behavior. For the former, empathy serves a full mediation, while the latter it serves partial mediation. For place or nature-based tourism destination, empathy can be applied to the place where people have concurrent time relationship, such as bombing area in Bali, or area with tsunami experience in Aceh and others.

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DOI <https://doi.org/10.18551/rjoas.2017-01.21>

THE EFFECTS OF TRANSFORMATIONAL LEADERSHIP AND PERSONALITY ON EMPLOYEE PERFORMANCE IN NISSAN MALANG MEDIATED BY ORGANIZATIONAL COMMITMENT

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ABSTRACT

This research aims to examine and analyze the effect of transformational leadership, personality, and organizational commitment on employee performance in Nissan Malang. This explanatory study uses SEM-PLS method to analyze and test the propose hypotheses and online sobel test to examine the mediation. The result indicate that transformational leadership has no significant effects on organizational commitment and employee performance, and personality and organizational commitment has signifikan effects on employee performance. In addition, personality shows a significant effect on organizational commitment. Further, the relationship between transformational leadership and employee performance are mediated by personality and not by organizational commitment. One of the proposed reasons for the insignificancy is two factors of transformational leadership, inspirational motivation and individualized consideration not implemented optimally in Nissan Malang. This affect to the low of organizational commitment in Nissan Malang.

KEY WORDS

Transformational leadership, personality, organizational commitment, performance.

Employee involvement (SDM) has a significant role in maintaining and increasing organizational performance (Markos, 2010). Nissan Motor Indonesia (NMI), as one of a great automotive company that make a great effort to increase Indonesian market share from 5,4 % in 2015 to more than 6 % in 2016, has to take care and develop the involvement of the employees that shown by their performance. This performance refers to how employee achieves the goal and the target determined by organization (Rothman and Coetzer, 2003).

According to Robinson (2004) the employee involvement should be considered in business context and in working environment to increase the organizational performance. It has a strong relationship with organizational performance where it can decrease employee turnover and increase employee commitment, productivity, profitability, growth and customer satisfaction. (Markos, 2010). Therefore, human resource is organizational key element where organizational success and fail depend on performance of the employees. Moreover, company should develop employee's skill through training in order to reach organizational goal. So, there is a strong relationship between employee development and employee performance. According to Elena (2000) open minded employees indicate that they will never satisfy to what they had done before. They will try to make more development in the future and, finally, will show a high performance.

Through the development of employee skill, company will be able to have competitive employee to compete with others in global competition. Human resource management is how company conducts training process, evaluates and cares with wealth, work security and compensation of employee (Dessler, 2012). Therefore, company success depends on the role of human resource management and relevant work management. Both human resource management and work management are related each other. Work management deals with the process of identification, measurement, management and development of employee performance in organization. Further, the contribution of employee performance becomes a determinant of organizational performance. Performance evaluation is related with the present and the past of the fulfillment of organizational performance standard. This can be

viewed by high and low employee performance in finishing the job and responsibilities given by company.

One of the key factors that affects employee performance is leadership. According to Slack (1997) leadership has an important role in developing employee, make a big changes to the whole of organizational elements, and encourage members to achieve organizational goal. Effective leadership is determined by leader's trait and behavior that shown in the leadership styles. An appropriate leadership style can encourage employee to work in maximal and optimal way. One of them is transformational leadership style (Bass and Avolio, 1999).

Another factor that affects performance is personality (Barrick dan Mount, 1991). Personality is one of the predictors of employee performance. The emergence of the big five theory (after 1990) became a gateway of measurement on the effects of the relationship between personality and performance. In the context of employee performance, personality is used to recruit, select, and develop employee's carrier to look for potential employee with high performance. (Klang, 2012). It is the way how to make employee's attitude and behavior related with adaptation process in the working environment (Robbins, 2013).

Performance can be affected also by organizational commitment (Meyer, 2002). Organizational commitment refers to employee's attitude, behavior, and characters such as loyalty, responsibility, and sense of belonging in organization and its objective (Rainayee, 2013). In addition, organizational commitment can influence employee in absence level, relevant job, and rolling job. It is also related with work satisfaction, work involvement, and higher motivation (Mowday et al., 1982). Therefore, higher commitment, higher performance will be produced by the employees.

Organizational commitment becomes a mediator among transformational leadership, personality, and employee performance. It is assumed that transformational leadership and personality as a predictor of organizational commitment. This indicates that through transformational leadership encourages employee's organizational commitment concerning decision making process, inspiring loyalty, accepting and appreciating different needs from employees to develop their potential skill (Bass dan Avolio, 1999).

LITERATURE REVIEW

Transformational Leadership. Transformational leadership is one of the various modern leadership styles. It includes charismatic element. Bass argued that charismatic leadership is one part of transformational leadership (Luthans, 2010). Transformational leadership is based on leader's values changes, believe and need to followers. Transformational leadership is an perspective that explores how to leader changes team or organization by creating, communicating, and making organizational statement vision model or work unit and inspiring employees to reach its objective (Robbins, 2013). According to Bass, characteristics of Transformational leadership as follows (Robbins, 2013): (1). Idealized Influence: provides vision and sense of mission, instills pride, gains respect and trust. (2). Inspirational Motivation: Communicates high expectations, uses symbols to focus efforts, expresses important proposes in simple ways. (3). Intellectual Stimulation: promotes intelligent, rationality, and careful problem solving. (3). Individualized Consideration: gives personal attention, treats each employee individually, coaches, advises.

This leadership style is a description of leader needed in modern organization where the challenge for business competition raises and global based or limitless. Therefore, visionary leader by challenge worker to give more their performance beyond the expectation to organization is needed. Moreover, ideal leader is a leader who can combine both transformational and transactional leadership model will be able to help organization reaching organizational performance effectively. Transformational is leadership that can encourage followers to show their performance beyond their expectation and to trigger the emergence of employee's organizational commitment in decision making process, inspiring loyalty, accepting and appreciating different need among followers to develop their potential, and rewarding performance.

Leadership is a part of successful support in organization in which leader manages and affects follower to act and behave like what leader expected in order to support gaining organizational aims. One of the indicators of organizational success can be measured by employee performance and it will be optimized by the role of transformational leadership. Transformational leadership changes team or organization by creating, communicating, and making organizational statement vision model or work unit and inspiring employees to reach its objective. Through this transformational leadership leader can motivate and inspire employees to provide their best ability for company, work creatively and innovatively, and becoming ambitious worker to support to organizational objectives.

The Big Five Theory. John Bearden has proven how to make and rethink ways in managing people. For the last few years, researches indicates that the basic five dimensions became significant characteristics for human personality. Those primary five personality model are as follow (Robbins, 2013): (1). Extraversion. The extraversion dimension captures our comfort level with relationships. Extraverts tend to be gregarious, assertive, and sociable. Introverts tend to be reserved, timid, and quiet. (2). Agreeableness. The agreeableness dimension refers to an individual's propensity to defer to others. Highly agreeable people are cooperative, warm, and trusting. People who score low on agreeableness are cold, disagreeable, and antagonistic. (3). Conscientiousness. The conscientiousness dimension is a measure of reliability. A highly conscientious person is responsible, organized, dependable, and persistent. Those who score low on this dimension are easily distracted, disorganized, and unreliable. (4). Emotional Stability. The emotional stability dimension - often labeled by its converse, neuroticism - taps a person's ability to withstand stress. People with positive emotional stability tend to be calm, self-confident, and secure. Those with high negative scores tend to be nervous, anxious, depressed, and insecure. (5). Openness to Experience. The openness to experience dimension addresses range of interests and fascination with novelty. Extremely open people are creative, curious, and artistically sensitive. Those at the other end of the category are conventional and find comfort in the familiar.

The big Five Theory provides ideal personality profile of employee in their carrier. This leads to the concept that different characteristic is needed in current different job. In addition, the relationship between personality and job will influence the employee performance. Personality is the way people act and behave with others. In the work context, there are various dimensions in principal personality that required by employee to support their optimal performance for company.

Organizational Commitment. Previous studies about organizational commitment became primary research since 1990, a large numbers of studies have been conducted (Meyer et al, 2002). Organizational commitment is multidimensional concept that consist of various things related with different consequences in the whole dimensions. Organizational commitment reflects a level where employee believes and perceives organizational objectives and commits to maintain membership in organization (Sopiah, 2008:155). There are three commitment components model developed by Meyer dan Allen (Meyer et al., 2002): (1). Affective commitment: it means emotional relationship and employee involvement in organization. In other word, this kind of commitment associated with strong emotional attachment to the organization. This is caused by various factors such as personal characteristics and work experienced (2). Normative commitment: it refers to individual's commitment and remains with an organization because of feelings of obligation. Various factors affect this such as personal characteristics, social experienced and organizational investment. (3). Continuance commitment: it refers to the gains and losses that may occur when employee stays or leaves an organization. It consists of Individual characteristics, alternative choices, and investment.

.Organizational commitment is an attitude and behavior that leads to the level of loyalty, responsibility, and sense of belonging toward organization and its goal. This states that the relationship between employee's commitment and contribution to high performance in which this commitment leads to believe and accept the organizational objectives and maintain membership in organization.

Organizational commitment indicates extend and relative relational forces between individual and organization. The characteristics are trust and acceptance for organizational values, intention to contribute maximum effort and involvement in organization. Organizational member who has high loyalty to organization will possess a strong intention to help organization achieving goals. Higher understanding and involvement toward organization, higher commitment will be. Therefore, organizational commitment has an important role to support organization. In addition, employee's commitment is one of the keys of the growth of company in the future.

Performance has extent understanding, it is not only related with finishing the job, but also correlated to how to performance process conducted. According to Armstrong and Baron (1995) (in Wibowo, 2007) performance derives from work result that associated with strategic organizational goals, and customer satisfaction. Moreover, performance is a part of what should be done and how to do it. Performance is implementation of planning which includes human resource as an executant. Therefore, employee's reward should be considered by organization to make their attitude and behavior supporting organization target (Wibowo, 2007).

In the process of organizational performance, monitoring, evaluating, and reviewing to human resource performance must be considered (Wibowo, 2007). Those are related each other. By monitoring, organization can measure and evaluate performance continuously to get performance progress. While, by evaluating, organization can review to look for problems in performance process. Finally, it is possible to organization to correct and revise the planning and performance implementation.

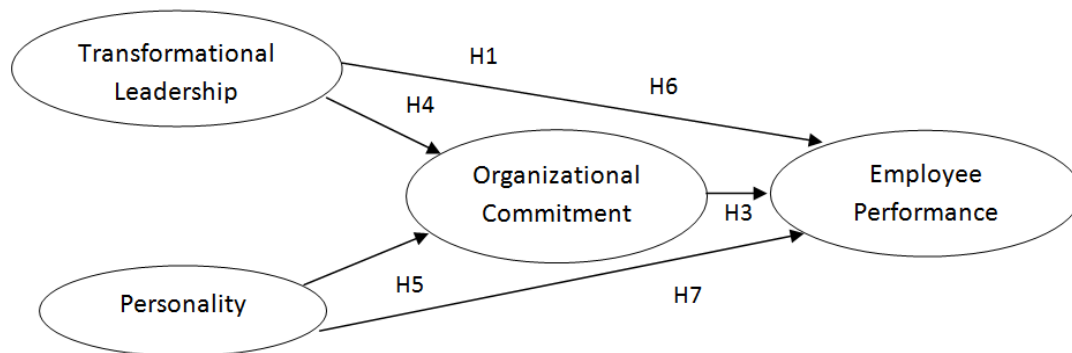
Bernandin and Russel (1993) noted that there are several dimensions to evaluate employee performance (Azizah, 2015) such as: (1). Quality. It refers to the process or result of program implementation that close to expected or targeted goal. (2). Quantity. It refers to the total production such as profit, number of production units, and total program cycle finished. (3). Timeliness. It relates to the amount of hours or time to use and finish a job that should be faster than the time standard given. (4). Cost Effectiveness. It associates with optimal use of company resources such as technology, financial, and human resource to produce maximum profit and minimize losses of resources. (5). Need for Supervision. It correlates to how far employee provides optimal ability to finish job without supervision. (6). Interpersonal Impact. It refers to how far employee can make conducive condition, comfort at work, has a pride and reputation, and cooperate with other worker.

Employee performance is one of the measurements for organizational performance progress. The development and company progress is determined by human resource performance. Thus, the measurements of employee performance has significant role in organizational evaluation process. The measurement that has an objective to evaluate the optimal work result of employee has several indicators such as quality, quantity, timeliness, cost effectiveness, need for supervision, dan interpersonal impact.

CONCEPTUAL FRAMEWORK

In the context of business competition rises for a few recent years, Nissan as an automotive company considers human resource as an important element. High contribution from human resource leads to high performance of the company. This makes organizational goal closer to reach. Therefore, there are various efforts to ensure the maximum and optimum employee performance. Company should make sure the organization can increase employee performance. One of the ways is by ensuring well-leadership style implemented in the organization. Company leader has to be able to understand deeply which leadership styles is fit as well as relevant to company's culture. This is assumed by many researchers for long dynamic conversation that transformational leadership is one of the ideal model of leadership style for modern organization. One of the reasons is this style provides trigger, inspiration, and motivation to employees to act, behave and contribute their potential ability beyond their own expectation for the organization. This can inspire followers to be creative

and innovative at work, accept and implement organizational goal, and motivate employees to have more intention to help organization achieving its aims in the future.



H1: There is a significant effect between transformational leadership and employee performance;
H2: There is a significant effect between personality and employee performance;
H3: There is a significant effect between organizational commitment and employee performance;
H4: There is a significant effect between transformational leadership and organizational commitment;
H5: There is a significant effect between personality and organizational commitment;
H6: There is a significant effect between transformational leadership and employee performance mediated by organizational commitment;
H7: There is a significant effect between personality and employee performance mediated by organizational commitment.

Figure 1 – Conceptual Framework

Performance can be also influenced by personality. It has an important role to produce high performance. Appropriate personal characteristics and job leads to work satisfaction that shows in the high employee performance. Thus, employees have well understanding related with their role and responsibility and they can develop their selves. In addition, organizational commitment becomes another factor that affects performance as well as personality. By high commitment to organization, employees have relative force involvement in the growth of organization in the future. Therefore, the conceptual framework of this study is shown as Figure 1.

METHODS OF RESEARCH

This explanatory study uses quantitative approach. This research was conducted in Nissan Malang by using 51 employees as samples. While Questioner and interview is used as collecting data technique, likert scale is used to measure variables. In addition, to test and analyze the propose hypotheses, this study uses SEM-PLS and to examine the mediation uses online sobel test.

RESULTS OF RESEARCH

Based on PLS analysis, this study examines the effects of transformational leadership, personality, and organizational commitment on employee performance, and the results are shown in the Table 1.

Table 1 – Result of Hypotheses test

Path Coefficients (Mean, STDEV, T-Values)					
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics ([O/STERR])
X1 -> Y	0,154099	0,158053	0,087099	0,087099	1,769232
X1 -> Z	0,004222	0,008427	0,111745	0,111745	0,037785
X2 -> Y	0,495000	0,503175	0,086631	0,086631	5,713900
X2 -> Z	0,578743	0,576004	0,073371	0,073371	7,887926
Z -> Y	0,337134	0,329102	0,072143	0,072143	4,673134

Table 1 indicates that transformational leadership has no significant effect on employee performance. It has t-statistic 1.769 lower than t-table (1.96). Thus, the hypothesis 1 is rejected. It also reports that personality has high T-statistic 5.713 compared to t-table (1.96). This indicates that personality has significant effect on employee performance. Thus, the hypothesis 2 is accepted. In addition, the value of T-statistic for organizational commitment and employee performance variable is higher compare to its T-table, $4.673 > 1,960$. It means that organizational performance affects employee performance. Thus, the hypothesis 3 is accepted.

It is also stated that 0.037 is T-statistics for the relationship between transformational leadership and organizational commitment. This value lower than significant standard, T-table 1,960. It indicates that there is no significant effect between transformational leadership and organizational commitment. Thus, the hypothesis 4 is rejected.

Table 1 shows that personality has significant effect on organizational commitment. It can be seen from the comparison value of T-statistics and T-table from personality and organizational commitment variable, $7.887 > 1.96$. Thus, the hypothesis 5 is accepted. Moreover, for hypotheses 6 and 7 found that T-statistics for transformational leadership variable and employee performance mediated by organizational commitment is 0.037. In addition, looking at the value of p-value = 0.969. This value not qualified as a significant standard 0.05. It should be lower than a significant value. Thus, the hypothesis 6 is rejected. While organizational commitment mediated the relationship between transformational leadership and employee performance is significant and positive. This is proven by the value of T-statistics higher than T-table ($4.020 > 1.960$) and P-value 0.000 lower than 0, 05. Thus, the hypothesis 7 is accepted.

DISCUSSION OF RESULTS

Based on data analysis found that transformational leadership has no significant effects on employee performance. Of four indicators of transformational leadership (idealized influence, inspirational motivation, intellectual stimulation and, individualized consideration), inspirational motivation and individualized consideration have lower value than other indicators. This indicates leaders in Nissan Malang have not enough ability to motivate and transfer hope and goal to employees. The simple and understandable ways is needed to use by leaders to get more valuable contribution and high performance from the employees. In addition, leaders require massif attachment with and create intent communication to, give advises and take care into the employees.

This study also proves that personality can affect employee performance by strong relationship between both variables in which the correlation values indicate positive and linier both of them. Personality is one of the predictor that influence employees performance that related to how to select, recruit, and develop their carrier in create their high performance (Klang, 2012). Robbin (2013) noted that personality is how employee's attitude and behavior in adapted work environment, acting with other worker and adjusting with their job. This statement shows that employee characteristics should link with what company needed. In the form of job replacement, there are several major personality dimensions that should be considered by company to choose for the employees to support the optimum organizational performance. Those include The Big five theory that consist of extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience.

For the hypothesis 3, the finding presents that there is a significant effect between organizational commitment and employee performance. This result show that organizational commitment related with employee's attitude and behavior that includes loyalty, turnover, responsibility, and sense of belonging to organization and its objectives (Rainayee, 2013). Moreover, organizational commitment can make changes to employee in the forms of absenteeism, tardiness, job performance, citizenship behavior, and job satisfaction (Mowday et al., 1982). Therefore, how far the involvement of the employee in the organization, it will be in line with performance contributed. In other words, organizational commitment is one of the supporting factor that can make company close to its goal.

Related with the relationship between transformational leadership and organizational commitment, this research found that there is a negative correlation both of them. One of the reasons is less of implementations of transformational leadership characteristics, especially for inspirational motivation and individualized consideration that leads to less of employee commitment to organization. Another factor is turnover intention caused the decrease of company performance in front of competitor companies that consider employee to have more possibility to choose.

Based on data analysis on hypothesis 5, personality is proven has a significant effects on employee performance. This indicates that personality is one of the predictors of organizational commitment through appropriate personal characteristics and job that emerges emotional relationship and loyalty in organization. The employees will stay longer because they feel comfort with their position and condition in organization. Thus, finally, this can increase their performance as an expected. There are three components of organizational commitment; affective organizational commitment, continuance organizational commitment, and normative organizational commitment (Meyer, 2002). The employees with high organizational commitment can contribute optimally, and responsible to their jobs and tasks given.

The result of this study rejected hypothesis 6. It is not only there is no relationship between transformational leadership and employee performance directly, but also the relationship between both of them indirectly that mediated by organizational commitment. As noted, there are three correlation in mediation process which all of them must be positive to state that one variable has mediation function; (a) the direct correlation between transformational leadership and employee performance, (b) the correlation between organizational commitment and employee performance, and (c) the indirect correlation between transformational leadership and employee performance that mediated by organizational commitment.

A negative consequence of the indirect relationship between transformational leadership and employee performance mediated by organizational commitment are caused by maintaining membership in organization. But in the same time, the employees consider turnover intention to leave organization for their future carrier. This may be also caused by company high pressure that do not proportional with the decrease of market share and social purchasing power.

In the result of direct effect of personality on employee performance, this study reports a positive and significant influence between both of them. This finding links with hypothesis 7 that indirectly has positive and significant effect both of them mediated by organizational commitment. This indicates that personality is one of the predictors of organizational commitment and encourage the emergence of organizational commitment through the appropriate personal characteristics and job. Thus, this relationship provides emotional ties and loyalty to organization that will make employees have no turnover intention and maintain membership in organization. Finally, by this condition, they will contribute optimal performance to organization.

CONCLUSION

This study was conducted to examine and analyze the effect of transformational leadership, personality, and organizational commitment on employee performance in Nissan Malang. It can be concluded, as follow:

1. There is no direct significant effect of transformational leadership on employee performance. This points that Nissan Malang leaders do not implement transformational leadership characteristics especially inspirational motivation and individualized consideration.
2. Personality has direct significant effect on employee performance. Extraversion, agreeableness, conscientiousness, emotional stability, openness to experience are personality characteristics that have important role to support employees

performance in which a agreeableness and openness to experience have a dominant contribution affected on employee performance.

3. Organizational commitment has direct significant effects on employee performance. Continuance commitment represents a majority of Nissan employees commitment where they have emotional ties, feeling and involvement to organization because the appropriate personal characteristics.
4. Transformational leadership has no direct significant effects on organizational commitment. This indicates that leader of Nissan Malang do not implement transformational leader yet, especially in the form of inspirational motivation and individualized consideration. This means also that leader is less in inspiring, motivating, internalizing hope, vision and mission of the organization and taking into account on employees.
5. Personality has direct significant effects on organizational commitment. Higher suitability of work with personal characteristics, higher organizational commitment will be. The dominant effects among personality characteristics is contributed by agreeableness and openness to experience.
6. Organizational commitment do not mediate the effects of transformational on employee performance. It means that organizational commitment cannot strengthen the relationship between transformational leadership and employee performance.
7. Organizational commitment mediates the effects of personality on employee performance. This indicates that the effects of personality can be strengthened by organizational commitment. Thus, personality is an important factor that leads to high organizational commitment and employee performance.

RECOMMENDATIONS

Like Nissan way philosophy “the power comes from the inside”, it states that company success depends on supporting components that comes from the inside of organization that is human resource. Thus, human resources have an important role to support organization reaching and achieving its goal, and it will be easy by implementing transformational leadership style, having suitability personal characteristics, and maintaining high organizational commitment. Therefore, Nissan Malang should try to develop their human resource ability and skill to get high employee performance, especially by evaluating and implementing transformational leadership style.

The important of personal suitability with work environment and organizational needs has a significant role in increasing employee performance. Therefore, Nissan Malang should provide more attention in recruitment, selection, and development of the employee.

Nissan Malang should develop the employees that have more organizational commitment to organization to optimize their performance and carrier in the future. Thus, leader must take into account to the whole stakeholder of the organization to help each other, in developing relevant and valuable policies, interacting with working environment, and understanding the employee’s personality.

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DOI <https://doi.org/10.18551/rjoas.2017-01.22>

**THE ROLE OF TENURE AS A MEDIATING FACTOR ON THE EFFECT
OF MORAL PERSON AND MORAL MANAGER TOWARD AFFECTIVE COMMITMENT
OF EMPLOYEES: A STUDY ON CIVIL SERVANTS OF THE GOVERNMENT
OF MALANG REGENCY**

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ABSTRACT

The purpose of this study was to examine the role of tenure to strengthen moral person and managers toward affective commitment of employees in organizations in the government institutions of Malang Regency, Indonesia. The research was conducted including the civil servants as many as 55 people. The results of the study analyzed using multiple regression analysis showed that moral person had a significant positive effect on affective commitment, whereas moral manager had no significant effect on affective commitment, and the tenure did not moderate (neither strengthen nor weaken) the effect of moral person and moral manager toward affective commitment of employees.

KEY WORDS

Moral person, moral manager, affective commitment, tenure.

In organizations, particularly government institutions, leaders and employees determine the implementation of good governance for the system to work well. The attitude of the leader will affect the behavior of subordinates. Attitude is one of the three dimensions of moral apart from values and integrity (Trevino *et al.*, 2000). Moral and its three dimensions become important; leaders are said to be good when they practice the three dimensions of moral, i.e. of attitudes, values and integrity.

Aspect of ethics or moral in character of a leader is emphasized in several leadership theories today. The ethical aspects of these leaders are determined by their personal integrity as in some forms of leadership, among others, authentic leadership, ethical leadership, service leadership, spiritual leadership, transformational leadership, and virtual leadership (Cameron, 2011; Cropanzano & Walumbwa, 2010). Ethical leadership will affect the outcome of employees. Referring to the opinion and Kroeck Sims (1994, in Schwepker, 2001) that ethical leadership contributes to the workers' commitment and satisfaction.

Meyer and Allen (1991) define organizational commitment as a psychological construct that describes the relationship of members of the organization with the organization and it has implications for an individual's decision to continue membership in the organization. Shadur, Kinzle, and Rodwell (1999) explain that employees who are committed to working unit show strong recognition and involvement of employees in the working unit, expressed as follows: "Organizational commitment is defined as the strength of an individual's identification with and involvement in a particular organization." Employees who have a commitment to the organization are likely to remain loyal than in employees who are not committed.

One of the most important factors affecting the commitment is the behavior of a leader or manager (Webb, 2011). Avolio *et al.* (2004) and Bass and Avolio (1990) also state that commitment is influenced by the style of leadership in the organization. Further, it is noted that leaders with moral dimension will be more influential in guiding employees as leaders can influence and lead workers. However, leaders who are unethical and dishonest will have difficulty in maintaining their employees (Brown and Mitchell, 2010; Toor and Ofori, 2009; Ulrich *et al.*, 2007). Employees can follow the leader or the organization with the help of ethical behavior, as this will impress employees and creates a feeling of confidence to work in fair environment (Schwepker, 2001).

Ethical leadership is strongly associated with moral; Trevino et al. (2000) reveal that the reputation for ethical leadership rests on two important pillars: the perception on moral leader and the action of leaders as moral manager. Leaders as a moral person are characterized by the properties of individual leaders such as honesty and integrity, while moral manager is the role of a leader to create a strong ethical message to get the attention of subordinates and to influence their thinking and behavior. The second pillar is very important for the formation of ethical leadership. For a leader to be regarded as ethical, it is not enough to be individuals who are ethical, but leaders should also be able to find ways for the organization to focus on ethics and values that populate the organization with principles as direction for the behavior of subordinates.

Previous studies analyzing the effect of ethical leadership on organizational commitment has been made by several researchers including a positive relationship between ethical leadership with the behavior of subordinates such as job satisfaction and affective commitment (Brown *et al.*, 2005; Neubert *et al.*, 2009; Ruiz Palomino *et al.*, 2011). Sutherland (2010) also reveals that ethical leadership has significant positive effect on two forms of organizational commitment, i.e. normative and affective commitment.

Based on previous research, this study aims to analyze and examine the influence of the moral person and moral manager on employees' affective commitment. Studies on the influence of moral person and moral manager toward organizational commitment in Indonesia with a focus on affective commitment, especially for public organizations are relatively small. Prottas (2013) reveals that research on the relationship between moral leadership and workers' outcome are relatively few.

In addition, the study also aims to examine the role of tenure in moderating the effect of moral person on affective commitment. Tenure, according to the results of research conducted by Angle and Perry (1981), is positively and directly correlated with organizational commitment. Based on this, the emotional involvement of individuals in the organization in which they work can be seen from their tenure in the organization. Shorter tenure affect the power level of emotional bonding to the organization, as well as social relatively fragile engagement into the organization; otherwise longer tenure brings effect on increasing commitment and smaller possibility to leave the organization. Referring to this, the affective commitment, which indicates emotional attachment of an employee to an organization, is lower for those with shorter tenure. Longer tenure is expected to strengthen the influence of moral person and moral manager on the level affective commitment of employees.

LITERATURE REVIEW

Moral Person. Moral person as the substance of ethical leadership is becoming an important prerequisite in developing a reputation for ethical leadership as it is associated with the properties, behavior, and decisions made by leaders in the organization. Leaders as a moral person are characterized in terms of individual traits such as honesty and integrity. Moral person is one dimension of ethical leadership that shows the influence of personal characteristics on ethical performance, whether in the trait, value, and integrity. First, a leader's character affects the ethical performance, according to Yukl (2006) the behavioral characteristics of ethical leaders, among others are: 1) humble; 2) emphasizing goodness; 3) honest; 4) full commitment; 5) fair; and 6) responsible. The qualities of a leader relates to the credibility, consistency, and the ability of a leader (Kouzes & Posner, 1992).

Second, the value of ethics is the basis of the relationship between leaders and subordinates that lead to a mutually agreed form of behavior to achieve the objectives of the organization. Third, integrity shows honesty, willingness to learn from mistakes, consistent in the process of self-development, as well as an example for subordinates.

Moral person as disclosed by Brown (2005) is an aspect that shows of ethical leadership showing the perception on the attitude, character, and altruistic motivation of the leader personally. Piccolo (2010) adds that moral person is a component of ethical leadership that illustrates the nature of moral leader. Thus, based on the statement, it can be

said that moral person is able to demonstrate the level of leadership traits, behavior, and ethical values held by the leaders in decision-making.

Moral manager. Being an ethical leader does not mean simply being an ethical person. Ethical leaders must also find a way to focus the organization's attention on ethics and values to infuse the organization with the principles that will guide the actions of all employees. Moral manager illustrates that ethical leaders serve as role models for subordinates to uphold ethical standards, to apply penalties and rewards as well as to communicate the importance of ethics for workers. Moral leadership manager describes the ability of a leader in providing role models of ethical behavior for subordinates, explaining and being able to regulate the ethical principles and always considering the ethical element in decision-making.

Tenure. Tenure is an individual experience that will determine the growth in employment and occupation. According to Seniati (2006), tenure is a component consisting of age, length of employment, and position, so, tenure is a time limit to use an employee to contribute their labor to the company so that it will produce working attitude and quality work.

Tenure relates to how long someone works in the organization. Sufficient tenure indicates extensive experience of someone in the organization. Time forms one's experience, knowledge, and skills. Work experience forms one's skills and attitude, such as efficiency and effectiveness in doing the job, ability to analyze and overcome the difficulties and challenges faced, and so forth.

Affective Commitment. Organizational commitment as expressed by Porter (1974) in Schwepker (2001) has a role as a 'psychological bond' for workers that can influence behavior in accordance with the interests of the organization. Thus, the degree of commitment of individual employees is instrumental in the organization's success in achieving the goals and becomes the strength for the organization in the competition. Employee commitment to the organization shows strong recognition and involvement of individuals in the organization.

Mayer and Allen (1991) divide the organizational commitment to 3 key dimensions namely: continuance, normative, and affective commitment. Dimension of affective commitment is the most powerful of the three types and is associated with positive emotional connection to the organization (Pentareddy and Suganthi, 2015). According to Allen and Mayer, employees who have high affective commitment are best in perception and individual characteristics that affect the work (Williamson *et al.*, 2009). Affective commitment is also described as being more influential and can interpret the overall commitment.

According to Meyer and Allen (1993), affective commitment is an emotional bond that is owned by a worker to recognize and increase the sense of involvement in the organization (Pentareddy, Suganthi, 2015). A feeling of belonging, pride, and loyalty to the organization marks high levels of affective commitment. When employees have good commitment, they tend to identify the organization (ownership of the organization), tend to be more actively involved in the work environment and the increasing involvement of an employee in the organization can improve the outcomes of organizational goals (Allen and Meyer, 1990).

Perceptions of ethical leaders will be a positive influence on the decision-making by employees, pro-social behavior, job satisfaction, motivation, and organizational commitment as well as the negative effect on employees' counterproductive behavior (Brown, 2005). Watson (2010) also reveals perception on the value of ethical leaders with have potential impact on the level of organizational commitment of employees. Referring to Brown and Mitchell (2010), Toor and Ofori, (2009), Ulrich *et al.* (2007) reveal unethical leader will have difficulty in maintaining employees. Therefore, in other words, the characteristics or moral person and moral manager of a leader will influence the level of emotional or affective commitment of employees who indicate the level of involvement of individuals in the organization.

Tenure also affects the affective commitment of employees, as expressed by Angle and Perry (1981) that the employees' age and tenure correlates positively to organizational commitment. Additionally, Allen and Meyer (1991) state that tenure is one of the demographic characteristics alleged to have correlation with organizational commitment.

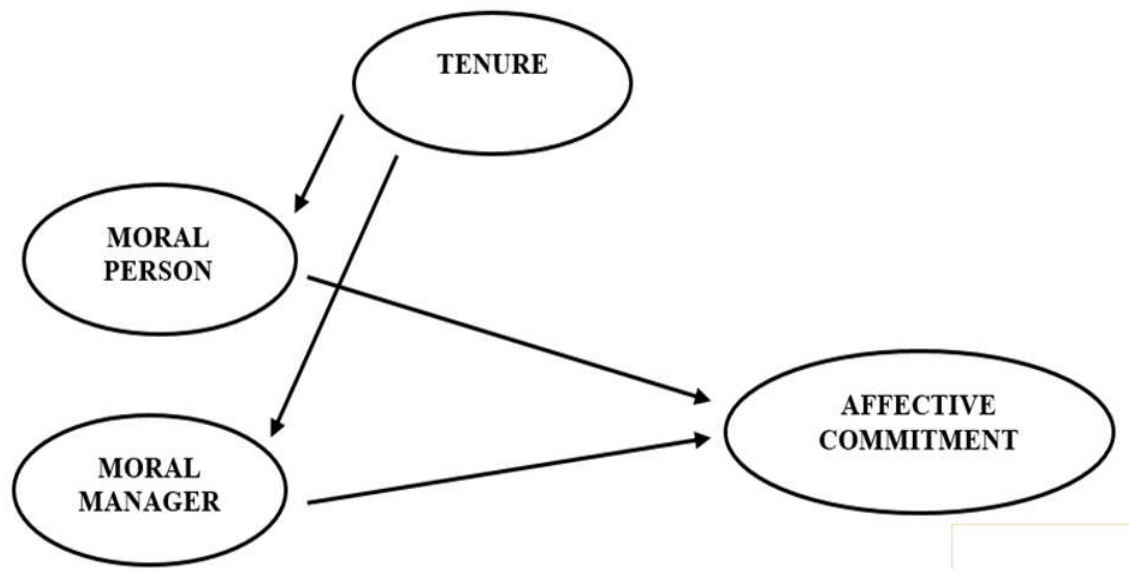


Figure 1 – Conceptual Framework

Each variable, indicator, and item in this study can be seen in the following table:

Table 1 – Variable, Indicators, and Research Items

Variable	Indicator	Item
Moral Person (Brown <i>et al</i> , 2005)	Characteristics Behavior Decision making	Honest and trustworthy Care toward employees' interests Give examples on how to do things correctly Care toward employees' thought and ideas Ethical behavior in daily live Fair decision-making
Moral manager (Brown <i>et al</i> , 2005)	Communicate ethics and values Reward and punishment Role model	Communicate ethics and values Punish employees who break rules Reward employees who comply with rules Pay attention to code of ethics Be a role model for employees
Tenure (Noermijati, 2015)	Short Long	Less than 5 years More than 5 years
Affective commitment (Allen and Mayer, 1991)	Emotional Identification Engagement	Feel emotional bond Feel happy to be with the organization Feel as part of the organization Feel to be engaged to the organization Feel that organizational problems are employees' problems

RESEARCH METHODS

The research was conducted at functional groups of civil servants of Malang Regency Government, specifically on Department of Technical and Regional Secretariat. Sampling in this study refers to Roscoe (1975) in Sekaran (2003), by multiplying the number of indicators with a minimum of 5 times, with 11 indicators, and the number of samples obtained in this study was 55 people. The questionnaire consisted of 18 statements, comprised of 11 on moral person and manager developed on a scale of ethical leadership (Brown, 2005). Measurement of affective commitment is developed from Alen and Meyer (1993) as many as 5 items, while the 2 items on tenure were adopted from Noermijati (2015), consisting of short and long tenure. Furthermore, the data were analyzed using regression analysis to the role of moderation.

FINDINGS AND DISCUSSION

The majority of respondents were female (56.3%) in the productive age between 31-40 years (45%), and as many as 98.2% were Muslim. Most of them graduated from Bachelor Degree 1 (69.1%). As many as 87.3% of respondents were married. The model was valid and reliable. The indicators were valid with a significance level of <0.05 and the reliability test showed that the Cronbach Alpha value was > 0.6 . In this study, the moderation regression was used to describe whether tenure moderated influence of moral person and moral manager on the affective commitment.

Table 2 – The Results of Moderation Regression Analysis

n/n	Path Coefficient	Sig
Moral Person (X1)	0.338	0.003
Moral manager (X2)	0.092	0.241
X1 x Tenure	0.208	0.051
X2 x Tenure	0.072	0.294
R Square	0.274	

As the above table shows, the value of R square is 0.274, meaning that the regression model can explain how tenure moderates the effect of moral person and moral manager of the affective commitment, as much as 27.4%, while the rest 72.6% is explained by other variables outside variables used in this study.

The Effect of Moral Person on Affective Commitment. Based on the above table, it can be seen that the relationship of moral person and affective commitment has a path coefficient value of 0.338 with a significance value of 0.003. As the significance value of < 0.01 , it can be said that moral person has significant positive effect on affective commitment.

The Effect of Moral Manager on Affective Commitment. Based on the above table, it can be seen that the relationship of moral manager and affective commitment has a path coefficient value of 0.092 with a significance value of 0.241. As the significance value of < 0.01 , it can be said that moral manager has significant positive effect on affective commitment.

Tenure as a Moderating Variable on the Effect of Moral Person and Moral Manager toward Affective Commitment. The path coefficient of tenure moderation on the relationship between moral person and affective commitment was 0.208 with a significance value of 0.05 which means tenure moderates the effect of the moral person on affective commitment. However, the value of the coefficient path after moderation is smaller than the direct effect, it can be said that tenure weakens effect of moral person toward affective commitment. In the relationship between moral manager and affective commitment, tenure does not moderate effect of moral manager on affective commitment.

The research model can be described as seen from Figure 2.

The cross loading values of each item indicate that based on the assessment of respondents' perception, decision-making indicator shown through fairness becomes a good predictor of the perception of respondents regarding the moral person. Employees' perceptions on the moral manager of leaders of Malang Regency Government are best predicted by the leadership role in communicating ethics and values within the organization, while the emotional bond of employees, who are happy to build their career in the organization, reflects perception on affective commitment.

Based on the analysis above, it can be seen that affective commitment of employees is affected by the perception of employees to moral person, which is the characteristics of leaders, behavior, and ethical decision-making by leaders. Leaders perceived as capable of providing exemplary in characteristics, and ethical decision-making behavior can affect the level of affective commitment, which reflects the emotional bond of employees with the institution where they work. This fact supports Brown (2006) which states that ethical leadership is directly related to the attitude of the work of subordinates, and he argues that ethical leadership creates organizational commitment of subordinates.

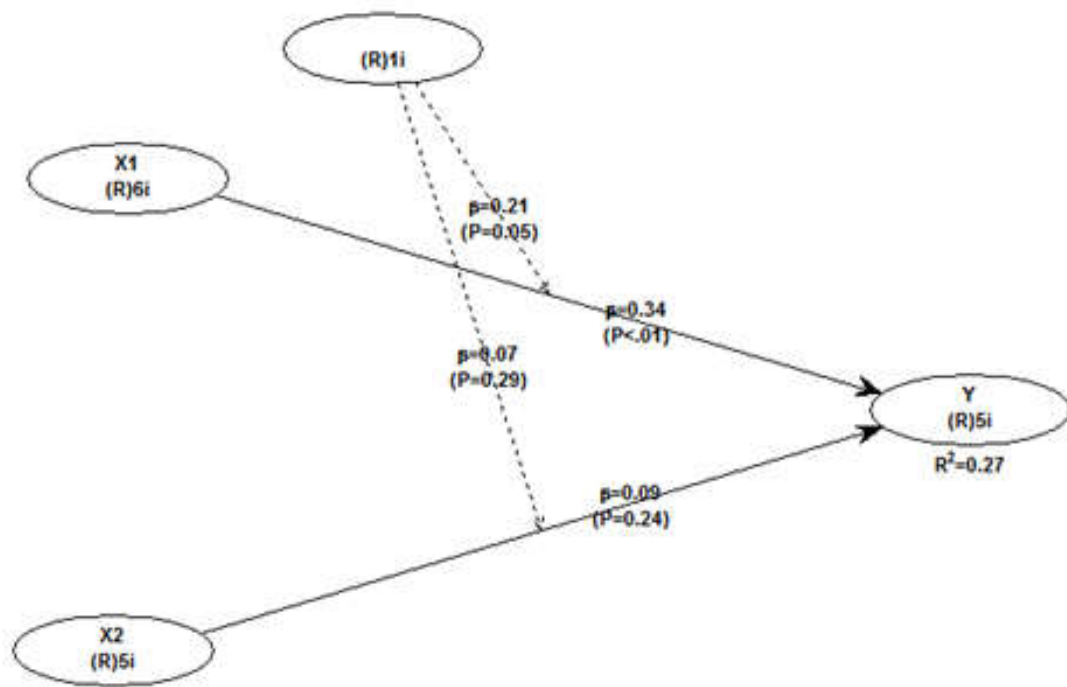


Figure 2 – Research Model

The results of this study are consistent with the results of Ruiz *et al.* (2011) which states ethical leadership of supervisor influence directly and significantly related to affective commitment. Neubert (2009) argues that the behavior of ethical leadership creates a strong atmosphere for the entire organization, especially to stimulate job satisfaction and affective commitment.

The study also supports research Kim and Brymer (2011) that ethical leadership shown by superiors in a manner that is fair, caring, open, sincere, and truthful, play an important role in increasing job satisfaction of subordinates, including their satisfaction with working conditions and salaries. Further, it is also disclosed that the behavior of leaders also lead to affective commitment to the organization such as proud of the organization, concerned about the future of the organization, and sharing the same values with the organization. However, the results are not in line with the research by Den Hartog and De Hoogh (2009), which examines the behavior of ethical leadership reflected on the honesty, integrity, and behavior empowering organizational commitment. Fair, honest, and trustworthy leaders who also empower employees are associated with affective and normative commitment; honest and fair leaders have more powerful effect on normative commitment than on affective commitment.

Moral manager may have no significant effect against affective commitment, as perception of subordinate to moral manager to the application of discipline on employees who violate the rules of the organization is weak. It supports research by Karrasch (2005) that organizational commitment has been found to be a predictor of the ability of leadership. High level of affective and normative commitment becomes the predictor on the evaluation of high leadership, but sustainable commitment is predictor of weak evaluation of leadership. This may reflect that affective commitment is a stronger predictor of the behavior of the leader than normative commitment. Based on the results, evaluation of the leader on the employees indicated on the application of weak disciplined level causes moral manager to be not influential toward affective commitment.

Based on these results, the role of tenure moderation is to weaken the influence of moral person on affective commitment. These results concur with those of Meyer *et al.* (2002) that age and tenure has a positive effect but is very weak related to the three

components of organizational commitment, i.e. affective, normative, and continuance commitment.

The level of affective commitment of employees, which describe the sense of belonging and emotional involvement of employees with the organization they work, is influenced by the moral leadership reflected in the characteristics, behavior, or fairness in decision-making, and is weakened by tenure. In other words, the longer employees work, leaders no longer become a factor helping them to build strong relationship with the organization. In fact, as employees are moved from one institution to another, emotional bond does no longer depend on how leaders behave and apply ethical principles in the organization

CONCLUSION AND RECOMMENDATIONS

It has been proven that moral person affects affective commitment of employees, but moral manager has no effect on affective commitment. In addition, tenure weakens the influence of moral person on affective commitment, and tenure does not moderate the effect of moral manager toward affective commitment of employees.

Future researchers are suggested to balance the proportion of employees with long and short tenure to explain the moderating influence of tenure more comprehensively. Practitioners are suggested to improve the role of leaders in practicing ethical leadership reflected in the moral person and moral manager to improve employee emotional attachment to the institution.

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DOI <https://doi.org/10.18551/rjoas.2017-01.23>

RECONCILIATION OF HIGH-TECH AND HIGH-TOUCH FOR SME INNOVATION PERFORMANCE IN INDONESIA

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ABSTRACT

The euphoria of technology in the Internet of Things (IOT) era is not only more advantageous but also provides double-edged sword effect for high-tech SMEs. In general, high-tech SMEs have a dependence on technology and neglect high touch aspect capacity to build relationships with human resources. Ironically, it is otherwise allegedly in an action as it is assumed to cause innovation imbalance where the product of SME innovation is high-tech but low-touch. Given its importance, this study aims to examine the importance of reconciliation between high-tech and high-touch as entrepreneurial orientation, organizational characteristics and environmental characteristics and their impacts on the innovation performance. The sample of this study consisted of 102 leaders of high-tech SMEs in East Java Province. Method of Data Analysis used in this study was Generalized Structured Component Analysis (CGCA). The results of this study indicate that the reconciliation between high-tech and high-touch aspects of SMEs in term of entrepreneurial orientation, organizational characteristics and environmental characteristics is an important catalyst for the creation of innovation performance. Several recommendations were developed in response to these findings.

KEY WORDS

Entrepreneurial orientation, organizational characteristics, environmental characteristics, innovation performance, SMEs, high-tech, high-touch, Indonesia.

Over the past few years, a new paradigm called Internet of Things (IOT) has become the buzzwords in academic field and industry. IOT is an image in which the virtual world via internet extends connection to every-day-life objects in the real world (Raiwan, 2013; Palma et al., 2014; Samani et al., 2015). The physical objects are transformed into a smart object which allows interoperability between human-to-human, human-to-things and even things-to-things. Products in the IOT era cover various areas such as wearable devices, home automation, e-government and smart city.

Of course, the IOT is a ground zero for a new phase of global transformation. Propelled by technological innovation, IOT generate significant economic opportunities and establish new industries. According to the research results of Bappenas, BPS, UNDP (2001) in the Technological Achievement Index, Indonesia ranks 56th out of 67 countries. Therefore, Indonesia should continue to innovate and produce a wide range of smart products so that in the future, Indonesia is expected to have competitiveness and comparativeness with other countries.

As the development of Internet in Indonesia which becomes cheaper and easier, more and more people use the Internet for various purposes, one of them is for entrepreneurship (Reuber and Fischer, 2011; Berisha-Shaqiri, 2015). Now, many SME entrepreneurs run high tech, tech-savvy, creative, innovative and dynamic businesses (Okorie et al., 2014, Seroka-Stolka and Tomski, 2015, Liu, 2016).

SMEs in Indonesia are considered to be responsive to the opportunities to create and participate in the IOT era. It is characterized by the development of technopreneur and start-up companies such as the developers of software, games, marketplace etc. In addition, the emergence of various development programs of high-tech innovation system of SMEs such as incubation, accelerator, mentorship and tech start-up ecosystem builder.

Various studies have shown that high-tech touch is able to encourage the performance of innovation in SMEs (Gunawan, 2015; Ndesaulwa 2016; Rehman, 2016). However, the euphoria of assisted technology is not only beneficial but also gives a double-edged sword for high-tech SMEs. In general, high-tech SMEs have a dependence on technology and neglect high-touch aspect capacity to build relationships with human resources.

Ironically, it is otherwise allegedly in an action will lead to SMEs product imbalance, other than high-tech but low-tech. In the future, it will become a setback for SMEs as Saad and Mazarol (2010), Mura and Rosza (2013) and Halim et al (2014) have suggested that high-touch weaknesses of SMEs which include ethics, leadership, human resources management, can cause a negative impact on the innovation performance of SMEs.

Given its importance, this study aims to investigate such high-touch practices of entrepreneurial orientation, organizational characteristics and environmental characteristics that are implemented and the effect on the innovation performance of high-tech SMEs in East Java, Indonesia. This research is expected to give policy consideration and understanding on the application of high-tech elements of SMEs without neglecting high touch elements in order to create sustainable innovation performance.

Furthermore, research on the balance of high-tech and high-touch of enterprises especially SMEs are still rare and offer ample opportunities for academics to explore further. To the state of researcher's mind, research on the balance of high-tech and high-touch is limited to companies such as the research findings of Anderson (1995) on higher education service, Angehr (1998) on the company's website, Rosen (2011) on the pharmaceutical company, Ferrel and Ferrell (2012) regarding the use of social media in company marketing.

It has never been found research on the balance of high-tech and high-touch on SMEs in both developed and developing countries. Previous research in different sectors indicates that there are several factors that can affect business innovation performance as entrepreneurial orientation (Lumpkin and Dess, 2001; Madhoushi, 2011), organizational characteristics (Prajogo and Ahmed, 2006; Katila, 2002 and Katila and Ahuja, 2002) and environmental characteristics (Prajogo and Sohal, 2001, Frishamman and Horte, 2005; Hung, 2007).

For the high-tech SME sector in developing country like Indonesia, this still needs further verification and research. Therefore, this study should fill the gap on the importance of high-touch which consists of entrepreneurial orientation, organizational characteristics and environmental characteristics in improving innovation performance of high-tech SMEs in IOT era.

LITERATURE REVIEW

The idea of «high-technology» or «high-tech» has several meanings. However, the term «high-tech» is generally associated with something «new» and «advanced». «High-tech» is often associated with the emergence and use of new technologies (Grønhaug and Möller, 2005). On the contrary, the term «high-touch» can be interpreted by dealing with or interacting with people rather than dealing with computers or high-tech (Naisbitt, 1982). In addition, high-touch means having a strong awareness of the complexity of human beings, which is having empathy. Some researchers believe that both aspects should be reconciled, balanced and integrated in offering products or services of an enterprise; there is no exception for SMEs. In fact, the two aspects seem not in line. This study attempted to examine the extent to which the role of high technology which is represented by entrepreneurial orientation, organizational characteristics and environmental characteristics and the effects on innovation performance in high-touch SMEs .

Covin and Lumpkin (2011) argues that entrepreneurial orientation is the process by which individuals within a founded society pursue entrepreneurial opportunities to innovate regardless the level and nature of the resources currently available. Entrepreneurial orientation is an attempt to extend the competitive advantage of organizations. In addition, Moreno and Casillas (2008) argue that entrepreneurial orientation is organization decision-making with a tendency to support entrepreneurial activities. Entrepreneurial orientation is a

way to act the entrepreneurial spirit within an organization. In addition, organizational characteristics is structure and infrastructure equipment in organizations which is related to the preparation of the implementation of a management strategy (Li, 2002). Furthermore, the environmental characteristics are environmental factors that affect the level of implementation of a business strategy where there are three main factors which strongly influence including uncertainties in the business environment, competitive pressure to implement business and business college readiness to collaborate (Li, 2002). Finally, the concept of innovation performance refers to the organization's overall ability to introduce new innovative products into the market, open new markets by merging the strategic orientation to behavior and innovation process.

This study proposes three hypotheses based on earlier research which became the theoretical and empirical basis. Lumpkin and Dess (2001), in an entrepreneurial orientation model have been developed, reveal that the company's focus consisting of freedom, innovation, risk, proactive, competitive aggressiveness influence the company's performance after creating innovation on company and organizational factors as moderator variable. results of research conducted by Madhoushi (2011) to 164 SMEs in Iran using LISREL data analysis method found that managerial knowledge and entrepreneurial orientation have significant effect on the innovation performance. Therefore, the first hypothesis proposed is as follows:

H1: Entrepreneurial Orientation has significant effect on the innovation performance.

In addition, a study conducted by Prajogo and Ahmed (2006) showed that integration between leadership and human resources as well as technology in organizational characteristics will affect the performance of innovation using innovation stimulus modeling. Moreover, some empirical studies show that the character of the businesses internal strategy which are part of technology significantly affects innovation performance (Katila, 2002 and Katila and Ahuja, 2002). On this basis, the second hypothesis proposed is:

H2: Organizational characteristics have significant effect on innovation performance.

Moreover, Prajogo and Sohal (2001) found that the business environment, organizational strategy and organizational culture have an impact on the practice of total quality management, which determines the quality or performance of innovation. Results of research conducted by Frishamman and Horte (2005) showed a positive effect of the environment on the performance of innovation using multiple regression analysis. The results of research of Hung (2007) also indicate that there is a significant effect of environmental characteristics and the performance of innovation. Therefore, the third hypothesis proposed is:

H3: Environmental characteristics have significant effect on innovation performance.

METHODS OF RESEARCH

This exploratory study used quantitative research paradigms. The sample of this study consisted of 102 leaders of high-tech SMEs in East Java Province, Indonesia. This research is a one-shot study where the data was collected in a single period of time.

This study used survey method with questionnaire as instrument. Data analysis method used to prove the hypothesis proposed in this study was Generalized Structured Component Analysis (CGCA). Assumptions test in this study used First Order Analysis which covered Outer Model, Inner Model, Overall Model using second order analysis model.

The independent variables in this study consisted of organizational characteristics (X1) which was measured by data base management system, collaborative system, corporate culture collaboration and management participation, as in Li (2002) and the variable of environment characteristics (X2) which was measured by environmental uncertainty, competitive pressures, business college alacrity (Li, 2002) and the entrepreneurial orientation variable (X3) which was measured by innovation, activeness and risk taking, as suggested by Salehi et al (2013); Riche and Agca (2012). Although the dependent variable in this study is Innovation Performance (Y) which was measured using the innovation performance of the product, innovation performance of the market, innovation performance of the process, Innovation performance of the behavior and innovation performance of the strategy.

RESULTS OF RESEARCH

The results of evaluation on the outer model of organizational Characteristics (X1) Environmental Characteristics (X2), Entrepreneurial Orientation (X3) and Innovation Performance (Y) showed that all criteria used have a good value, which make it possible to carry out further tests. This is indicated by the value of the convergent validity with the loading parameter factor greater than ≥ 0.500 , discriminant validity with AVE parameters around 0-1 and composite reliability with the Cronbach's alpha parameter ≥ 0.500

In addition, the evaluation of the structural model of latent constructions (internal model) was conducted to predict the causal relationship between the latent constructs in the model. Table 1 presents the results of the evaluation of the structural model of all variables in this study which shows good value.

Table 1 – Evaluation of the Research Structural Model

Parameter	Inner Model Results	Rule of Thumb	Description
FIT	0.732	0-1	Good
AFIT	0.724	≥ 0.500	Good

The result of evaluation of the overall model is used to indicate that the construct items are significant to substantially form thee five constructs have been studied. Table 2 shows the results of the evaluation of the overall model in this study which shows good value.

Table 2 – Evaluation of the Research Overall Model

Parameter	Overall Model Results	Rule of Thumb	Description
SRMR	0.236	Almost 0	Good
GFI	0.937	≥ 0.500	Good

Hypothesis tests were performed by comparing the value of t- statistics with the t-table value. If the value of the t-statistic is greater than t-table then between-constructs relationship is significant and can be analyzed further. Table 3 presents the results of the hypothesis tests using iterative bootstrapping in CGCA software in which the three hypothesis tested by the researcher are received. This shows that there is a positive and significant partial impact of high-touch elements, namely entrepreneurial orientation, organizational characteristics and environmental characteristics on high-tech SMEs Innovation Performance.

Table 3 – Hypothesis Test Results

H	Effect	Coefficient Strip	CR/t-statistic	Description	Results
1	X1 \rightarrow Y	0.388	6.38	Significant (+)	Accepted
2	X2 \rightarrow Y	0.453	7.62	Significant (+)	Accepted
3	X3 \rightarrow Y	0.356	7.45	Signifikant (+)	Accepted

DISCUSSION OF RESULTS

Based on the results of the hypothesis tests, it was found that entrepreneurial orientation significantly affects the performance. This could be due to the results of this study, in general, high-tech SMEs have sought to innovate, take risks and are proactive in the competitive industry which is a form of entrepreneurial orientation of companies. Therefore, companies tend to support any form of entrepreneurial activity in which it will ultimately improve the performance of innovation within the company. The relationship between entrepreneurial orientation and innovation performance is positive in which it indicates that more the practice processes and entrepreneurial orientation activities in the company, the higher the performance of innovation of the company. The results of hypothesis tests support the idea of Lumpkin and Dess (2011) as well as the research results of Madhoushi (2011) which states that entrepreneurial orientation has a significant effect on the performance of innovation.

The results of the hypothesis tests showed that the organizational characteristics significantly influence the performance of innovation. The results of this study indicate that the organization characteristics of high-tech SMEs have been effective where the communication support system, database management system, collaborative system, collaborative organizational culture and management participation have been well organized so that the organizational characteristics of high tech SMEs are able to create innovation performance. The direction of relationship of organizational characteristics and innovation performance is positive in which it indicates that the increasing pressures of the company's organizational characteristics will improve the performance of the company's innovation. The results confirm the results of research conducted by Prajogo and Ahmed (2006) Katila (2002) and Katila and Ahuja (2002) who found that there is an effect of organizational characteristics to performance innovation.

Based on the results of this study, it is also revealed that the environmental characteristics significantly influence the performance of innovation. It may be because high-tech SMEs are able to cope with the uncertainty of the environment in terms of understanding consumer tastes, quite high pressure of competitiveness in the industry and necessary business partners vigilance. With the environmental characteristics of high-tech SMEs, the company has a high pressure in generating innovation performance. The relationship between the environmental characteristics and the innovation performance is positive. This indicates that an increasing number of external influences in shaping the environmental characteristics of high-tech SMEs will strengthen the company's capacity in terms of innovation performance. The results support the hypothesis test results of the research conducted by Frishamman and Horte (2005) and Hung (2007) that there is a significant influence between environmental characteristics and the performance of innovation.

CONCLUSION AND RECOMMENDATIONS

In general, the results of this study indicate that the advancement and sophistication of technology (high tech) must be weighed against human values and have high touch within individual, organization and the environment. The reconciliation between high-tech and high-touch aspects of SMEs is important in shaping the competitive and sustainable innovation performance.

Before yielding and depending all over the internet and technology, companies especially SMEs need to thoroughly examine aspects that require human touch (high touch) and elements that require technology (high tech). Internet and advanced technology cannot strongly and deeply build relationships with people, but the SMEs owners can. On the other hand, people cannot get information and rapidly develop smart products but internet and technology can. Thus, SMEs must learn to use the two together.

Further research can continue investigating the reconciliation of high-tech and high-touch by analyzing important aspects in improving other SMEs innovation performance such as high confidence, high value, high growth and high teach.

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DOI <https://doi.org/10.18551/rjoas.2017-01.24>

**ОСНОВНЫЕ СРЕДСТВА: ОБЕСПЕЧЕННОСТЬ И ЭФФЕКТИВНОСТЬ
ИСПОЛЬЗОВАНИЯ**
FIXED ASSETS OF THE ENTERPRISE: SECURITY AND EFFICIENCY OF USING

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АННОТАЦИЯ

Основные средства любого предприятия являются наиболее капиталоемким средством производства, без их надлежащего использования в процессе производства предприятие не может эффективно использовать свой производственный потенциал. По данным годовых отчетов проанализирована обеспеченность сельхозпредприятий Воронежской области основными средствами и эффективность их использования. Проведено рейтинговое ранжирование сельхозпредприятий по этим показателям, предложены обоснованные мероприятия по повышению эффективности использования основных средств.

ABSTRACT

Fixed assets of any enterprise is the most capital-intensive means of production. Without their proper use in the production process, the company cannot effectively use its production capacity. Based on the annual reports we have analyzed provision with fixed assets of the agricultural enterprises within Voronezh region, and the efficiency of their use. A rating of agricultural ranking based on these indicators was performed; reasonable measures to improve the efficiency of the use of fixed assets were suggested.

КЛЮЧЕВЫЕ СЛОВА

Основные средства, эффективность, фондоотдача, фондовооруженность.

KEY WORDS

Fixed assets, efficiency, capital productivity, capital-labor ratio.

Повышение результативности деятельности предприятий прямо пропорционально связано с эффективностью использования основных средств, как основополагающей составляющей производственного потенциала предприятия. Всем известно, что эффективность использования основных средств заключается в генерировании прибыли. Следует учитывать, что использование в процессе производства современных высокопродуктивных машин и оборудования дает возможность снизить удельные издержки на единицу продукции и повысить качество и конкурентоспособность готовой продукции.

Эффективность использования основных средств предприятия оказывает существенное влияние на основные показатели производственной деятельности: объем валовой и товарной продукции, производительность труда и трудоемкость продукции, себестоимость единицы продукции, чистую прибыль и рентабельность, показатели оборачиваемости, финансовой устойчивости и деловой активности. В то же время важное значение имеет анализ обеспеченности предприятия основными средствами, их состояние и движение.

Постановка проблемы. Цель анализа основных средств – выявить резервы роста эффективности их использования и обоснование необходимости и размера инвестиций в техническую модернизацию и перевооружение. Таким образом,

предприятиям, придерживающимся политики тщательного анализа эффективности использования основных средств и стремящимся постоянно ее повышать удается сохранить и упрочить свои позиции на рынке и повысить свою капитализацию. [4]

Следует обратить внимание на то, что эффективное использование основных средств предприятия будет способствовать экономии других видов ресурсов (сырья и материалов). При введении современных технологий предприятия могут повысить уровень производительности труда, снизить себестоимость готовой продукции, переориентировать производство в соответствии с требованиями покупателей.

Следует отметить, что на разных этапах жизненного цикла предприятия стоит применять разные подходы к исследованию состояния и использования основных средств. Так в период образования и активного расширения производства отдача основных средств может быть очень низкой, хотя коэффициент их обновления будет иметь высокое значение. На этапе зрелости чаще всего наблюдается максимальная эффективность основных средств, что без сомнения связано с достижением намеченных целей. На этапе старения предприятия руководство принимает решения о целесообразности дальнейшего функционирования предприятия. В случае ликвидации предприятия должен быть принят комплекс мер, направленных на поддержание высокой стоимости основных средств.

Обсуждение. Основные средства любого предприятия являются наиболее капиталоемким средством производства, без их надлежащего использования в процессе производства предприятие не может эффективно использовать свой производственный потенциал.

На наш взгляд в современных условиях хозяйствования актуальным будет проведение экологического анализа эффективности использования основных средств, так как результаты анализа особенно полезны будут при планировании и размещении производства по географическим районам. На основе данного анализа возникает возможность осуществлять оперативный контроль за степенью загрязнения окружающей среды, предотвратить возникновение техногенных аварий а также избежать штрафов за превышение норм выбросов вредных веществ в окружающую среду.

В ходе экологического анализа рекомендуется сопоставлять фактическое вредное воздействие от использования основных средств с принятыми нормами, а также анализировать и оценивать эффективность природоохранных мероприятий.

Таким образом, на сегодняшний день существует ряд методик определения эффективности использования основных средств. Основной упор в них делается на анализ и оценку технических и технологических аспектов функционирования данного вида активов. [1]

Проблема обеспеченности основными средствами вытекает из разной обеспеченности ими предприятий и разной производственной нагрузкой на единицу техники. Рассмотрим рейтинг обеспеченности предприятий основными средствами по следующим показателям: производственная нагрузка на трактор, производственная нагрузка на зерноуборочный комбайн, фондовооруженность и фондооснащенность (таблица 1). Проведенный анализ данных за 2015 год по 32 районам Воронежской области и городу Воронежу выявил низкую обеспеченность основными средствами у предприятий Подгоренского, Ольховатского и Панинского районов. В то же время этот показатель гораздо выше среднеобластных показателей в сельхозпредприятиях Петропавловского, Верхнехавского и Лискинского районов.

От эффективного использования основных средств зависит финансовое состояние, конкурентоспособность предприятия. Оптимальность состава основных средств, их эффективное использование влияет на количество, качество, надежность готовой продукции.

Проблема повышения эффективности использования основных средств и производственных мощностей предприятий занимает одно из основных мест в период перехода России к цивилизованным рыночным отношениям. Имея четкое представление о роли основных средств в производственном процессе и основных

факторах, влияющих на использование основных средств, можно выявить методы, направления, при помощи которых можно повысить эффективность использования основных средств и производственных мощностей предприятия, обеспечивающая при этом снижение издержек производства и рост производительности труда.

Таблица 1 – Результаты рейтинга обеспеченности предприятий основными средствами

Район	Производственная нагрузка на трактор, га	Место	Производственная нагрузка на зерноуборочный комбайн, га	Место	Фондовооруженность, тыс. руб.	Место	Фондооснащенность на 100 га, тыс. руб.	Место	Сумма мест	Итоговое место
1 Аннинский	220	2	297	4	836	26	2304	12	44	7
2 Бобровский	528	27	762	31	2661	3	3817	8	69	17
3 Богучарский	346	12	344	10	674	29	690	32	83	25
4 Борисоглебский	414	20	308	6	1705	15	1215	24	65	14
5 Бутурлиновский	573	30	745	30	1756	14	2480	11	85	27
6 Верхнемамонский	356	13	439	15	674	30	1014	30	88	28
7 Верхнехавский	210	1	377	14	1820	13	5476	3	31	2
8 Воробьевский	446	24	439	16	1034	23	1187	26	89	29
9 Грибановский	554	28	318	7	1388	18	1041	28	81	25
10 Калачеевский	316	9	328	8	549	32	993	31	80	24
11 Каменский	444	22	501	23	1410	16	1996	14	75	20
12 Кантемировский	491	26	459	18	2282	4	1971	15	63	13
13 Каширский	365	15	563	26	1975	9	3940	16	56	10
14 Лискинский	384	16	245	2	1909	11	7587	2	31	3
15 Нижнедевицкий	1086	33	622	28	5404	1	5213	4	66	15
16 Новоусманский	270	6	540	25	2076	7	4762	5	43	5
17 Новохоперский	587	31	343	9	1835	12	1017	29	71	19
18 Ольховатский	406	18	844	32	553	33	1434	20	103	32
19 Острогожский	462	25	465	19	1002	24	1382	22	90	30
20 Павловский	315	8	498	21	770	28	1561	18	75	21
21 Панинский	640	32	895	33	1273	21	1077	27	113	33
22 Петропавловский	247	3	275	3	2271	5	2084	13	24	1
23 Поворинский	445	23	353	11	1271	22	1328	23	79	23
24 Подгоренский	358	14	627	29	842	25	669	33	101	31
25 Рамонский	431	21	495	20	3914	2	8309	1	44	6
26 Репьевский	411	19	524	24	1989	8	1256	24	75	22
27 Россошанский	299	7	446	17	1384	19	2872	10	53	9
28 Семилукский	266	4	215	1	1275	20	1711	17	42	4
29 Таловский	267	5	375	13	652	31	1391	21	70	18
30 Терновский	342	11	300	5	803	27	1495	19	62	12
31 Хохольский	317	10	500	22	1949	10	3560	9	51	8
32 Эртильский	397	17	364	12	1390	17	1947	14	60	11
г. Воронеж	568	29	604	27	2260	6	3858	7	69	16

Эффективность использования основных средств характеризуется соотношением темпов роста выпуска продукции и темпов роста основных фондов, а также показателями фондоотдачи, фондоемкости, фондовооруженности и производительности труда. Повышение эффективности использования основных средств без сомнения отражается на финансовых результатах работы предприятия за счет следующих моментов: увеличения выпуска продукции, снижения себестоимости, улучшения качества продукции (соответствие ее установленным стандартам), снижения налога на имущество и увеличения прибыли.

Эффективность использования основных средств выражается в основном обобщающим показателем фондоотдачи, который определяется как отношение валовой продукции к среднегодовой стоимости основных средств. Некоторые авторы

рекомендуют определять фондоотдачу как отношение выручки к среднегодовой стоимости основных средств. [2]

Причем многие авторы считают, что фондоотдача может рассчитываться как по отношению ко всей стоимости основных фондов, так и к стоимости машин и оборудования, а также к стоимости действующего оборудования (если есть законсервированные основные средства). На изменение фондоотдачи влияют многие факторы, классифицирующиеся по различным признакам. Причинами снижения фондоотдачи чаще всего может быть рост вложений денежных средств с целью улучшения условий труда, охрану окружающей среды, ускоренное развитие промышленности в отдельных районах страны, сдвигом в отраслевой структуре промышленности.

Фондоемкость – показатель, обратный фондоотдаче. Он характеризует стоимость основных производственных фондов, приходящихся на единицу стоимости выпускаемой продукции. В настоящее время этот показатель мало применяется в экономических расчетах, что объясняется трудностями исчисления его по видам продукции.

В процессе анализа выявляются и изучаются факторы, которые тем или иным образом влияют на результаты деятельности предприятия и в частности на эффективность использования основных средств. Тем самым выявляются пути и резервы увеличения эффективности использования основных средств. Ими могут быть ввод в действие не установленного оборудования, замена и модернизация его, сокращение целодневных и внутрисменных простоев, повышение коэффициента сменности, более интенсивное его использование, внедрение мероприятий по НТП.

Рассмотрим рейтинг эффективности использования основных средств по следующим показателям: фондоотдача, выручка в расчете на 1 рубль основных средств, валовая прибыль в расчете на 100 рублей основных средств (таблица 2).

Проведенный анализ данных за 2015 год по 32 районам Воронежской области и городу Воронежу выявил низкую эффективность использования основных средств на предприятиях Петропавловского, Каширского и Рамонского районов. В то же время высокие показатели эффективности использования основных средств наблюдаются в сельхозпредприятиях Подгоренского, Калачеевского и Верхнехавского районов.

На основе проведенной рейтинговой оценки прослеживается обратно пропорциональная зависимость между производственной нагрузкой на трактор и зерноуборочный комбайн и эффективностью использования основных средств. Это связано с тем, что увеличение нагрузки (сверх норматива) на единицу техники приводит к тому, что основные агромероприятия проводятся несвоевременно или не в полном объеме. Это часто приводит к увеличению степени засоренности посевов снижению обеспеченности растений кислородом и питательными веществами.

Следует отметить, что увеличение нагрузки на зерноуборочный комбайн приводит к увеличению срока уборки и резкому снижению урожайности за счет осыпания созревших зерен из колосьев, причем научно обоснованный срок составляет 10-14 дней.

Нам представляется возможным использование результатов рейтинговой оценки с целью оказания государственной поддержки предприятиям, имеющим низкую обеспеченность основными средствами и высокую эффективность их использования.

На основе проведенной рейтинговой оценки прослеживается обратно пропорциональная зависимость между производственной нагрузкой на трактор и зерноуборочный комбайн и эффективностью использования основных средств. Нами представляется возможным использование результатов рейтинговой оценки с целью оказания государственной поддержки предприятиям, имеющим низкую обеспеченность основными средствами и высокую эффективность их использования. К таким предприятиям можно отнести сельхозтоваропроизводителей следующих районов: Богучарского, Грибановского, Калачеевского, Ольховатского, Павловского, Погоренского, Репьевского, Таловского.

Таблица 2 – Результаты рейтинга эффективности использования основных средств

Район	Фондоотдача, руб.	Место	Выручка на 1 руб. основных средств, руб.	Место	Валовая прибыль на 100 руб. основных средств, руб.	Место	Сумма мест	Итоговое место
1 Аннинский	1,264	12	1,215	11	17,97	19	42	15
2 Бобровский	0,810	25	0,778	26	8,74	31	82	28
3 Богучарский	1,394	9	1,567	6	31,16	8	23	5
4 Борисоглебский	0,850	22	1,349	8	65,23	3	33	11
5 Бутурлиновский	0,739	29	0,635	28	7,24	30	87	29
6 Верхнемамонский	1,455	8	1,316	9	22,14	17	34	12
7 Верхнехавский	1,522	6	2,021	3	32,45	6	15	3
8 Воробьевский	1,130	14	1,017	19	16,30	21	54	19
9 Грибановский	1,080	15	1,733	5	81,09	1	21	4
10 Калачеевский	1,784	3	1,781	4	39,54	4	11	2
11 Каменский	0,771	27	0,787	25	22,82	15	67	24
12 Кантемировский	0,643	30	0,481	31	11,87	26	87	30
13 Каширский	0,577	32	0,592	29	4,37	32	93	32
14 Лискинский	10,598	1	1,104	17	23,94	13	31	8
15 Нижне-девицкий	0,770	28	0,801	24	26,52	9	61	21
16 Новоусманский	0,794	26	0,807	23	17,14	20	69	25
17 Новохоперский	1,008	19	1,212	12	23,96	12	43	16
18 Ольховатский	2,497	2	2,291	1	8,34	29	32	9
19 Острогожский	1,074	16	0,928	20	13,24	24	60	20
20 Павловский	1,323	10	1,301	10	25,73	10	30	7
21 Панинский	1,474	7	1,064	18	19,13	18	43	17
22 Петропавловский	0,582	31	0,513	30	10,17	28	89	31
23 Поворинский	0,954	20	1,207	13	24,49	11	44	18
24 Подгоренский	1,642	4	2,224	2	66,30	2	8	1
25 Рамонский	0,541	33	0,137	33	-1,34	33	99	33
26 Репьевский	1,033	17	1,160	15	33,14	5	37	10
27 Россошанский	0,833	23	0,838	22	11,43	27	72	26
28 Семилукский	1,176	13	0,741	27	13,22	25	65	22
29 Таловский	1,639	5	1,430	7	23,07	14	26	6
30 Терновский	1,273	11	1,207	14	22,32	16	41	13
31 Хохольский	0,885	21	0,875	21	13,64	23	65	23
32 Эртильский	1,020	18	1,145	16	31,77	7	41	14
г. Воронеж	0,819	24	0,146	32	16,14	22	78	27

После анализа обобщающих показателей эффективности использования основных фондов более подробно изучается степень использования производственной мощности предприятия.

Под производственной мощностью предприятия подразумевается максимально возможный выпуск продукции при достигнутом или намеченном уровне техники, технологии и организации производства.

Основными элементами, определяющими производственную мощность предприятия, являются: состав оборудования и его количество по видам; технико-экономические показатели использования машин и оборудования; фонд времени работы оборудования; производственная площадь предприятия (основных цехов); намечаемые номенклатура и ассортимент продукции, непосредственно влияющие на трудоемкость продукции при данном составе оборудования.

Выводы. Для наиболее эффективного использования основных средств необходимо регулярно проводить их переоценку и инвентаризацию, и знать их реальную стоимость. Учитывать их амортизацию, физический износ, необходимо вести учет движения основных средств. Единицей учета основных средств является инвентарный объект. Инвентарным объектом основных средств является объект со всеми приспособлениями и принадлежностями или отдельной конструктивно –

обособленный предмет, предназначенный для выявления определенных самостоятельных функций, или же обособленный комплекс конструктивно – сочлененных предметов, представляющих собой единое целое, предназначенный для выполнения определенной работы.

Повысить эффективность использования основных средств можно на основе следующих мероприятий [3]: оптимизации использования всех видов основных средств по времени и мощности; своевременной консервации неиспользуемых основных средств и аренды недостающих для оптимального ведения процесса производства; повышение удельного веса активной части основных средств; минимизация непроизводственных потерь рабочего времени машин и оборудования; более интенсивное использование машин и оборудования; повышение уровня квалификации обслуживающего персонала с целью минимизации простоев и времени ремонта оборудования; экономическое стимулирование работников за бережное отношение и эффективное использование основных средств; реконструкция производственных помещений и площадей с целью улучшения структуры основных средств предприятия; своевременная замена старого изношенного оборудования на современное, более мощное и производительное; своевременный ввод в действие новых основных средств, их техническое обслуживание и качественный ремонт.

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DOI <https://doi.org/10.18551/rjoas.2017-01.25>

STUDY ON THE RELATIONSHIP BETWEEN ISLAMIC LEADERSHIP STYLE, WORK ETHICS, JOB SATISFACTION, AND EMPLOYEE PERFORMANCE

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ABSTRACT

There are many studies to examine the relationship of Leadership Style, Work Ethic, Satisfaction and Employee Performance. However, these research more emphasis on study of non-Muslims. In addition, there is no study has comprehensively discussed the Leadership Style, Work Ethic, Satisfaction and Employee Performance. Therefore, this study will examine theoretically the relationship between Leadership Style, Work Ethic, Satisfaction and Employee Performance comprehensively and within Islamic context. The model development will be discussed. This theoretical study will be closed with conclusion and suggestion for future researchers.

KEY WORDS

Islamic leadership style, Islamic work ethic, Islamic job satisfaction, Islamic employee performance.

Islam as religion offers guidance to people about *halal* business, on how to run the business, and on how people should organize relationship with their neighbors in order to provide a good benefit for the common interests and to create wealth and prosperity for all human life. Islam not only tells people to work for their own health, but also to develop working relationships with other people for the interest and benefit of human life; this means that Islam encourages its followers to conduct entrepreneurship, as stated in Al Baqarah Verse 275 "...Allah hath permitted trade and forbidden usury".

The Prophet also praised the people who trade, in the hadith mentioned: "The reliable and trustworthy trader is with the prophets on the Day of Resurrection" (At Tirmidzi). According to Rafi ibn Khadlj, when the Prophet was asked which the best kind of earning was, he replied, 'That for which a man works with his hands. And honest trading.' (Al Baihaqi). Many of the Prophet's comrades were great traders, to name Abdurrahman Bin 'Auf, Abu Bakar, Umar ibn Khattab, Abu Sufyan and more (www.pengusahamuslim.com).

Islam plays an important role in the life of a Muslim in the world (Khaliq and Fontaine, 2011). Some researchers argue that Islam also affects the ways practiced in the management of an organization by a Muslim, which is usually called management from Islamic perspective (Khaliq and Fontaine, 2011). Starting in 2008, Emerald Group publishes an international journal on Middle East Islamic Finance and Management with the aim of allowing Muslim researchers to share their findings into a standardized journal. One of the most important topics examined are about leadership in the principles of Islamic values (Beekun, 2012). Although considered an important topic, unfortunately, only a few studies published in Emerald or other international journals that look at how Islamic principles applied to the Muslim employees of Islamic based organizations.

A study using the principles of Islamic by Hakim (2012) to employees of Bank Muamalat in Central Java states that there is a significant positive relationship between Islamic leadership with employee performance, i.e. if a leader implements Islamic values well within their leadership, the performance of employees increase. Similarly, according to Shafii (2013), the concept of Islamic leadership applying the characteristics of the Prophet Muhammad, i.e. *siddiq*, *amanah*, *fathanah*, and *tabligh*, becomes the most important elements to promote the establishment of better employee performance

This is contrary with the results of study by Lisbijanto and Budiyanto (2014) which states that servant leadership style does not significantly affect the performance of the

employees of cooperatives in Surabaya. The absence of a significant effect of servant leadership to employee performance means that regardless of the many values of this leadership style applied within the organization, it will have no effect on the level of employee performance.

In practice, the leadership could affect the Islamic work ethics, as in the study by Floyd (2010) which concludes that there is a significant relationship between the leadership styles with the ethics of an employee in an organization, either implicitly or explicitly. Development of a work climate that encourages the implementation of ethics that positively influence employees' behavior is significantly influenced by the style of leadership of a leader in an organization. Bennis and Nanus (1985, in Floyd, 2010), confirm, "A leader is the person responsible of a set of ethics or norms that regulate the behaviour of people in the organization. The leaders create moral characteristics which are run by members of the organization."

Yukl (2001) says that leadership behaviours such as building relationships, providing feedback and reward for good performance will result in more satisfied workers. More satisfied workers tend to survive in the company, engage in organizational behaviour that goes beyond their job descriptions and roles, as well as help to reduce the workload and stress levels of other members in the organization. They have a higher fidelity within the company and work harder, which in turn will result in better performance.

Leadership in Islam is the concept embodied in the Qur'an and Sunnah, which include human life from personal, family and even to the human race or group. This concept covers ways to lead and be led for the implementation of Islamic teachings to ensure a better life in this world and hereafter. God entrusted humans to become Caliph on earth, as stated in Al Baqarah Verse 30:

"Behold, thy Lord said to the angels: 'I will create a vicegerent on earth.'

Abdullah ibn Umar reported, "The Messenger of Allah, peace and blessings be upon him, said, 'Every one of you is a shepherd and is responsible for his flock. The leader of people is a guardian and is responsible for his subjects. A man is the guardian of his family and he is responsible for them. A woman is the guardian of her husband's home and his children and she is responsible for them. The servant of a man is a guardian of the property of his master and he is responsible for it. No doubt, every one of you is a shepherd and is responsible for his flock.'" (Al Bukhari and Muslim)

Some studies above show that there is a close relationship between Leadership Style, Work Ethics, Job Satisfaction, and Performance of Employees. However, research conducted does not pay much attention to the Islamic perspective. In addition, no study has comprehensively discussed the Leadership Style, Work Ethics, Job Satisfaction, and Performance of Employees. Therefore, this study will examine the relationship between Leadership Style, Work Ethics, Job Satisfaction, and Performance of Employees in the context of Islam.

Islamic Leadership (IL). Abu Najih Al 'Irbadh bin Sariyah RA said that Muhammad the Prophet gave heart-touching advice to us so that our heart became shaken, beating, and our tears dropped, and then we asked, "Hey, Muhammad the Prophet, it is likely the advice of those who will die and leave us forever, give us your will!" The Prophet, then, said, "I made myself will that all of you should be afraid of the God, besides listening and following orders, although they came from a slave" (Abu Daud and At Tirmidhi, Hadith Hasan Shahih).

Among the characteristics of Islamic leaders are as follows:

1. Have faith and fear Allah Almighty. A leader must have the nature of faith and is cautious, because it will bring leaders remain on the straight path of Islam to obey all the commands of Allah and shun the prohibitions. Allah has expressly forbids us to lift or make unbelievers as a leader, as stated in Ali Imran Verse 28: "Let not believers take disbelievers as allies rather than believers. And whoever [of you] does that has nothing with Allah, except when taking precaution against them in prudence. Moreover, Allah warns you of Himself and to Allah is the [final] destination."
2. Honest and showing good morality. An Islamic leader must be honest both to himself and to his followers, be the best example, consistency between words with deeds. In

addition, it is necessary to have good morality, moral commendable, firmly adhere to the mandate, and obey Allah.

3. Competent and having comprehensive knowledge. An Islamic leader must be have competent in the field, so people will follow him because of confidence in his ability. Besides having deep religious knowledge, a leader should also have extensive knowledge includes economic, legal, political, social and state administration knowledge.
4. Care for the people. Allah says in At Tawbah Verse 128: "There has certainly come to you a Messenger from among yourselves. Grievous to him is what you suffer; [he is] concerned over you and to the believers is kind and merciful.
5. Inspiring. An Islamic leader must be able to create safety and comfort and can lead to a sense of optimism to his followers.
6. Patience. An Islamic leader should be able to be patient in dealing with all kinds of problems and limitations as well as careful in decision-making.
7. Humble. An Islamic leader needs to have a humble attitude to dislike revealing his strengths (*riya*) and to not to put others down.
8. Deliberation. An Islamic leader must find and prioritize deliberation to solve every problem.

Islamic leadership style in this study is defined as the behaviour of leaders based on the character of the Prophet, i.e. *shiddiq*, *amanah*, *fathanah* and *tabligh*, to do the work and motivate employees to be able to behave as the rules of Islam to achieve common goals. Indicators of Islamic leadership in accordance with the Qur'an and the Hadith of the Prophet are as follows:

1. Shiddiq is correct in saying and good in deed. The foundation is on Al Qur'an hadith as follows:
 - a. Abdullah bin Mas'ud (may Allah be pleased with him) narrated that the Prophet (peace be upon him) said, "Truthfulness leads to Al Birr i.e. (piety, righteousness and every obedience to Allah) and Al Birr leads to Paradise, and a man keeps on telling the truth until he becomes a *siddiq* i.e. (a truthful person).
 - b. The Prophet said, "The most perfect of the believers in faith are the best of them in morals." (At Tirmidzi Number 682)
 - c. In Al Qur'an, Al ahzab Verse 71 and 72, "O you, who have believed, fear Allah and speak words of appropriate justice. He will [then] amend for you your deeds and forgive you your sins. And whoever obeys Allah and His Messenger has certainly attained a great attainment."
 - d. In An Nisa Verse 9, "And let those [executors and guardians] fear [injustice] as if they [themselves] had left weak offspring behind and feared for them. So let them fear Allah and speak words of appropriate justice."
 - e. In the hadith, narrated by Abu Huraira, the Prophet said, "Anybody who believes in Allah and the Last Day should talk what is good or keep quiet." (Bukhari Number 6018, Muslim Number 47)
2. *Amanah* means fulfilling or upholding trusts. The foundation is on Al Qur'an hadith as follows:
 - a. Al Isra Verse 34, "...And fulfil [every] commitment. Indeed, the commitment is ever [that about which one will be] questioned.
 - b. Al An'am Verse 152, "And the covenant of Allah fulfill."
 - c. An Nisa' Verse 58, "Indeed, Allah commands you to render trusts to whom they are due and when you judge between people to judge with justice. Excellent is that which Allah instructs you. Indeed, Allah is ever Hearing and Seeing."
 - d. Abu Huraira reported: The Messenger of Allah, peace and blessings be upon him, said, "The signs of a hypocrite are three, even if he fasts and prays and claims to be a Muslim: when he speaks he lies, when he gives a promise he breaks it, and when he is trusted he is treacherous." (Mutafaqun 'Alaih).

3. *Fathanah* means smart and having much knowledge. The foundation is on Al Qur'an hadith as follows:
 - a. From Abu Hurairah, the Prophet says "Shall a matter be handed over to those not good in it, wait for it to collapse." (Al Bukhari)
 - b. War Strategy by the Prophet.

In the Battle of Badr, it was mentioned that the troops of Quraish were nine hundred to a thousand, while the number of Muslim troops was only three hundred and ten, or three hundred and thirteen. To find out the number of the enemies, the Prophet asked to a black slave of Bani Hajaj before the Battle of Badr started. The slave replied, "Plenty." Therefore, the Prophet asked the second time, "How many camels are slaughtered every day?" "Sometimes, Nine or ten camels every day," replied the slave. The comrades said, "It means that the number of our enemies was nine hundred to a thousand." Imam Ibn Kathir quoted this in his commentary. Prophet estimated the number of enemy troops from the foods they ate. Generally, a camel was enough for one hundreds of people. (<http://kisahikmah.com/bagaimana-cara-rasulullah-memperkirakan-jumlah-pasukan-musuh/>)

4. Tabligh means able to communicate gently and explain things in an easily understood way. The foundation is on Al Qur'an hadith as follows:
 - a. At Thaha Verse 43 and 44, "Go, both of you, to Pharaoh. Indeed, he has transgressed. And speak to him with gentle speech that perhaps he may be reminded or fear (Allah)."
 - b. Al A'raf Verse 55, "Call upon your Lord in humility and privately; indeed, He does not like transgressors."
 - c. Al Isra Verse 28, "And if you [must] turn away from the needy awaiting mercy from your Lord which you expect, then speak to them a gentle word."

Islamic Work Ethic (IWE). In the book of Islamic Business and Economic Ethics by Riva'i (2012), ethics is defined as doing things correctly and well, doing rights in accordance with the moral obligation and doing everything in a responsible manner. Yousof (2012) confirms that work ethic is about working efficiently on time, behave well toward coworkers and customers with high performance and loyal to the organization.

Some western economists themselves have sued the Western thinking suggesting that economics is essentially neutral lately. The view of value-free economics has been rejected. Economics should be attached and no neutral on values or social ethics.

One of the key studies in Islam is a matter of work ethic. Understanding ethics is a rule or set of principles that govern human life. In Indonesia, ignorance toward work or business ethics has been going on a lot, especially by conglomerates. The businesspersons and economists with a strong capitalist ethics refuse to enter into the discourse of economics (Riva'i, 2012).

In the business world, that requires ethics, Islam has called on the urgency of ethics for all human activities dating back more than 14 centuries ago. Even God sent the Prophet to improve the ethics of the human beings:

Abū Hurayrah relates that Prophet Muhammad said, "I have only been sent to perfect good moral character." (Al Bukhari Number 273)

In this noble hadith the Prophet explained that one of the objectives and tasks most importantly for him was teaching a noble character and perfecting it. This shows how Islam pays much attention to the condition of every human character. Noble character is a pillar of the triumph of a people. It was proven by the perfect morals of the Muslims under the guidance of the Prophet; they were able to achieve greatness and glory of the people that was never achieved before.

In Islam, ethics understood as morals or *akhlaq* which aims to educate human about good manners. Ethics can be found in verses of the Qur'an as well in the hadiths of the Prophet Muhammad. Beekun (2012) quoted from Rokhman (2010) defines the work ethic of Islam as "The series of moral principles that distinguish what is right and wrong in the context of Islam". Rizk (2008, in Rokhman, 2010) indicates that the work ethic of Islam is a worker orientation of the main guidance, namely Al Qur'an and the teachings of the Prophet Muhammad.

Similarly, Ali and Al-Owaihan (2008) define IWE as an orientation that shapes and influences the engagement and participation of followers in the workplace. This means that the procedure is goodness in human needs, and the need to establish a balance of individual and social life (Ali and Al-Owaihan, 2008). IWE is a means to the fulfillment of life and encourage business movement in the higher levels (Ahmed, 1976 quoted from Ali and Al-Owaihan 2008). Ali and Al-Owaihan (2008) highlight that IWE sees work as a way to promote self-interest economically, socially, and psychologically, as well as to support the social authority, and to improve social welfare and affirm their loyalty derived from the Qur'an and Sunnah. They mentioned that IWE interprets the work and commitment that will make individuals aware of their targets. It is described on the following Qur'anic verse, "And that there is not for man except that [good] for which he strives." (An Najm: 39).

Yousef (2001) says that studies examined IWE were limited, and they show some similarities with PWE, in which both emphasizes the dedication, commitment, hard work, and creativity and integrity to avoid unethical accumulation of wealth. However, different from the PWE, IWE put more emphasis on intentions rather than results. It is clearly stated in the Hadith:

"Umar ibn Khattab RA said, 'I heard the Messenger's saying, 'the reward of deeds depends upon the intentions and every person will get the reward according to what he has intended. So whoever emigrated for worldly benefits or for a woman to marry, his emigration was for what he emigrated for'." (Bukhari in Nawawi's Number 1)

The above hadith means that one who works hard without good intentions will not get the reward in the Day of Judgment. The work becomes useless, as it lacks of sincerity towards Allah. The Islamic work ethic teaches the unique behavior in everyday life as it is based on the Qur'an and the Sunnah (the application of Islamic law at the time of the Prophet that includes any words or deeds and teachings, rules, guidelines and directives). This is reflected in the following Qur'an Verses as proof that we follow the guidance of the Prophet Muhammad, as a role model, mentor and coach in all situations of life, including work. Allah Almighty said:

"There has certainly been for you in the Messenger of Allah an excellent pattern for anyone whose hope is in Allah and the Last Day and [who] remembers Allah often." (Al Ahzab Verse 21).

According to Ali and Owaihan (2008), there are four main concepts in IWE; these concepts are business, competition, transparency, and moral responsibility. Enterprises are seen as something needing to serve themselves and society. Productive engagement minimizes the economic and social problems, although it still allows one to achieve a decent standard of living for himself and his family. More, Ali and Owaihan (2008) say that individuals have to compete fairly and honestly and conduct business activities with good intentions.

Islamic Job Satisfaction (IJS). Islamic jobs satisfaction in this study covers several aspects. Before doing the work, the intentions are solely to devote completely to Allah, and tranquility while working is if the execution of the work is straight and does not violate the Sharia as predetermined by Allah and tranquility after work indirectly emerges when someone makes the work as a part of worship.

Ruhiyyah Job Satisfaction. According to Al-Ghazali (2010), here are two meanings that lead to the *ruhhiyyah* elements, also named as *rabbaniyyah*, which means carrying divine intentions or *jism lathif*, and the second is the soul only Allah who knows, as in the word: "And they ask you, [O Muhammad], about the soul. Say, "The soul is of the affair of my Lord. And mankind has not been given of knowledge except a little".

The term *ruhiyyah* in this investigation refers to the intent of the heart. *Ruhiyyah* element by Al-Ghazali is described as a king in a kingdom. The most important function of the soul is to look at the essence (truth) because that is where it gets happiness. Similarly, *ruhiyyah* satisfaction, if a person has clear intentions because of Allah, then that is when the workers achieve satisfaction in their work.

Ruhiyyah job satisfaction in this study refers to the satisfaction supported by intrinsic satisfaction when the work has been done in order to achieve the pleasure of Allah and in order to get closer to (*taqarrub*) to Allah. Based on the Qur'an and the sayings of scholars:

QS. Ar-Ra'd:28: "Those who have believed and whose hearts are assured by the remembrance of Allah. Unquestionably, by the remembrance of Allah hearts are assured."

Syaikhul Islam Ibnu Taimiyyah says, "Indeed, in this world there is *Jannah* (heaven), and those who have not entered the heaven in this world then he will not get into heaven in the hereafter. The heaven in this world is complete love and *ma'rifah* (perfect knowledge) to Allah and always *dhikr* to Him, coupled with a feeling of calm and peace whenever close to Him, and always believe in Him in love, fear, hope, trust, and social live, by making Allah the only one filling and mastering our heart, as determination and the will of us as a servant. This is the enjoyment of the world unequaled and which constitutes *qurratul 'ain* (happiness of the heart) for people who love and know Allah (see the book "al-waabilush shayyib" p 69).

Intellectual Job Satisfaction (*Aqliyyah*). Intelligence by Al-Ghazali (2010) is seen as similar to a prime minister - the higher the intelligence, the happier the person will be. Al-Ghazali also emphasized that intelligent and knowledgeable soul will be able to master each of all branches of science and this will affect behavior. Intelligence makes humans able to distinguish between the properties of good and bad.

In this study, job satisfaction is referring to intellectual happiness as employees can acquire new knowledge in their work. Based on Mujadilah Verse 11:

"...And when you are told, 'Arise', then arise; Allah will raise those who have believed among you and those who were given knowledge, by degrees. And Allah is acquainted with what you do."

Social Job Satisfaction (*Nafsiyyah*). *Nafsiyyah* refers to passion, which is the collective name for human feelings. Among elements of passion expressed by Al-Ghazali (2010) is an element of social interaction. He said that excitement would grow if one to have a good relationship with the king. In the context of the work, the king is interpreted as the employer. In this study, an employee achieves social job satisfaction when employees get to know the other person, as in AHujurat Verse 13: "O mankind, indeed We have created you from male and female and made you peoples and tribes that you may know one another. Indeed, the most noble of you in the sight of Allah is the most righteous of you. Indeed, Allah is Knowing and Acquainted."

Material Job Satisfaction (*Jasadiyyah*). Material element (*jasadiyyah*) by Al-Ghazali is also called as physical nature of man himself - they have been created from the ground. This relates to the body and everything seen and touched. Al-Ghazali also associates this with position in the workplace. In addition, salary is also a prt of job satisfaction.

Work is a means to sustenance and viability, as well as a goal in life. If a person has great wealth, and one can live without working, then one will not be able to understand the values of humanity and does not know the real life tasks, because, as a human being, then this person cannot realize the purpose of the existence.

Humans have a purpose in life, which is fight for the truth and against falsehood. The mission is of truth, goodness, productive cooperation, and affection between people. Fulfilling this mission means to realize the goal of human life.

"Indeed, We have made that which is on the earth adornment for it that We may test them [as to] which of them is best in deed." (Al Kahf Verse 7)

Qur'an does not say that worldly pleasures are the ultimate goal of human life; they are means of achieving the goal of life. According to Qur'an, a factor that makes one closer to the realization of human life is a charity that will benefit the people and not harm them at all.

Our body is an instrument or *wasilah* to perform activities for the sake of self-perfection. In this study, material satisfaction (*jasadiyyah*) is the perceived as happiness of employees when receiving salaries. From Abdullah ibn Umar, the Prophet said, "Give the worker his wages before his sweat dries." (Ibn Majah, Sahih)

Islamic Employee Performance (IEP). Performance is the result or the overall success rate of a person during a certain period in carrying out the task compared with a range of possibilities, such as the standard of the work, the targets, or criteria that have been

determined and agreed. Simamora (2015) argue that performance is the degree to which the employee reaches the job requirements. Performance refers to the level of success in implementing the tasks and the ability to achieve the goals set. Otherwise, performance is good and successful if the desired goal can be achieved well (Riva'i, 2011).

Narrated by Az-Zubair bin Al-`Awwam, "The Prophet said, 'It is better for anyone of you to take a rope (and cut) and bring a bundle of wood (from the forest) over his back and sell it and Allah will save his face (from the Hell-Fire) because of that, rather than to ask the people who may give him or not'." (Al Bukhari Number 1471)

Performance is the real behavior of each person, as an achievement by employees in accordance with its role in companies. Employee performance is a very important point in the company's efforts to achieve its objectives, as Allah says as follows:

"Say, 'Each works according to his manner, but your Lord is most knowing of who is best guided in way.'" (Al Isra Verse 84)

One way that can be used to see the development of a company is to see the results of performance appraisal. According to Rival (2009), the object of performance appraisal is a skill, the ability of employees to carry out a job or task that is evaluated by using a specific benchmark objectively and regularly. From the results of the appraisal on performance of employees, we know the performance of the company, or in other words, the performance is concrete work results that can be observed and measured.

Islamic employee performance is the total achievement of the work of Muslim workers, including the accuracy and speed of work, quality of work, and the desire to serve customers and zakat. The indicator is based on research by Hakim (2012) which states that an employee's performance is based on what is stated in the Qur'an and Hadith, namely:

Quality of Work - employees finish their work based on the standard determined. On the authority of Abu Ya'la Shaddad bin Aus, that the Messenger of Allah said: "Verily Allah has prescribed *ihsan* (perfection) in all things. Thus if you kill, kill well; and if you slaughter, slaughter well. Let each one of you sharpen his blade and let him spare suffering to the animal he slaughters." (Muslim)

Accuracy and Speed of Work - it has become the duty of every worker to allocate hours of work just for the purposes of finishing their tasks and jobs. Therefore, it is not appropriate for an employee if they always receive full wages and salaries while sometimes they cut their working hours for personal matters. They ask that their rights be met, even if possible, it must be increased, but at the same time reducing the rights of others and do not want to comply with Allah's orders.

"Woe to those who give less [than due], who, when they take a measure from people, take in full. But if they give by measure or by weight to them, they cause loss. Do they not think that they will be resurrected. For a tremendous Day - the Day when mankind will stand before the Lord of the worlds?" (Al Mutaffifin Verse 1-6).

This verse obliges Muslim workers to always keep and use their time to fulfill their duties and not to use the time while working for the other interests not part of the job. The speed and accuracy in work means employees in completing the task must always be on time and use the time just for the sake of work. By: Abu Hurairah RA "Among the good signs of one's obedience to Allah is that he leaves what is not agreeable for him (Ahmad, Tirmidzi, and Ibnu Majah); Al Ashr Verse 1-2, "By time, indeed, mankind is in loss."

The Willingness to Serve Others - one method exemplified and taught by the Prophet in the trade is to intend to serve others sincerely.

From Abu Hurairah RA, indeed the Messenger of Allah has said, "Anybody who believes in Allah and the Last Day should not harm his neighbor, and anybody who believes in Allah and the Last Day should talk what is good or keep quiet." (Bukhari Number 6018, Muslim Number 47).

Quality of Work - work efficiently and effectively relates to the attitude of professionalism. These characters mean putting a person based on expertise. In a hadith, it is said, "Shall a matter be handed over to those not good in it, wait for it to collapse." (Al Bukhari). Quality of the work in this study referred to employees working as *itqan* (precise,

focused, clear, and complete), based on the hadith, "Allah verily likes if one of you do his job *itqan* (thoroughly and proficiently)." (Thabrani).

Employee Always Pay *Zakat* from His Salary - performance by Islam is not only based on material achievement, but also on how one gets a way to get closer to Allah; this is called spiritual performance. Spiritual performance emphasizes that what is gained in the world can be used as a means to worship Allah. In Adh-Dzariyat Verse 56, "And I did not create the jinn and mankind except to worship Me." Thus, employees must pay *zakat* from their salary.

Good wealth is the one used for the good of the world and hereafter. Just like in Al Baqarah Verse 43, "And establish prayer and give *zakat* and bow with those who bow [in worship and obedience]." The Prophet said, "Islam has been built on five [pillars]: testifying that there is no deity worthy of worship except Allah and that Muhammad is the Messenger of Allah, establishing the *salah* (prayer), paying the *zakat* (obligatory charity), making the hajj (pilgrimage) to the House, and fasting in Ramadhan." (Al Bukhari).

THE DEVELOPMENT OF CONCEPTUAL MODEL

The Thinking Process in the Conceptual Framework. In an effort to reach a person's performance to be optimal, it takes many factors that can be applied in the company. To achieve high performance one must actively work, and through the activities, physical and mental work needs to be done (Khairuddin, 2010). Included in the mental-psychological strength is a factor of IL, IWE, and the IJS.

Framework of the thinking process in this study was based on theoretical studies derived from the Qur'an and Hadith. In addition, the basic source of research is also derived from previous empirical studies related to Islamic leadership, Islamic work ethic, and Islamic job satisfaction as well as performance.

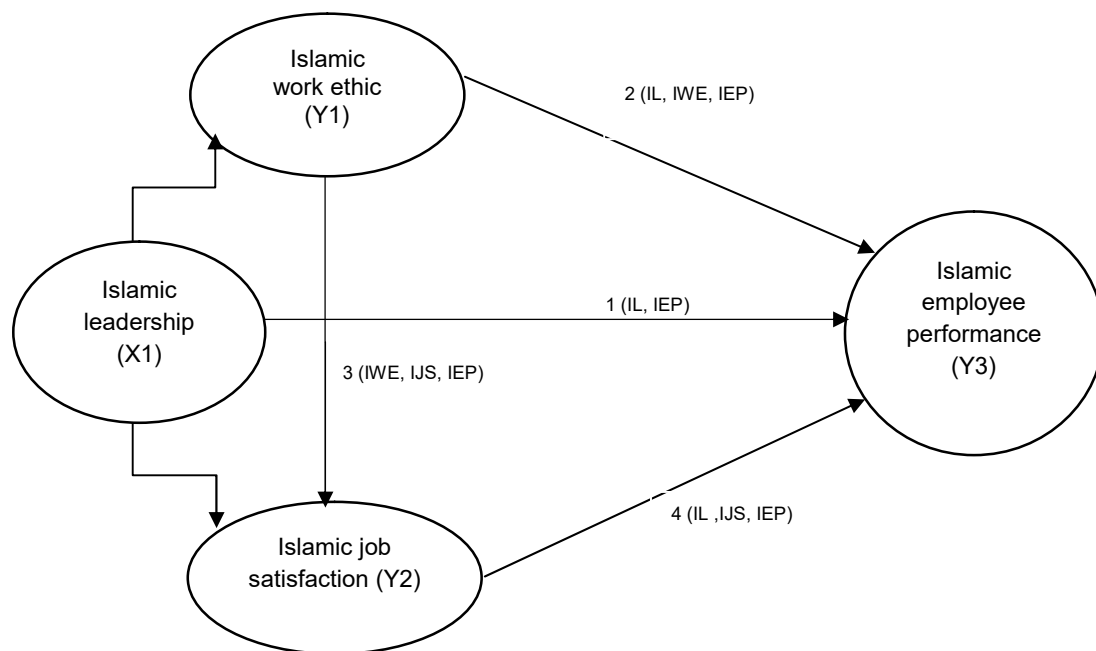


Figure 1 – Conceptual Framework on the Effect of Islamic Leadership, Islamic Work Ethics, Islamic Job Satisfaction on Islamic Employee Performance

According to Musta'in (2014), spiritual leadership suggests that with the implementation of such a model of leadership in the institutions, it inspires members, arises and moves them through harmony, tolerance, responsibility, exemplary, service, compassion and spiritual qualities to in achieving the goals, processes, cultural attitudes and behaviors of leadership for the institution (Tobroni, 2010). This leadership can also affect the work ethic in an organization, because the aspect of power in leadership can be used to embed either good

or bad in the institution. Floyd (2010) similarly says that a leader is the one responsible for the formation of norms and ethics in an organization.

In addition to leadership, other factor that affects the performance is Islamic work ethic. Preliminary studies on Islamic work ethics (EKI) began in the 1980s when some Islamic scholars published their research about the work ethics from an Islamic perspective. Research from Naqvi (1981), entitled "Ethics and Economics: An Islamic Synthesis" contains the first discussion focused on the Islamic work ethic (Ibrahim, 2013). Next, Ali and Owaihan (2008) and Yousof (2012) conclude that Islamic work ethic (EKI) applied daily on an organization will have positive impact on the performance of its members

All three factors, namely Islamic leadership, Islamic work ethic, Islamic job satisfaction, are those that the author wants to examine as to know their effect on performance. In preparing the research hypothesis, the three factors will be outlined in a few variables consisting of Islamic leadership, work ethics, and job satisfaction.

Model Development. Based on the framework above, the conceptual framework can be described as follows in Figure 1.

The relationship between variables above are based on previous research. The basis of each relation from one up to ten can be shown below:

1. Musta'in (2014), Fry (2011), Daud (2014).
2. Johnson (2008), Floyd (2010), Yesil (2012), Ali Owaihan (2008), Abdi *et al.* (2014), Imam (2013).
3. Hayati (2012), Soleimani (2011), Platis *et al.* (2015), Farooqui and Asha (2014).
4. Munir *et al.* (2012), Saleem (2015), Mihalcea (2013), Platis *et al.* (2015), Farooqui and Asha (2014).

CONCLUSION

Based on the study presented above, the following conclusions can be drawn.

1. A leader applying the leadership style of the Prophet Muhammad SAW in leading employees will show the following characteristic: *shiddiq, amanah, fathanah* and *tabligh*.
2. Islamic leadership can improve the application of Islamic work ethics to improve the quality of Islamic employee performance.
3. Islamic leadership style can improve employee satisfaction to improve Islamic employee performance.
4. Application of Islamic work ethic can improve Islamic job satisfaction to improve of Islamic employee performance.

The present study is theoretical and it needs to be empirically verified. Therefore, the future researchers are expected to follow the theoretical study up by conducting empirical studies, mainly in Islamic based companies. The results obtained would be used to strengthen this theoretical study.

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DOI <https://doi.org/10.18551/rjoas.2017-01.26>

ИНСТРУМЕНТАРИЙ МЕНЕДЖМЕНТА В НЕКОММЕРЧЕСКИХ ОРГАНИЗАЦИЯХ **THE MANAGEMENT TOOLKIT IN NONPROFIT ORGANIZATIONS**

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АННОТАЦИЯ

В статье представлен авторский подход к обобщению особенностей функций и методов менеджмента в некоммерческих организациях, где доминируют методы социальной психологии, эвристического поиска, интуитивного постижения, установления доверия и высшей солидарности в некоммерческой организации.

ABSTRACT

The article presents the author's approach to the generalization of features and functions of management practices in non-profit organizations, which is dominated by methods of social psychology, heuristic search, intuitive comprehension, establishing trust and highest solidarity in the non-profit organization.

КЛЮЧЕВЫЕ СЛОВА

Менеджмент, некоммерческие организации, неформальные коммуникации, социальная ответственность.

KEY WORDS

Management, non-profit organizations, informal communications, social responsibility.

В традиционном менеджменте коммерческих организаций выделяют следующие цели: экономические (максимизация прибыли и объема продаж); рыночные (активная стратегия поведения, освоение новых сегментов рынков); государственно-политические (рост производства, налоговые, пенсионные и другие платежи в бюджет); правовые (законопослушание и исполнительская дисциплина); социальные (удовлетворение потребностей общества); экологические (минимизация отходов и выбросов в окружающую среду); научные и технологические (поиск новых подходов к производству продукции, создание новшеств) [6]. Причем главной целью является (экономическая цель менеджмента коммерческой организации) максимизация прибыли и объема продаж. В некоммерческой организации экономическая цель является второстепенной и сводится в большинстве случаев к минимизации текущих издержек и расходов будущих периодов. Главной целью в менеджменте некоммерческих организаций является социальная цель – это удовлетворение потребностей общества и социальная ответственность.

Цели, характер и содержание некоммерческой деятельности определяют особенности и значительное отличие менеджмента в некоммерческих организациях от его традиционных видов. Соответственно в менеджменте некоммерческих организаций меняется репрезентативность многих традиционных показателей. Акцент переносится с задачи выпуска продукции и длительного функционирования на стабильном рынке на социальные задачи удовлетворения потребностей общества, активной стратегией

поведения на различных социальных и экологических рынках, поиск новых подходов и решений разнообразных социальных и экономических процессов.

В условиях деятельности некоммерческих организаций резко возрастает роль менеджера, а его личность, способности, квалификация и профессиональные умения фактически определяют судьбу всей некоммерческой деятельности [1]. В работе такого менеджера доминируют методы социальной психологии, эвристического поиска, интуитивного постижения, установления доверия и высшей солидарности в деятельности некоммерческой организации. Под влиянием социальных идей перестраивается весь инструментарий менеджмента, его управленческого воздействия и процедура принятия управленческого решения.

Возникает особая взаимосвязь и логическая последовательность осуществления основных функций менеджмента, так как резко повышается значение процессуальных и социально-психологических функций менеджмента, таких как коммуникации, мотивация, процесс делегирования полномочий. Среди способов организации менеджмента в некоммерческих организациях преобладают неформальные виды, опирающиеся на закономерности межличностных отношений и групповой динамики [8].

Особенности деятельности некоммерческой организации предъявляют повышенные требования к видам и формам коммуникаций в менеджменте. Характер деятельности некоммерческих организаций, альтернативность подходов и многовариантность решений требуют многообразия форм и дифференциации видов коммуникаций. Коммуникации в некоммерческих организациях служат обеспечению принятия качественных решений при достижении полноты информации. Коммуникации в менеджменте некоммерческих организаций классифицируются по направлениям осуществления, областям использования, способам и формам коммуникаций. Коммуникации используются практически во всех функциях менеджмента некоммерческих организаций.

Способы коммуникаций в менеджменте некоммерческих организаций имеют формальный и неформальный вид. В отличие от традиционного менеджмента, в менеджменте некоммерческих организаций главную роль имеет неформальный вид коммуникаций [5]. Креативный элемент некоммерческой деятельности требует эффективных видов неформальной коммуникации (творческие встречи, конференции, симпозиумы, частные беседы и т.д.). Также распространены содержательные виды коммуникаций, связанные с полнотой информации, достоверностью и качеством социологических исследований. Это связано с тем, что процессуальные коммуникации используются при формальных способах и строгой регламентации, в то время как содержательные коммуникации достигают наибольшей эффективности при неформальном способе взаимодействия.

Большое значение в менеджменте некоммерческих организаций имеют коммуникации с внешней средой (партнерами, населением, государственными органами и институтами, политическими структурами и общественными организациями) [2]. Эффективность коммуникаций полностью зависит от организации процессов передачи информации и оптимальности ее использования. Будущее деятельности некоммерческих организаций тесно связано с распространением коммуникационных сетей и оптимальной организацией информационных каналов.

Современные теории коммуникаций базируются на дихотомии понятия коммуникации, то есть понимания ее как действия и рассмотрения как взаимодействия. В основе изучения соответственно должны лежать внутриличностные, межличностные и коммуникации в малых группах, базирующиеся на методах социальной психологии.

Внутриличностная коммуникация как связующие процессы внутри личности. Особое значение имеют эти процессы в социальной деятельности некоммерческих организаций, где сознательные и подсознательные импульсы объединяются в создании образа, мысли и идеи. Сигналы, поступающие под влиянием внешней среды, чувств, переживаний, суждений и умозаключений работника некоммерческой организации, перерабатываются мозгом и превращаются в информацию для использования в практической деятельности. В свою очередь поток информации

является совокупностью ее единичных элементов, которые возникают в сложных системах сознания и познания работника некоммерческой организации и взаимодействуют с его чувствами профессионального и гражданского долга.

Межличностная коммуникация является одним из наиболее распространенных и эффективных видов взаимодействия в менеджменте некоммерческих организаций [4]. Здесь личности действуют как источники и одновременно как получатели информации. Будучи процессом с множественными обратными связями, межличностная коммуникация является одним из наиболее интенсивных видов взаимодействия. Она отличается наибольшей концентрацией потоков, наименьшим рассеиванием и потерей информации. Это вид коммуникации важен в общественных, социокультурных и экологических направлениях деятельности некоммерческих организаций.

Коммуникации в малых группах составляют основу связующих процессов в менеджменте некоммерческих организаций. Они играют важнейшую роль на стадии социальной адаптации граждан и социальной поддержки населения [7]. И что особо важно малые группы содержат множество каналов разнородной информации. А так как любая информация содержит значительную долю субъективизма и оценивается работником на основе его понятий, убеждений и прошлого опыта, то такая информация проходит «очистку» в малой группе и систематизируется для использования в рациональной дальнейшей деятельности некоммерческой организации.

В некоммерческой организации изменяются соотношения между различными видами контроля. Они все больше нацелены на самоконтроль, на стратегический контроль внедрения идеи и миссии некоммерческой организации, причем финансово-экономические виды контроля остаются неизменными. Особое значение приобретают коммуникации, связанные с контролем социальных и экологических процессов. В них основу составляет процессуальный характер и непрерывный обмен информацией.

Особые изменения претерпевают функции и методы менеджмента в управлении персоналом некоммерческой организации. Особые цели и задачи стоящие перед той или иной некоммерческой организацией требуют от работника соответствующей квалификации и особых профессиональных знаний и умений. В социально ориентированных структурах происходит значительное повышение количества компетенций необходимых работнику [3]. Формирование типа персонала определенной некоммерческой организации требует работников, способных брать на себя ответственность и принимать решения. Делегирование полномочий и связанное с этим сокращение полномочий высших уровней иерархии некоммерческой организации тесно связаны с ростом инициативы, индивидуальной свободы и компетентности персонала.

В менеджменте некоммерческой организации изменяется тип поведения работника и коллектива в целом. Главным компонентом поведения становится не столько целеориентированное рациональное действие, сколько ценностно-ориентированное рациональное действие. Работник в некоммерческой организации подчиняет свое поведение определенным требованиям, в выполнении которых он видит свой гражданский и профессиональный долг. Таким образом, творческий характер работы в некоммерческой организации и особенности личности работника заставляют соотносить выполняемый профессиональный долг с собственной ценностной ориентацией и гражданской позицией. А так как ценности личности тесно связаны с мотивацией, то в менеджменте некоммерческой организации значительно изменяются такие функции менеджмента, как организация взаимодействий и управление мотивацией.

В менеджменте некоммерческой организации значительно видоизменяется состав, структура и содержание методов управления: большее место, чем в традиционном менеджменте, отводится анализу и прогнозу, качественным показателям, социально-психологическим методам воздействия, обогащается содержание эвристических подходов, сужается круг возможностей для применения административных рычагов.

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DOI <https://doi.org/10.18551/rjoas.2017-01.27>

MANGROVE FOREST DESTRUCTION IN DAMAS BEACH, EAST JAVA, INDONESIA: SOCIO-ECOLOGICAL ANALYSIS

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ABSTRACT

The high percentage of land conversion from mangrove forests to plantation for coconut and other crops between 1998 and 2013 resulted in sharp decline of mangrove forest in Damas Beach. Damas beach is one of the areas covered by mangrove forests in Teluk Prigi and located on the most western area. The total area of the mangrove forest in 1998 was 10 hectares. The number decreased to 30% in 2013. Even though reforestation had been taken place, the mangrove area keeps decreasing. It affected coastal resources, more particularly the number of catch. Fish is the backbone of the local community living around the mangrove forest. The purpose of the study was to give information, for both personal and institutional, that is likely to impact the dynamics of mangrove forest area in Damas Beach. In addition, it also describes the level of mangrove forest destruction more particularly as the effect of human activity. It is expected that socio-ecological system is taken into account in order to establish sustainable management program for mangrove forest.

KEY WORDS

Mangrove Forest Destruction, Function of Mangrove Forest, Coastal Resource Management, Socio-Ecological System, Damas Beach

Benda et al (2001) introduced the concept of natural resources as public social security in order to develop awareness among Indonesian that they have damage the environment that becomes their source of income. The expert mentioned the findings of various studies conducted in various regions in the country. Not only does the book enrich our understanding towards sufficient social security, but it also highlights the discrepancy in the national system of social security.

Study focusing on resources from mangrove forest was conducted by Susilo et al (2013); the findings stated that the political and economic system in Karanggandu heavily influenced the sustainability of mangrove resources. Mangrove forest conservation is instrumental to guarantee social security for local community. When mangrove forest turns into coconut plantation and rice field, the local community may lose their social security. Furthermore, economic system-based sustainable coastal management works best when it begins in the local area since operational-wise, local economic system heavily influences resource management system.

Mangrove forest area in Pancer Bang has decreased dramatically. In 2008, the Department of Marine and Fisheries of Trenggalek reported that the total area of mangrove was 12 hectares. Due to the rapid conversion from mangrove forests to coconut plantation and plantations for other crops, the total area of mangrove in Pancer Bang shrunk.

Some deforestation programs have been carried out by the Department of Marine and Fisheries of Trenggalek in Pancer Bang, for example planting approximately 95,000 mangrove seedlings (*Nypa fruticans*, *Rhizophora mucronata* and *Rhizophora apiculata*). Based on the observation in 2013, it is evident that there is massive land conservation in Pancer Bang mangrove area (Figure 1).

Pancer Bang mangrove shrunk to 30% or approximately to 3.6 hectares. The largest land conversion happened in the tidal area around Damas and Gilang River. 2.8 hectares of mangrove around Damas River became plantation and residential area while another 2.8 hectares became coconut plantation. As an addition, 3.6 hectares of mangrove in the tidal area around Gilang River has been turned into coconut plantation.

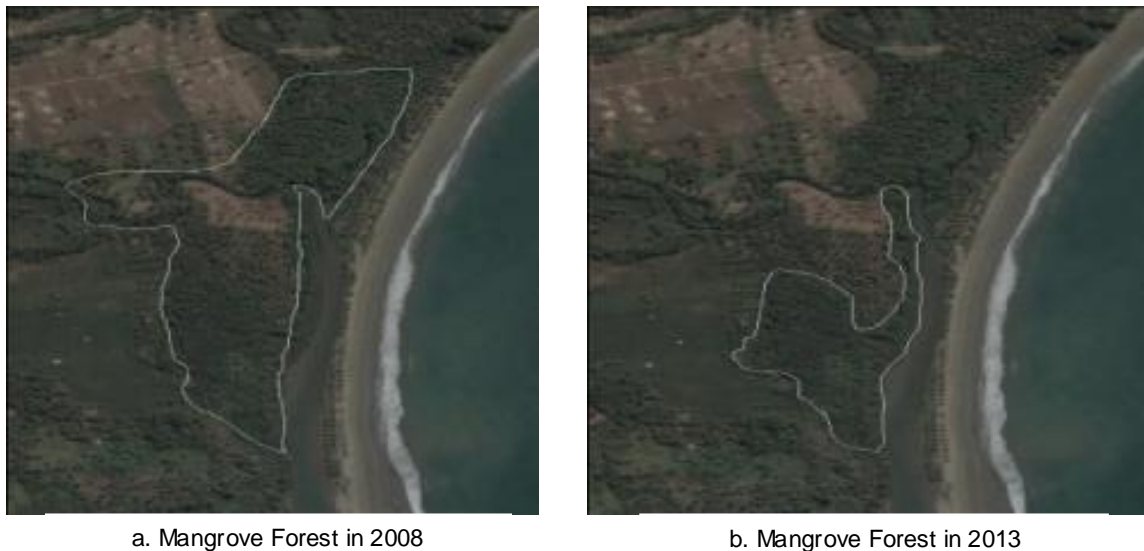


Figure 1 – Land Conservation in Pancer Bang Mangrove Forest (Susilo, et al. 2013)

Observation in 2015 revealed two different facts. Pancer Bang mangrove area keeps declining; currently, there are only 3 hectares of mangrove in the area. Coastal erosion also becomes a threat to Pancer Bang mangrove since the rehabilitation area is now no longer protected from the tidal waves. In the other side, 500 mangrove trees are planted in Pancer and Ngrumpukan. Therefore, it is important to conduct a study focusing on the dynamics of the mangrove forest in the area more particularly from the social perspective.

LITERATURE REVIEW

Significance of Coastal Resource Social Security for Local Community. National-scale event has always had impact towards local community. The process is called sociological reflection. The establishment of the 1975 Rural Government Regulation affected indigenous resource management such as coastal resource management e.g. Sasi, Panglima Laot, and Awig-Awig. Natural resource as social security can no longer give maximum protection. Abdullah and Saleh (2001) described remaining issues in relation to resource and social security, namely (1) related to citizenship that means institutional and political recognition towards citizenship manifested in legislation system and government policy, (2) related to rights for possession of natural resources and public facilities which is related to authoritative issues, (3) social security issues related to access and control that guarantee the fulfillment of public rights towards available resources and (4) related to which groups being put in advantageous or disadvantageous position in various issues.

Related to management and utilization of coastal resources, the government has issued some regulations; however, they are not easy to apply. The regulations are Fisheries Act, Coastal Act, Natural Resource Conservation and Ecosystem Act as well as the Protection and Management of environment Acts. The government of Trenggalek has issued the 2004 Regional Regulation number 10 about Coastal resource Management. In 2008, another decree was issued by the Head of Marine and Fisheries Department of Trenggalek Decree or No: 188.45/842/406.060/2008 about *Kelompok Masyarakat Pengawas/PokMasWas*, a group of which responsibility was to provide supervision. One of the Pokmaswas is called Kejung Samudra located in Pancer Cengkong, Karanggandu, Watulimo.

Significance of Mangrove for Human Being. The benefits and functions of mangrove forests are: (1) habitat for endangered species, (2) protection against natural disaster, (3) mud deposition, (4) nutrient replenishment, (5) prevent poison, (6) in-situ and ex-situ natural resources, (7) transportation, (8) germplasm, and (9) recreation and tourism, (10) means of education and research, (11) maintaining natural process and natural system, (12) carbon

absorption, (13) maintaining microclimate, (14) and preventing development of acid sulphate soil.

Even though people are aware of how relevant mangrove is for human being, the area of mangrove in the national and international scale has reduced rapidly. Anwar (2010) in the national-scale within the last three decades the national mangrove forest has decreased from 4.25 million hectares to 3.7 million hectares. There was only 2.1 million hectares of mangrove that is in good condition. Internationally, there are 4.8 million hectares of severely damaged mangrove forest out of the total 5.5 million hectares of mangrove forest. The damage is caused by human or insufficient management. Preventive measure has been taken since the Fifth Five-Year Development and elevated in the Sixth Five-year Management until recently. Reforestation of mangrove forest in the coastal area had been conducted from 2003 to 2007. The reforestation was conducted to 70.185 hectares of the mangrove forest but unfortunately it has yet been successful. Numerous institutions and organizations understand how important mangrove forest is to protect coastal ecosystem. As the consequence, various efforts should be taken to protect mangrove forest.

Ecological History of Mangrove Forest. Based on the Cofish Project (2004), the total area of Pancer Bang mangrove forest is 32.27 hectares. The species of mangrove grown in Pancer Bang mangrove forest are varied in terms of size of seedlings, saplings, trunk and trees. There are 10 species of mangrove namely, *Acanthus illicifolius*, *Lumnitzera racemosa*, *Nypa fruticans*, *Ceriop descandra*, *Soneratia Alba*, *Rhizopora mucronata*, *Aegiceras corniculatum*, *Rhizopora apiculata*, *Heritiera globosa* dan *Heritiera littoralis*.

The three dominant species are *Nypa fruticans*, *Rhizopora mucronatadan* *Soneratia Alba* respectively. The mangrove ecosystem in the coastal area of Karanggandu village consists of the following species, *Aegiceras orniculatum*, *Ceriops tagal*, *Sonneratia sp*, *Rhizophora spp*, and *Bruguiera* (Department of Marine and Fisheries of Trenggalek, 2008). According to the locals, the species grown in the mangrove forest are *kayu jaran*, *menengen*, *nipah*, *truntum*, *druju*, *layutan*, *bogem*, *jangkar* and *tapang*. Based on the report of the Department of Marine and Fisheries of Trenggalek, the total area of mangrove forest in Pancer is 42.557 hectares; 32.5 hectares of the forest is in good condition but 10.057 hectares of the forest is severely damaged. The total area of mangrove forest in Pancer Ngrumpukan is 2,178 hectares; 2 hectares of the forest is in good condition whereas the remaining 0.178 hectares is in poor condition. The total area of mangrove forest in Pancer Bang is 6.022 hectares; 5 hectares of the forest is in a good condition and 1.022 hectares are severely damaged.

Susilo et al (2007) mentioned that mangrove forest reduced drastically; the potential area for mangrove forest is only 10 hectares and the total area of both natural and man-made mangrove forest is only 3.3 hectares. The total area of the natural mangrove forest is 2 hectares dominated by Till-Stilted Mangrove including 5 centimeter-thick *Rhizophora Sp*. Mangroves are found only around the upper edges of the estuary. The total area of man-made mangrove forest (reforestation) is 0.3 hectares.

There are 3.6 hectares of mangrove forest in Pancer Bang more particularly around Gilang River that became coconut plantation, plantation and residential area whereas, 4.8 areas hectares of mangrove forest around Damas River that is now coconut plantation, plantation and residential area. The mangrove forest around Gilang River is turned into coconut crop areas, while that around Damas River is now residential area, plantations and coconut plantation. The area can potentially be used to develop mudcrab and fishing industry. The remaining 2.8 hectares can be used as plantation and residential area (Susilo et al, 2013).

The ecological history of the mangrove forest in Prigi Bay can be described as follow (Purwanti, et al. 2015). There are only three areas of mangrove forest left. The mangrove forest in Pancer Cengkrong is well-maintained by Kejung Samudra, supervision group. It becomes ecotourism and edutourism locations as well as the major tourism destination for the local visitors. The government of Trenggalek gives legitimation to the management process. The opposite situation takes place in Damas Beach. The mangrove forest in Pancer Bang and Ngrumpukan is damaged due to natural phenomenon and conversion of the forest

into coconut plantation and residence. In addition, local institution appointed to manage the area is «dormant». Pancer Bang and Ngrumpukan are relatively accessible to the local community so that they can make use of the areas easily.

The condition of the mahgrove forest in Damas Beach cannot be spearated from the mechanism of *LMDH Argo Lestari*, the organization appointed to manage the area, that tends to put Damas Beach in their management. Local politics and economic authority, where «Mbah Demang» is really influential in determining the future of the mangrove forest Damas Beach. Therefore, negotiation with the local public figure is one of the keys to the sustainability of institution responsible for managing the resources as well as sustainability of the mangrove forest resources. Coastal erosion also threatens the existence of Pancer Bang. *LMDH Argo Lestari* has dredged the sand covering the river twice. The waves erode the shoreline and the sand is back to the river.

Socio-Ecological Analysis in Coastal Resource Management. Socio-Ecological System (SES) is an ecological system that is closely related to/ and influenced by one or more social systems. Relationship between ecosystem and social system was first introduced by Rambo in the 1980s. Ecological system can be defined as an interdependent system from organism or biological unit. «Social» means «the tendency to establish cooperation and interdependence with others of the same kind».

Social-Ecological System is used to refer to a subset of social system in which there are several interdependent relationship between people that is mediated through interactions with biophysical and biological units of non-human (Anderies et al., 2004). A simple example is when the fishing activities alter the outcome of other fishing activities through the interaction of biophysical and non-human biological unit that provides dynamic, lively fish stock. Furthermore, we limit our attention to SES where cooperative aspect of the social system becomes the key, that is, where people deliberately invest resource in some kind of physical and institutional infrastructure to cope with variety of internal and external interference. When the social and ecological systems are related to each other, SES as a whole is a complex system involving several adaptive subsystems, as well as being embedded in a larger double system (Anderies et al., 2004).

RESEARCH METHODOLOGY

The study used qualitative approach where the term population was not used in the type of research; instead the term social situation was used (Sugiyono, 2014). Social situation consisted of three elements, setting, actor and activities. The social situation in the study was as follow: the setting was Damas Beach, the actor was institution that caused increasing or decreasing area of mangrove forest while the activities were land conversion, preventive measures, deforestation and reforestation of the mangrove forest in Pancer Bang.

The data were in the form of the local or stakeholder's responses towards the mangrove forest as well as its social, economic and ecological function. They involved their perceptions, motivations and behavior towards the mangrove forest. Based on ecological perspective, the researchers explained the damage happened to the forest, particularly coastal erosion that threatened the mangrove forests as reforestation had been carried out. The samples are some informants consisting of: (1) the Head of *LMDH Argo Lestari*, (2) the Department of Marine and Fisheries of Trenggalek, (3) PSDKP in Prigi Beach, (4) the prominent figure of *Damas* community, which once managed and made use of the coastal resource such as *Jangkar Bahari* group, (5) *Pe-Nggopla* who use palm leaves for to make roofs for their huts in the forest. Furthermore, descriptive analysis was conducted by describing the social history of certain event so that there is ecological and social reflection oin the destruction of the mangrove forests.

FINDINGS AND DISCUSSION

Potential Institution and Individual that Influence the Dynamics of the Mangrove Forest Area. Susilo et al (2007) reported that coastal resource sustainability relied on which

institution responsible for managing the resources, especially in an area where the indigenous regulation was no longer used. The mangrove forest in Damas Beach was located in two areas, Pancer Bang and Pancer Cengkrong. The mangrove forest area was affected by institution and individual involved in the management. Some institutions and individuals that affected the dynamics of the mangrove forest area was as follow (Table 1):

Table 1 – Relationship between Institutions

n/n	Mangrove	<i>Kejung Samudera</i> Supervision Group	<i>Jangkar Bahari</i> Supervision Group	LMDH	Pemdes	FPIK	Indonesian State Forestry Enterprise	DKP
Mangrove		++	++	--	++	++	-+	++
<i>Kejung Samudera</i> Supervision Group			++	-+	++	++	--	++
<i>Jangkar Bahari</i> Supervision Group				-+	++	++	--	++
LMDH					++	++	++	--
Local Government						++	++	++
FPIK							++	++
Indonesian State Forestry Enterprise								--
DKP								

Notes: (++): positive, (--): negative, and (-+): neutral.

Based on the Head of the Department of Marine and Fisheries Decree of Trenggalek No.: 188.45/842/406.060/2008, the responsibilities of the *Kejung Samudra* were: (1) reporting any violation related to marine and fisheries, and (2) being in-site supervisors and controlling the coastal resources management and utilization. Even though *Kejung Samudra* headquarter was in Pancer Cengkrong, their responsibility involved Damas Beach.

Despite of the lack of facility and legality issue, *Jangkar Bahari*, supervision group kept managing the mangrove forest resources in Damas Beach. The group talked to the researchers through the phone reporting the damage to the mangrove forest by the locals in 2011 and the conversion of the mangrove forest into fishpond.

LMDH Argo Lestari was responsible for 4.800 hectares of the forest including that in Damas Beach. *LMDH* built some dams to as an effort to prevent coastal abrasion. The effort failed twice. On the other side, *LMDH* turned the mangrove forest into coconut plantation in 2003 before the organization was established officially.

Team of researchers from the Faculty of Marine and Fisheries had established a draft related to Mangrove and Coral Reef Management in 2007; however, the draft had yet been discussed among the local staffs. The draft had yet been discussed when the new head of village was elected in 2013 either. However, in 2015 together with the implementation of mangrove forest reforestation, the Head of Karanggandu village was committed to support all programs of which purpose Damas Beach mangrove forest conservation.

Indonesian State Forestry Enterprise and dengan *Kantor Resort Pemangku Hutan* in Karanggandu did not have any program related to Damas Beach mangrove forest conservation. They work together with *LMDH Argo Lestari* to run the operational activities and management of the forest.

The Department of Marine and Fisheries of Trenggalek paid full attention to the mangrove forest in Damas Beach starting from the Cofish project that lasted between 1998/1999 and 2005. Conservation program and establishment of supervision groups in Damas Beach were the efforts of the institution. Unfortunately, the institution has decided to pay more attention to the Pancer Cengkrong mangrove forest since 2008. The researchers

from the Faculty of Marine and Fisheries conducted some studies and community service. The study was related to zoning, and strengthening the institutions responsible for coastal resource management. Studies related to the institutional management of coastal resources and food security were conducted in 2007 (Susilo, et al, 2007). A study related to institutional and household economic issues was conducted in 2013 (Susilo, et al, 2013) and in 2015, community service of which purpose was raising awareness about the significance of the mangrove forest for human being and planting 500 mangrove trees were conducted (Purwanti, et al, 2015).

The farmers contributed to the damage of the mangrove forest because they turned the forest into plantation or ricefield. Nobody stopped these activities and as the effect, the mangrove forest area kept decreasing. The *penggopla* cut down the palm trees for making the roof for their huts in the forest included in *gopla* area.

Socio-Ecological System of the Mangrove Forest in Damas Beach. Mangrove forest had both direct and indirect advantage for the society. Damas mangrove forest had 10 species of mangrove and among the ten species, there were three dominant species. The management of the mangrove forest officially begun when the forest became the setting for the Cofish Project (1998/1999 to 2005). Susilo et al (2007) described that the ecology in 1975 was immaculate, but some damage happened between 1975 and 1990. Furthermore, Susilo et al (2013) revealed that the locals damaged the forest starting from 1999 to 2001. The wood from the mangrove forest was used for building houses and fuel (charcoal). *Bogem*, one type of mangrove species, was cut and used as bottle cap. 0.5 hectares of Pancer Bang mangrove forest, the half of the total forest area, was turned into rice-field in 2005. Another half was turned into coconut plantation. Some reports related to the violation had been delivered to the Department of Marine and Fisheries. These activities were categorized as «error» in the ecological behavior of the locals. Their economic behavior sacrificed the function and ecological significance of the mangrove forest which eventually costed the local society.

Table 2 – Analysis of the Socio-Ecological System in the Destruction of the Mangrove Forest

Variable	Input	Process	Output
Ecosystem	Mangrove: 1. <i>Acanthus illicifolius</i> , 2. <i>Lumnitzera racemosa</i> , 3. <i>Ceriop descandra</i> , 4. <i>Nypa fruticans</i> , 5. <i>Soneratia Alba</i> , 6. <i>Aegiceras corniculatum</i> , 7. <i>Rhizophora mucronata</i> , 8. <i>Rhizophora apiculata</i> , 9. <i>Heritiera littoralis</i> . 10. <i>Heritiera globosa</i> dan	In 1975, the ecology was in a good condition and between 1975 and 1990 there was some damage to the mangrove forest (Susilo et al, 2006).	Species: Dominant: 1. <i>Nypa fruticans</i> , 2. <i>Rhizophora mucronatadan</i> 3. <i>Soneratia Alba</i>
	Coconut Tree	Planting coconut tree through the land conversion	Coconut was the dominant species in Damas Beach
Ecological System of the Mangrove Forest			
Reforestation of the Mangrove Forest	Cofish Project	One of them was to protect the mangrove forest in Damas Beach (Pancer Bang and Ngrumpukan)	Establish the Supervision Group (Mangrove Forest Supervision Group)
	Planting Mangrove Seedling	Cofish project	
		JNT	1,000 mangrove seedlings were damaged due to the land conversion
		FPIK UB (2015)	The area of mangrove forest in Pancer Bang increased
Advantage	Long-Lasting	Direct and Indirect Benefit and Function of the Mangrove Forest	1. Crab, shrimp, clam and other organisms 2. Prevent abrasion 3. Prevent sea water intrusion

Variable	Input	Process	Output
Solution	<i>Draft Kesepakatan Lokal (DKL)</i> , local agreement draft	Discussion and approval of <i>DKL</i> have yet been implemented	Violation
	Facility	The government and the society in general supported on the ecological sustainability using social approach	Social, Economic and Ecological Sustainability
Loss	Damage	Economic issue and the lacking knowledge of the society resulted in irresponsible utilization of the mangrove forest	1. Abrasion 2. Sea water intrusion
Destruction of the Mangrove Forest	« <i>Gopla</i> » System	Conversion of the mangrove forest: 1. Pancer Bang mangrove forest is now 3.6 hectares. It was previously 12 hectares 2. The violation had been reported to the Department of Marines and Fisheries	Planting coconut tree
		The society raided the forest between 1999 and 2001	Mangrove Timber for: 1. Building house 2. Fuel (charcoal). 3. Bottle cap (<i>bogem</i>)
		In 2005, 0.5 hecatres, a half of Pancer Bang	KRD <i>planted</i> rice and corn in the ricefield
		Social System of the Mangrove Forest	
Institution	<i>LMDH</i>	Established on July 18, 2005 as the official forum for <i>Hutan Pangkuan Desa Karanggandu</i> community in order to optimize the ecological and economic functions of forests.	Plants included in the agreement which is prohibited by Indonesian State Forestry Enterprise to cut are felled coconut, <i>ketapang</i> , mahogany, durian, heron, cloves, <i>jengkol</i> , teak, pine.
Institution	Department of Forestry	Cooperation between the Indonesian State Forestry Enterprise and <i>LMDH</i>	Legalized the land conversion of the mangrove forests
	Department of Marine and Fisheries	Indonesian State Forestry Enterprise had the rights to manage the mangrove forest so that <i>DKP</i> could not have any contribution in the management of the forest	Carrying out its responsibility
	Department of Tourism, Sport and Youth	Tourist activities in Damas Beach	Number of visitors
Society	<i>Gopla</i>	Public activities that generate income	Planting productive plants in the public forest
	<i>LMD</i>	The local politician affiliated with Golkar, PPP, or PDI depend on the local political atmosphere	Currently affiliatd with the local public figure and he also help collecting the data
	Mangrove forest utilization	The mangrove forest produced economic commodity so that the society could make use of the commodity	Economic commodity from the mangrove forest such as crabs, clams and shrimp
	Management	Management has yet been sufficient	Non-optimum management

The locals thought that they could not generate money from the mangrove forest because the forest did not produce economic commodities such as raw materials for making broomsticks, young coconut leaves or coconut. Indonesian State Forestry Enterprise established *Lembaga Masyarakat Desa Hutan (LMDH)* in 2005 that prohibited people from cutting down certain plants such as coconut, *ketapang*, mahogany, durian, pucung, clove, *jengkol*, teak and pine. It increased the number of coconut trees. Head of *LMDH*/ former

head of the village (LMD) owned the largest coconut plantation and as the effect, more people grew coconut trees and destroyed the mangrove.

The conservation project began with Cofish project where supervision group responsible for managing the mangrove forest in Damas Beach was established. 1,000 mangrove seedlings were destroyed due to human activities. A lot of researchers attempted to conduct conservation project in the area. In 2013, the negotiation to achieve ecological sustainability proposed a draft about the mangrove resort management. Susilo, et.al (2007) initiated the draft but unfortunately the local government of Karanggandu village had yet given any positive response. In 2015, a team from the Faculty of Marine and Fisheries of Brawijaya University conducted training to raise the locals awareness towards instrumental role of the mangrove forest for their lives. Besides that, the team planted 500 mangrove seedlings.

Table 2 described the analysis of the socio-ecological system in the destruction of the mangrove forest.

It was concluded that the simultaneous interaction between the social and ecological aspects influenced the total area of the mangrove forest in Damas Beach, both in Pancer Bang and Ngrumpukan. Nevertheless, it was expected that awareness and personal approach to the public figures may revitalize the mangrove forest. *LMDH* was responsible for 4.800 hectares of the forest, and therefore, there was high possibility to revitalize the mangrove forest as it used to (10 hectares) or at least, the land conversion in the area did not worsen since the total area of the mangrove forest was recently only 5 hectares.

CONCLUSION

The conclusions are (1) certain institution and individual that are able to influence the dynamics of mangrove forest area can be divided into three categories. The first was the institution that maintain and carry out mangrove forest conservation program such as *Kejung Samudra*, *Jangkar Bahari*, the Department of Marine and Fisheries, and the Faculty of Marine and Fisheries, Brawijaya University. Second, neutral institution that preserve and restore habitats in the for example, the local government of Karanggandu village and the Indonesian State Forestry Enterprise. Third, institution and individual that most likely become threats to Damas mangrove forest preservation, namely *LMDH Argo Lestari*, the coconut farmers and *penggopla*. (2) The interaction between social and ecological aspects simultaneously affects the dynamics of the mangrove forest in Damas Beach. However, it is expected that awareness and personal approach to the public figures facilitates the restoration of the mangrove forest. *LMDH* is responsible for 4.800 hectares of the forest, so there is high possibility to restore the forest to what it was then (10 hectares) or at least more damage does not happen to the remaining 5 hectares of the mangrove forest.

Based on the conclusion, some efforts should be taken for the conservation of the mangrove forest area, namely (1) build dams to reduce coastal erosion caused by the waves, (2) negotiate with the local public figures hoping that they are willing to support the conservation of the mangrove forest, (3) developing awareness about the importance of the coastal ecology through local content subject as early as possible to the students of the elementary schools located in Karanggandu village, (4) encourage *Kejung Samudra* and the Faculty of Marine Science and Fisheries, Brawijaya University to periodically conduct mangrove reforestation, both in Pancer Bang and Pancer Ngrumpukan. (5) encourage the local government of Karanggand village to discussi the draft for Damas mangrove and coral reef management.

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DOI <https://doi.org/10.18551/rjoas.2017-01.28>

**УПРАВЛЕНИЕ ТЕХНОЛОГИЧЕСКИМИ ПРОЦЕССАМИ В ЗЕРНОВОМ
ПОДКОМПЛЕКСЕ**
MANAGEMENT OF TECHNOLOGICAL PROCESSES IN THE GRAIN SUBCOMPLEX

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АННОТАЦИЯ

Управление технологическими процессами и стабильное функционирование зернового подкомплекса зависят от установления природных критериев производства и внедрения концепции заданных параметров урожая зерновых культур. Экономически целесообразным уровнем установлена урожайность 50 ц/га, при которой последовательно снижалась и стабилизировалась себестоимость производства, что предопределило наибольшую рентабельность. Для мотивации производства продовольственного зерна предложены базовые цены, диверсифицированные по категориям качества на единицу произведенного белка и меры государственной поддержки для стимулирования предпринимательской активности производителей зерна.

ABSTRACT

Management of technological processes and stable functioning of a grain subcomplex depend on establishment of natural criteria of production and introduction of the concept of the set harvest parameters of grain crops. Economically expedient level has established productivity of 50 c/hectare at which cost of production of grain decreased consistently and stabilized that has predetermined the greatest profitability. For motivation of production the base prices, diversified on categories of quality on unit of the produced protein, and a measure of the state support for stimulation of enterprise activity of producers of grain are offered.

КЛЮЧЕВЫЕ СЛОВА

Природные критерии производства, диверсификация, базовые цены, зерно.

KEY WORDS

Natural criteria of production, diversification, basic prices, grain.

Методические подходы и технологические механизмы стабильного функционирования зернового подкомплекса базируются на установлении природных критериев производства, обусловленных почвенными и агроклиматическими факторами, за пределами которых оно экономически нецелесообразно и экологически вредно. Для реализации агроклиматической продуктивности сформулирована концепция заданных параметров урожая (ЗПУ) зерновых культур, разработаны алгоритмы, методические инструменты и технологические способы ее внедрения. Агроклиматические критерии производства служат целевым индикатором для точного прогнозирования валовых объемов зерна, а сезонный показатель заданных параметров урожая используется для планирования эффективного производства качественного зерна.

Освоение ЗПУ сдерживает совокупный комплекс лимитирующих, антагонистических и экстремальных факторов производства, который выявляется на основе диагностики почвы, семян и посевов зерновых культур. Его устранение требует разработки интегрированных точных агорецептов (ИТАР), состоящих из химико-техногенных средств с разным функциональным значением с указанием норм, сроков и

способов их применения [1].

При дифференциации сезонного ЗПУ по производственным полям, наукоемкие точные агорецепты служат инструментом для диверсификации технологических процессов по обеспечению потребности и сохранению ЗПУ зерновых культур от вредных организмов, и их адаптации к экстремальным погодным условиям.

Управление производственными процессами осуществлялось разработкой ИТАР, которые выполняли компенсирующую, фитосанитарную и фитоадаптивную функции. Они системно встраивались в модель заданного производственного процесса, служили научно-методической основой конструирования высоких технологий зерновых культур и формировали современный технологический уклад зернового подкомплекса.

ИТАР конкретизируют последовательный набор специальных приемов с возможностью их совмещения при совпадении сроков и определяют принципы комплектации полевых агрегатов сложными агромашинами с комбинированными рабочими органами и соответствующим тягловым орудием.

Знание особенностей управления производственным процессом зерновых культур, технологических способов оптимизации потребности и сохранения ЗПУ, и адаптации к экстремальным погодным условиям вегетационного периода позволяет быстро увеличить объемы производства зерна с улучшенными потребительскими свойствами.

Такой подход является научной базой для конструирования и оценки индустриально-технологической системы производства качественного зерна, освоенной в пяти отделениях ТНВ «ООО Вектор и компания» Zubovo-Полянского района Республики Мордовии. Аспирантская работа выполнялась на стыке смежных дисциплин в составе научной группы ученых-аграрников, экономистов и специалистов.

Производственные результаты с участием автора получены в контрастных почвенно-климатических условиях 2011-2015 гг. базового хозяйства, где преобладали серые лесные почвы с низким плодородием, запущенные и заросшие злостными сорняками. До начала производственных экспериментов применяли традиционные агротехнические методы, собирали по 8,0-10,0 ц/га пшеницы с низким качеством зерна.

В годы исследования, агроклиматический критерий производства по отделениям базового хозяйства характеризовался в пределах от 50 до 70 ц/га зерновых единиц, а сезонный уровень ЗПУ базового хозяйства варьировался от 40 до 55 ц/га з.е., что позволило планировать диверсификацию производства зерна озимой и яровой пшеницы на суммарной площади 5886 га (табл. 1,2, рис. 1).

Экономическая оценка производства зерна. Оценку урожайных свойств и качества зерна пшеницы осуществляли в равных условиях экстенсивного и интенсивного производства (табл. 1).

Таблица 1 – Оценка диверсификации производства зерна

Год	S, га	Производство							
		ЭУ – экстенсивное				ЗПУ – интенсивное			
		Урожай- ность, ц/га	качество зерна, кл.			Урожай- ность, ц/га	качество зерна, кл.		
			Белок, %	клейковина			Белок, %	клейковина	
				%	ИДК, ед.			%	ИДК, ед.
2011	500	10,4	9,4	17,0, 5 кл.	110, 3 гр.	47,6	14,6	30,0, 2 кл.	72, 1 гр.
2012	2116	11,5	10,2	18,5, 4 кл.	105,3 гр.	46,7	14,4	29,4, 2 кл.	72, 1 гр.
2013	2200	12,7	10,2	18,4, 4 кл.	105,3 гр.	49,4	13,8	27,3, 3 кл.	98, 2 гр.
2014	1070	11,4	10,3	18,6, 4 кл.	105,3 гр.	45,7	14,0	28,0, 3 кл.	90, 2 гр.
Итого	5886	11,8	10,0	18,1, 4 кл.	106,3 гр.	47,6	14,2	28,7, 2 кл.	83, 2 гр.

На уровне экстенсивного производства получена средняя урожайность 11,8 ц/га, тогда как по высоким технологиям достигнута в среднем 47,6 ц/га, с колебаниями по годам от 45,7 до 49,4 ц/га (мах.– 52 ц/га). Прибавка урожая от наукоемких агорецептов составила 35,8 ц/га.

Качество зерна формируется в процессе его производства. Вследствие этого, перед уборкой была осуществлена оценка основных параметров качества зерна.

Оказалось, что на экстенсивном фоне произведено зерно непродовольственной категории (белок – 9,4-10,3%, клейковина – 17,0-18,6%), пригодное только на фуражные и технические цели. Тогда как при интенсивном производстве произошло улучшение потребительных свойств зерна (повышение содержания белка в зерне до 13,8-14,6%, клейковины до 27,3-30,0%) до ценной и сильной продовольственной кондиции.

Эффективность интенсивного производства зерна. Освоение высоких технологий ЗПУ в ситуации сложной пестроты почвенного покрова, экстремальных погодных условий базового хозяйства позволило собрать 28007 тонн продовольственного зерна, что в 4 раза превышает экстенсивный урожай (6970 т) с низким качеством (табл. 2).

Экономические показатели констатируют, что интенсивное производство (ЗПУ) увеличило полные издержки в среднем на 276% по сравнению с экстенсивным (ЭУ). Однако превышение темпов роста качественного урожая зерна (4,0 раза) над производственными затратами (2,8 раз) способствовало снижению себестоимости тонны зерна в среднем от 4625 р. (ЭУ) до 3178 р. (ЗПУ), т.е. на 31,3%.

Наряду с улучшением качества зерна наблюдалось изменение его рыночной цены от 5590 до 9150 р./т, при средней реализационной – 7813 р./т. Повышение рыночной цены не соответствовало темпу роста качества зерна. Поэтому разница в цене продовольственного зерна ценной кондиции составляла всего лишь 1028 р./т к цене зерна-аналога фуражной категории. Это свидетельствует о несбалансированности цен по категориям качества зерна, что снижает мотивацию зернопроизводителей на освоение высоких технологий, требующих кратного увеличения производственных затрат.

Таблица 2 – Эффективность диверсификации производства зерна

Год	Валовой сбор зерна, т		Себестоимость зерна, руб./т		Выручка от реализации зерна, руб.		Прибыль, руб.		Рентабельность, %	
	ЭУ	ЗПУ	ЭУ	ЗПУ	ЭУ	ЗПУ	ЭУ	ЗПУ	ЭУ	ЗПУ
2011	520	2380	5231	3055	2662400	13304200	-57720	6033300	-2,12	83,0
2012	2434	9877	4552	3055	17855620	83836970	6775746	53662516	61,2	177,8
2013	2796	10860	4299	3078	17427600	76941600	5408736	43510740	45,0	130,2
2014	1220	4890	5260	3707	9345200	44743500	2928000	26616270	45,6	146,8
Итого	6970	28007	4625	3178	47290820	218826270	15054762	129822826	46,7	145,9

Тем не менее, с равной площади по высоким технологиям произведено качественного зерна на сумму 218,8 млн р., а зерна фуражной категории по экстенсивной технологии – 47,3 млн р., превышение выручки в 4,6 раза. Это обусловлено прогрессивным ростом урожайности (в 4 раза) и существенным улучшением качества зерна при незначительной разнице в их стоимости (на 1028 р./т).

Прибыль от диверсификации экстенсивного и интенсивного производства в базовом хозяйстве увеличилась в среднем от 2558 р./га (ЭУ) до 22056 р./га (ЗПУ), а максимальная составляла 28188 рублей на гектар. Средняя рентабельность реализации сезонного ЗПУ сложилась на уровне 146%. Диверсификационный эффект интенсивной экономики зернового подкомплекса возрастает в 8,6 раза в сравнении с экстенсивной.

Производственные затраты и себестоимость зерна при моделировании возрастающих ЗПУ. Экономические исследования по оценке результатов освоения сезонного ЗПУ с диверсификацией наукоемких агрорецептов проводили в полевых экспериментах 2012-2015 гг. Нами определено, что экономически целесообразный ЗПУ начинается с уровня 35-40 ц/га з.е. В связи с этим, моделировали четыре уровня продуктивности: экстенсивный – ЭУ – 14 ц/га з.е.; ЗПУ_{min.} – 40 ц/га з.е., ЗПУ_{opt.} – 50 ц/га з.е. и ЗПУ_{pot.} – 60 ц/га з.е. в равных условиях конкретного поля (рис.1).

Исходной точкой исследования являлась продуктивность плодородия почвы (ЭУ – 14 ц/га з.е.) стационарного поля, которая достигалась экстенсивной (традиционной) технологией. Производственные затраты ЭУ (6206 р/га) складывались только из

агротехнических мероприятий. Урожай был сформирован исключительно за счет исходных биогенных ресурсов почвенного фактора, поэтому отсутствовали издержки на технологические средства.

Результаты, представленные на рисунке 1 показывают, что при реализации возрастающих ЗПУ интенсивно растут производственные затраты от 6206 до 17024 р./га. При этом динамика урожайности от 13,7 до 60,8 ц/га свидетельствует о том, что темпы ее роста (3,0-4,4 раз) превышают темпы роста издержек (1,8-2,7 раз) на производство зерна.

Вследствие этого, при урожайности 41,3 ц/га наблюдалось последовательное и резкое снижение себестоимости до 2764 р./т с дальнейшей ее стабилизацией на уровне 2714 р./т при 49,4 ц/га. А с достижением потенциального урожая (60,8 ц/га) происходило ее незначительное повышение до 2800 р./т по причине естественной убыли природных ресурсов.

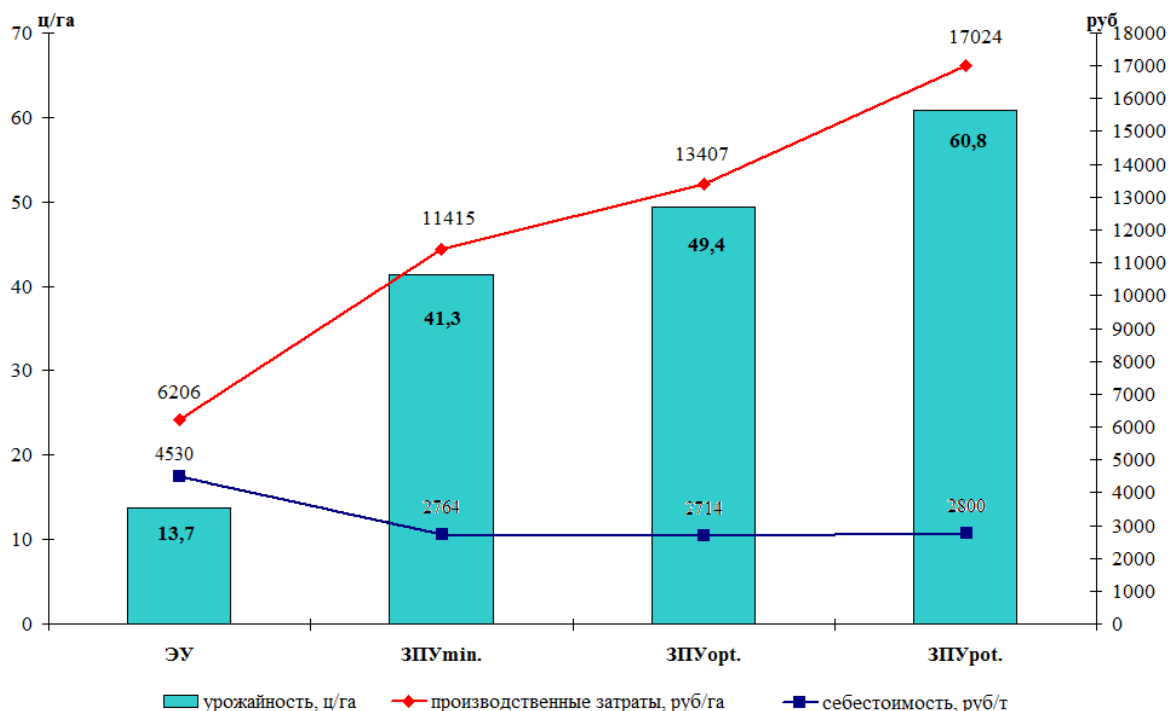


Рисунок 1 – Динамика урожайности, производственных затрат и себестоимости ЗПУ, 2012-2015 гг.

Экономическими экспериментами доказали, что при моделировании ЗПУ 40-50 ц/га з.е. обеспечивался интенсивный рост урожайности в 3,0-3,6 раза. При этом темпы роста производственных затрат на порядок ниже – 1,8-2,2 раз, что способствовало снижению себестоимости зерна до отметки 2714 р./т. Производственные затраты оптимизировались на уровне 13407 р./га и предопределили наибольшую рентабельность, а максимальная прибыль (28188 р./га) получилась при реализации ЗПУ_{pot} - 60,8 ц/га.

Это обусловлено существенным преобладанием потребления избыточных природных ресурсов над техногенными средствами в заданном производственном процессе с последующим выравниванием их соотношения на уровне 50 ц/га, что стабилизировало себестоимость производства зерна.

В результате установлены механизмы формирования себестоимости в естественных условиях производства зерна. До определенного уровня ЗПУ природные ресурсы преобладают над технологическими, и тогда происходит интенсивное снижение и стабилизация себестоимости (2714 р./т.). В дальнейшем наблюдается естественная убыль совокупности природных ресурсов с одновременным возрастанием объема

технологических средств и, соответственно, повышение себестоимости зерна. Понимание механизма формирования себестоимости производства качественного зерна позволяет его управлять с целью получения максимальной прибыли.

Количественная оценка конкурентоспособности произведенного зерна по комплексным критериям. Экономическими исследованиями установлено, что интенсивные технологии способствуют производству зерна с высоким потребительным качеством, повышению цены реализации и снижению себестоимости, что отражается на количественных показателях конкурентоспособности зерна (см. табл. 1,2,3).

Оценка конкурентоспособности произведенного зерна проводилась по результатам собственных полевых экспериментов по формулам Г.Л. Багиева, Т.Н. Парамоновой, И.В. Сергеева и др. [2,3,4]. Количественный показатель конкурентоспособности зерна рассчитывали по комплексным критериям: потребительному качеству, цене продажи (потребления) и себестоимости в сравнении с зерном – аналогом (конкурентом) экстенсивного производства [3].

В производственных условиях диверсификация технологии повышала потребительную ценность зерна по содержанию клейковины от фуражной (18,1%) до продовольственной категории ценной и сильной кондиций (27,3-30,0%) (см. табл.1).

Анализ произведенного зерна показывает, что отношение уровня потребительного качества к цене потребления в годы исследования вариабельный, что обусловлено улучшением качества зерна в среднем на 10-12 единиц с незначительным повышением рыночной стоимости. Это характеризует опережающий рост потребительного качества к цене потребления, создавая условия для усиления конкурентоспособности зерна.

В результате количественный показатель конкурентоспособности изменялся по уровню потребительного качества до 1,48-1,76, а по критерию цены продажи (потребления) до 1,26-1,62 (табл. 3). Чем существеннее разница между потребительной ценностью зерна и ценой продажи (потребления), тем выше показатель конкурентоспособности зерна.

Таблица 3 – Конкурентоспособность зерна интенсивного производства и интегрированный потребительный эффект

Год	Показатель конкурентоспособности по критерию			Интегрированный потребительный эффект	
	Потребительного качества	цены потребления	Себестоимости производства	показатель	темпы прироста к зерну-аналогу), %
2011	1,76	1,62	3,02	6,40	113,3
2012	1,59	1,38	2,38	5,35	78,3
2013	1,48	1,31	2,07	4,86	62,0
2014	1,51	1,26	2,13	4,90	63,3
Среднее	1,59	1,39	2,40	5,38	79,3

Наибольшее значение конкурентоспособности наблюдается по критерию себестоимости зерна – 2,07-3,02 в сравнении с зерном-аналогом. Это связано с интенсивным ростом качества и снижением себестоимости зернопродукции на 30-40% в отличие от экстенсивного производства. Вследствие этого, чем больше количественный показатель по комплексным критериям оценки, тем выше конкурентоспособность произведенного зерна.

Анализ средних показателей конкурентоспособности по критериям комплексной оценки показывает, что при высоком уровне конкурентоспособности по потребительному качеству (1,59) и заниженной закупочной стоимости (1,39) выигрывает покупатель, получив дешевое зерно с лучшими потребительными свойствами. А сельхозпроизводитель, несмотря на наивысший параметр конкурентоспособности по себестоимости (2,40) и низкий по цене потребления (1,39), проигрывает, недополучая прибыль для развития зернопроизводства.

Количественные параметры конкурентоспособности произведенного зерна по комплексным критериям оценки формируют интегрированный показатель, который

определяется как их суммарное значение – 4,86-6,40. За годы внедрения средний интегрированный показатель произведенного зерна составил 5,38, характеризуя его высокое конкурентное преимущество.

Интегрированный показатель конкурентоспособности зерна по смыслу выражает потребительный эффект, приходящийся на единицу затрат производителя и потребителя на приобретение и использование [5].

Темп прироста интегрированного потребительного эффекта зернопродукции интенсивного производства по отношению к зерну-аналогу по годам колебался от 62 до 113%. Совокупный потребительный эффект отражает значительное превышение, в среднем на 79,3% конкурентных преимуществ зернопродукции интенсивного производства по отношению к зерну-аналогу экстенсивного производства (см. табл. 3).

Высокие технологии повышают количественные показатели конкурентоспособности произведенного зерна по комплексным критериям и характеризуют стабильное увеличение интегрированного потребительного эффекта, отражающего его совокупные конкурентные преимущества перед зерном-аналогом на зерновом рынке.

Ценовые и государственные механизмы мотивации производства продовольственного зерна. Проблемы качества зерна и ценовой политики чаще возникают на зерновом рынке главной продовольственной культуры – пшеницы, основное назначение которой удовлетворение физиологической потребности человека [6,7,8].

Критерии стоимостной оценки зерна должны отражать вклад интенсивных технологий в улучшение его потребительных свойств, характеризующих особую ценность, что требует больших дополнительных затрат. Вследствие этого, базовое ценообразование стимулирует повышение качества продовольственного зерна.

Потребительную ценность зерна определяет содержание в нем белка, который выступает инструментом, управляющим ценовым механизмом. Поэтому назрела необходимость установления связи ценообразования со степенью возмещения затрат на формирование содержания белка в зерне на основе высоких технологий.

С учетом этого, автором предложена усовершенствованная методика базового ценообразования продовольственного зерна, где основным критерием качества определен количественный показатель белка, диагностируемый прибором, который является более точным, чем клейковина [9].

Таблица 4 – Базовые цены, диверсифицированные по категориям качества продовольственного зерна

Уровень потребительного качества зерна			Категория качества и назначение зерна пшеницы	Диверсификация цены по категориям качества, руб.	
Белок, %	Клейковина (%) и ее характеристика	Классность зерна, кл.		1% белка	Тонны зерна
8,0-11,0	16-22% (III гр.), неудовлетворительная крепкая; неотмываемая	V, IV	Техническая, фуражная	550	4400-6050
11,5-15,0	23-30% (II, I гр.), удовлетворительная крепкая; хорошая	III, II	Продовольственная, ценная	650	7475-9750
15,5-17,5	31-35% (I гр.), хорошая	II, I	Сильная, улучшитель	680	10540-11900
18,0 и выше	36-40% (I гр.), хорошая	I, высший	Высшая, глубокая переработка	700	12600 и более

В табл. 4 представлены базовые цены, диверсифицированные по категориям качества товарного зерна от 550 до 700 рублей за один процент произведенного белка. Вследствие этого, закупочная стоимость тонны зерна по категориям качества прогрессивно увеличивается от 4400 до 12600 р. и выше, что согласуется с мировыми ценами [10]. Диверсифицированные цены по категориям качества зерна в разной степени возмещают затраты на улучшение потребительных свойств и создают прибыль. Такая ситуация ориентирует зерновой рынок на формирование

потребительского спроса на качественное зерно.

Повышение качества продовольственного зерна важно усилить господдержкой в форме дотаций на зерно высоких кондиций. Дотации в размере 15% необходимо выделять на технологическое улучшение качества зерна только для второй продовольственной категории с содержанием белка от 11,5 до 15,0% (см. табл. 4).

Данная категория качества зерна возможна только в результате трансформации экстенсивного в интенсивное производство. Это трудный этап для зернопроизводителей, т.к. требует высокой компетенции сельхозпроизводителей и повышения производственных затрат в 2,5-2,8 раза на интенсивные технологии производства продовольственного зерна.

Для стимулирования зернопроизводителей на массовое производство продовольственного зерна автором предложена формула (1) расчета государственной дотации на ценное товарное зерно со ставкой 15%, полученное интенсивным способом.

Расчет проводится на разницу между рыночной закупочной ценой продовольственного зерна и базовой стоимостью зерна в соответствии с фактическим качеством (по методике), произведенного экстенсивной технологией (см. табл. 4).

$$Д = \frac{(Ц_p - Ц_{Бэ}) \times 15}{100} \quad (1),$$

где: Д – размер госдотации на тонну зерна, руб.; Ц_р – рыночная цена 1 тонны товарного зерна с белком от 11,5 до 15,0%, руб.; Ц_{Бэ} – базовая цена 1 тонны зерна экстенсивного производства, руб.

Предлагаем оказывать господдержку при условии, когда рыночная цена тонны зерна продовольственной категории ниже базовой стоимости соответствующего качества. Базовые цены по категориям качества зерна внесут существенный вклад в определение государственной ценовой политики и развитие рыночной среды для формирования предложения и спроса на качественное зерно. А также послужат инструментом для запуска рыночного механизма стоимостной оценки зерна сильных кондиций и стабилизации сезонных колебаний цен.

Государственное участие в форме дотаций будет играть стимулирующую роль для сельхозпроизводителей на поиск эффективных технологий, способствуя повышению предпринимательской активности на интенсивное производство качественного зерна.

Таким образом, для управления технологическими процессами и стабильности развития зернового подкомплекса определено экономическое значение природных критериев производства, разработана концепция заданных параметров урожая зерновых культур и практические способы ее реализации, обеспечивающие эффективное производство конкурентоспособного зерна. Для мотивации производства продовольственного зерна предложены базовые цены, диверсифицированные по категориям качества на единицу произведенного белка и меры государственной поддержки.

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DOI <https://doi.org/10.18551/rjoas.2017-01.29>

JAMBI LOCAL RICE VARIETY (ORYZA SATIVA L.) ADAPTATION SCREENING AGAINST DROUGHT STRESS DURING SEEDING PROCESS

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ABSTRACT

Screening Jambi local rice (*Oryza sativa* L.) adaptive to drought stress at seeding stage, aimed to obtain Jambi local rice variety which are adaptive to extreme drought conditions to be able to cope with uncertain rainfall rate as a result of climate change, a source of enrichment for the germplasm assembly and improving new varieties that can cope with global climate change in increasing rice produce. The research was conducted in 2013 at the *Balai Besar Penelitian Padi, Kebun Percobaan Padi Muara Bogor* (Rice Research Institute, Rice Experimental Farm Muara Bogor). Materials examined were Jambi local rice varieties based on exploration results in 2004, 2009 and 2013 conducted in Jambi province. Drought screening was performed on seedling at 14 and 21 days after sowing (DAS) with soil moisture level under 20% to 105 Jambi local rice varieties and 2 control varieties. The control varieties are Salumpikit (drought tolerant) and IR20 (drought sensitive) obtained from *Balai Besar Penelitian Padi Kebun Percobaan Bogor*. This research is selection process conducted on Jambi local rice varieties against drought stress performed during seeding phase. Observations were conducted on survival rate percentage (survival). The results exhibits 26 out of 105 local rice varieties were evaluated as drought resistant at soil moisture level $\pm 17\%$, 14 varieties are drought resistant 14 and 21 DAS, 10 varieties resistant to drought at 14 DAS and 2 drought resistant varieties at 21 DAS.

KEY WORDS

Jambi local rice (landraces), adapt, drought stress, seeding stage.

Uncertainty in rainfall distribution both at present and in the years to come would worsen as a result of global climate change. This would mean dry conditions occurring in the middle of rainy season capable of damaging plant growth, followed by flood at the end of rainy season which would affect rice yields (Kawasaki, 2010). Uncertainties associated particularly concerning rainfall patterns due to climate change. It is expected to be difficult in anticipating drought effect (Anonymous, 2011). To overcome irregularities in rainfall patterns, rice varieties capable of adapting to global climate change and resistant to drought is required. It would encourage a positive impact on rice yields (Kawasaki, 2010).

Jambi Province possesses rice planting area 75.100 ha (BPS, 1996) with a number of local rice varieties. Local rice has been grown for generations and has adapted well to its environment. Local rice cultivars are valuable asset should they are managed appropriately (Siwi, and Kartowinoto, 1989). Diversity of local rice cultivars in Jambi is quite high, but there is no known variety possessing drought resistant characteristic. Information regarding the diversity of Jambi local rice drought resistance in growth phases, genetic and germplasm collections is not yet available. Therefore it is necessary to identify and evaluate rice variety and its germplasm to obtain variety possessing adaptive and drought resistant traits.

Managing rice plant genetic resources included efforts to preserve, secure, and utilizing genetic diversity as optimal as possible to render them useful. It is done both for present and future generation. Cultivated plants species possess valuable genetic resources for crop improvement program (Oldfield, 1989).

Operational measures in managing genetic resources are: 1) exploration, inventory, and identification of genetic resources, 2) collecting in *ex situ* and *in situ* manner, 3) passportization and documentation, 4) evaluation, characterization, and cataloging, 5) usage, selection, hybridization, and varieties assembly, 6) conservation and rejuvenating, and 7) material exchange, protection, and commercialization.

Rice plants cultivation in Jambi province is mostly conducted in a specific cultivation environment (agro-ecology specific) known as tidal rice cultivation, swamp rice cultivation, *gogo* rice cultivation and rain-fed rice cultivation. Most of these are marginal lands. Varieties grown in general are local varieties grown and adapted to suit environmental conditions, and has been grown for generations.

Exploration is activity of seeking, collecting and researching varieties in certain areas. Aryunis et al. (2004 and 2009), Aryunis (2013) has explored local rice in rice tidal agro-ecosystem, rice rain-fed field, swamp / lowland rice field, *payo* rice, *gogo* rice and irrigated rice field. The exploration results found 105 local rice varieties from Jambi. Local rice has high adaptability to each agro-ecosystem, but there is no known drought resistance trait in them. Therefore this research aims to obtain local rice varieties in Jambi which is resistant to drought in seedbed phase.

MATERIAL AND METHODS

Research Material. Materials used in this study is local rice varieties from Jambi, based on exploratory research result of Aryunis et al., (2004 and 2009) and Aryunis (2013) in agro-ecosystem wetlands and dry land in Jambi. There are 105 varieties and used two introduced varieties as control variety which are *Salumpikit* (drought tolerant) and IR20 (drought sensitive), varieties obtained from *Kebun Percobaan Muara Balai Besar Penelitian Padi* (Muara Rice Research Institute Experimental Farm) in Bogor, Urea, KCl, SP36, and rice field study site.

Tools used in this study is greenhouse utilized in drought screening test. Plastic tubs for seedling media 40 cm x 25 cm x 14 cm. Oven, Lux Hitester Hioki 3423 brand made in Japan, petridis cup, aluminum saucer and oil absorbent paper.

Research Time and Place. The experiment was conducted at Greenhouse of *Kebun Percobaan Muara Balai Besar Penelitian Padi* Bogor. This study was conducted from January to June 2013.

Research Method. Jambi local rice taken from exploration results are evaluated (screening) for determining survival rate during and after drought stress test. Screening was done at the seedling stage, at 14 and 21 DAS (days after sowing). Seeds sown in plastic tubs filled with field soil and created conditions according to standard operating procedures of rice cultivation on wet seedbed. Germinated seed in petridisc cup were sowed in seedling tub as much as 20 seeds (sprouts) for each variety in a test. Each tub possess 10 lines, two lines for drought tolerant and drought sensitive varieties. Treatment implemenation on drought seedbed media was carried out in accordance to seedling age by removing water on each plastic tub until water on media's surface runs out. The tubs are left to dry until a third of drought sensitive variety (IR20) leaves withered. After drought period was finished, seedbed soil samples were taken and their water content was analyzed .Recovery phase was conducted afterwards by providing water according to wet seedbed water requirements. Data were collected for grown seeds (vigor) and freshness criteria.

Data Analysis. To determine the treatment effect towards drought survival rate and seed height, researcher used descriptive analysis presented in tabular form.

Variable Observation. Observations on the percentage of survival (survival) is done 21 days after recovery (DAR) to seed which grew perfectly and retain freshness. Survival percentage is calculated as: local variety resistant seed percentage (T) divided by the number of seeds sown. The result of the survival rate calculation is exhibitted as follows:

$$\frac{\text{Number of surviving seed from tested local variety}}{\text{Number of sown seed}} \times 100\%$$

Drought tolerance scoring is based on a standard evaluation system IRRI (1988) (Table 1).

Table 1 – Rice plant tolerance scoring against drought after recovery (IRRI, 1988)

Scale	Post-recovery scoring	Drought tolerance level
1	90-100% recovered seeds	Very strong (seeds grow very quickly)
3	70-89% recovered seeds	Strong (seeds grow quickly)
5	40-69% recovered seeds	Normal
7	20-39% recovered seeds	Weak (Small seeds)
9	0-19% recovered seeds	Very weak (Small seeds and yellow leaves)

FINDINGS AND DISCUSSION

The results of screening 105 local rice varieties in Jambi conducted on drought-resistant control variety and IR20 drought-sensitive controls variety against drought stress in seedling 14 DAS. It exhibits Jambi local rice survival rate which ranges from 0 to 90% (data not published). Drought at the 21 DAS exhibits seedling survival percentage which ranges from 0 to 90% (data not published). Selected local rice varieties showed better response compared to Salumpikit.

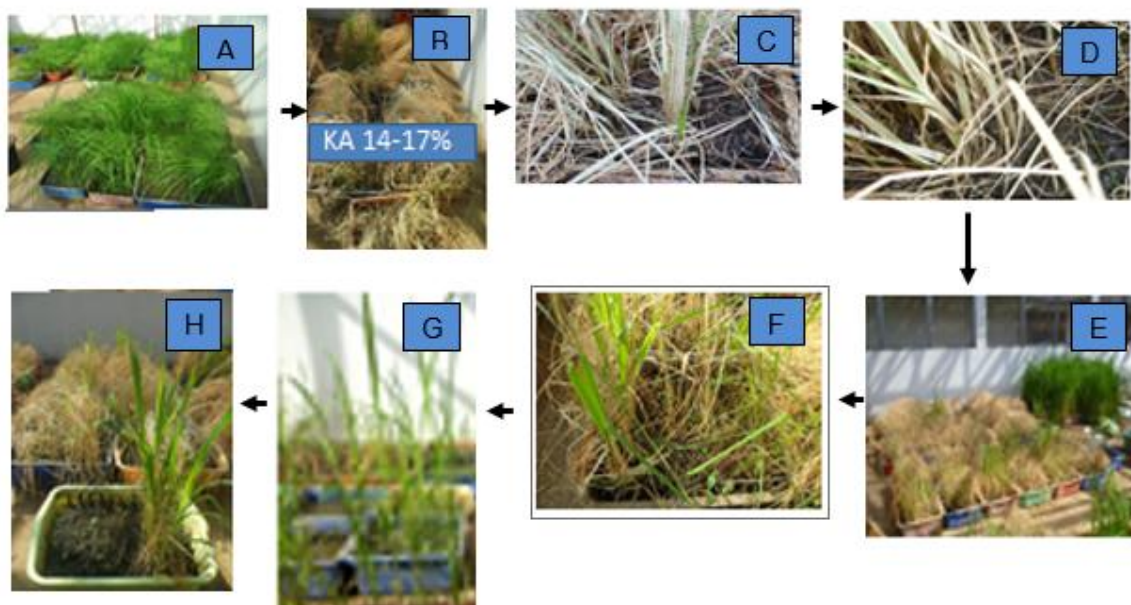


Figure 1 – Screening phase of Jambi local rice variety adaptation to drought stress up to 14-17% water soil content (under permanent wilting point) applied to seeding bed at *Rumah Kaca Balai Besar Padi* or *Balai Besar Padi* Greenhouse Muara Bogor Experimental Garden at 2013:

- A. Drought stress process starts in seeding media at 100% water content.
- B. Ending drought stress process after water content reaches 14-17% and initiated recovery process.
- C. Seeds started to recover.
- D. Seedling leaves started to grow.
- E. Differentiates seeds with drought stress applied and non-applied.
- F. Seed leaves started to grow normally.
- G. Seeds grow normally, calculated grown seed's survival rate % at 21 days after seeding.
- H. Variety possessing highest survival rate percentage (90%).

There were 11 local varieties selected from 105 Jambi rice variety and 2 control varieties (Salumpikit dan IR20). They possess survival stability after exposed to drought stress at 14 and 21 DAS. Forementioned 11 varieties are as follows:Padan wangi 60% and 20%,Iwan 70% and 25%, Putih Rendah 70% and 90%, Karya 30% and 30%, Karya Rendah 80% and 40%, Solok Kuning 55% and 70%, Kusut tidak berbulu 30% and 35%, Solok Putih

coklat di ujung 20% and 15%, Solok putih Kuning 50% and 45%, Payo 45% and 30%, Kurai Kusut 90% and 40%, Salumpikit 45% and 25% and IR 20 15% and 25%. Jambi local rice variety that survived drought stress applied at 14 DAS and not surviving drought stress at 21 DAS is as follows: Kuantik Kuning 55%, Padi putih 45%, Payo manis 45%, Jelatik 75%, Layap 70%, Layap Patah Daun 50%, Jelatik Batang Merah 45%, Sirendah pisang berbulu 55%, Sirendah pisang tidak berbulu 60% and Surian Kuning (beras putih) 70%. There are two (2) varieties that survived drought stress applied on 21 DAS as opposed to 14 DAS. Fore mentioned varieties are Seni 25% and Ungul super 25%.

Table 2 – Screening result of Jambi local rice variety survival rate after drought stress applied at 14 and 21 DAS

No.	No. Variety Accession	Variety Name	Drought at 14 DAS	Drought at 21 DAS
			%Survival	% Survival
1	1	Padan wangi	60	20
2	4	Kuantik Kuning	55	-
3	5	Padi Putih	45	-
4	13	Payo manis	45	-
5	18	Iwan	70	25
6	19	Rendah putih	70	90
7	23	Karya	30	30
8	24B	Ceko tidak berbulu	15	15
9	26	Lembu	50	25
10	27	Conde	55	40
11	28	Unggul Super	-	25
12	29	Seni	-	25
13	34	Jelatik	75	-
14	35	Layap	70	-
15	36	Layap Patah Daun	50	-
16	37	Karya rendah	80	40
17	38	Jelatik batang merah	45	-
18	47A	Sirendah pisang berbulu	55	-
19	47B	Sirendah pisang tidak berbulu	60	-
20	48	Solok kuning	55	70
21	49B	Kusut tidak berbulu	30	35
22	50B	Surian kuning (beras putih)	70	-
23	51A	Solok Putih coklat di ujung	75	15
24	51B	Solok putih Kuning	50	45
25	52	Payo	45	30
26	88	Kurai kusut	90	40
27	Resistant Control Variety	Salumpikit	45	25
28	Sensitive Control Variety	IR 20	15	25

The research results also exhibit some Jambi local rice variety possessing higher survival rate percentage compared to drought resistant control variety (Salumpikit) after drought stress applied at 14 DAS. Forementioned varieties are: Padan wangi, Kuantik Kuning, Iwan, Putih Rendah, Lembu, Conde, Jelatik, Layap, Layap Patah Daun, Karya Rendah, Sirendah pisang berbulu, Sirendah pisang tidak berbulu, Solok Kuning, Surian Kuning (beras putih), Solok Putih coklat di ujung, Solok putih Kuning and Kurai Kusut. On the other hand, varieties that possess higher survival rate percentage compared to Salumpikit control variety after drought stress at 21 Das are: Putih Rendah, Karya, Conde, Karya Rendah, Solok Kuning, Kusut tidak berbulu, Solok putih Kuning, Payo and Kurai Kusut (Table 1). Therefore this research found a number of Jambi local rice varieties possessing more stable drought resistant trait compared to control variety. The varieties are as follows: Putih Rendah, Conde, Karya Rendah, Solok Kuning, Solok putih Kuning, and Kurai Kusut.

DISCUSSION OF RESULTS

The research results exhibit Jambi local rice Padan wangi, Iwan, Putih Rendah, Karya, Ceko tidak berbulu, Lembu, Conde, Karya Rendah, Solok Kuning, Kusut tidak berbulu, Solok Putih coklat di ujung, Solok putih Kuning, Payo, Kurai Kusut, Salumpikit and IR 20 possess survival capability when exposed to drought stress at 14 dan 21 DAS. Nevertheless, drought resistant rice variety which possess higher survival rate compared to drought sensitive control IR 20 variety are Putih Rendah, Conde, Karya Rendah, Solok Kuning, Solok putih Kuning, Payo and Kurai Kusut. Every rice seed from Jambi local variety and control varieties (drought resistant and drought sensitive variety) that managed to grow after drought stress recovery phase are included in normal growth category (Figure 1). Research result exhibits difference in survival capability possessed by same variety against drought stress applied at different day after seeding (DAS). It is considered if the survivability aspect of a variety is not always expressed during drought stress. According to (Zulkarnain et al., 2009a) different mechanism appears to protect itself at every stage of water loss occurred during drought. Survival strategies during the initial dehydration would be to avoid protein unfolding and limiting membrane disruption with preferential hydration. After further water loss on cell hydration, sugar molecules ought to replace water in the hydrogen sites to preserve protein original structure and distance between phospholipids. This causes plants capable to survive in drought conditions.

CONCLUSION

Jambi local rice variety such as Putih Rendah, Conde, Karya Rendah, Solok Kuning, Solok putih Kuning, and Kurai Kusut were identified as drought adaptive are varieties possessing similar or higher survival rate percentage compared to drought resistant control variety conducted at 14 and 21 DAS. From rice plant improvement perspective, local rice variety is a valuable asset as the source of germplasm to broaden the source of genetic diversity for drought-resistant properties.

ACKNOWLEDGEMENTS

The authors would like to extend their gratitude to Dr. Fitry Tafzi, S.T.P., M.Si, for her aid in selecting Jambi local rice variety based on exploration result which is done meticulously to ensure homogeneity plant material. The authors also extend their gratitude to the Director of Qualification of Human Resources, General Directorate of Science and Technology Resources, Ministry of Research, Technology, and Higher Education, Republic of Indonesia for granting BPPDN (*Beasiswa Program Pascasarjana Dalam Negeri* or Domestic Post-Graduate Program Grant) to the authors.

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DOI <https://doi.org/10.18551/rjoas.2017-01.30>

**ВИДОВОЕ СООТНОШЕНИЕ ВОЗБИТЕЛЕЙ КОРНЕВОЙ ГНИЛИ И БОЛЕЗНЕЙ
КОЛОСА НА ПОСЕВАХ ПШЕНИЦЫ В ОРЕНБУРГСКОЙ ОБЛАСТИ**
THE SPECIES RATIO OF ROOT ROT PATHOGENS AND WHEAT DISEASES
AT FIELDS OF THE ORENBURG REGION

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АННОТАЦИЯ

Изучен видовой состав грибов, вызывающих корневую гниль и болезни колоса пшеницы, выращенной в различных зонах Оренбургской области. Идентифицированы виды грибов из рода *Bipolaris* (*B. sorokiniana*), *Fusarium* (*F. heterosporum*, *F. oxysporum*, *F. culmorum*, *F. graminearum*), *Alternaria alternata*, *Cercosporium* sp., *Penicillium* sp., *Aspergillus* sp. Установлено, что соотношение возбудителей в популяциях зависят не только от растения – хозяина, но в большей степени от климатических и эдафических факторов. Удалось проследить изменения в соотношении видов в популяции в зависимости от сорта, района выращивания и погодных условий вегетационного периода.

ABSTRACT

Studied the species composition of fungi, causing root rot and diseases of the ear of wheat, grown in various zones of Orenburg region. The identified species of fungi of the genus *Bipolaris* (*B. sorokiniana*), *Fusarium* (*F. heterosporum*, *F. oxysporum*, *F. culmorum*, *F. graminearum*), *Alternaria alternata*, *Cercosporium* sp., *Penicillium* sp., *Aspergillus* sp. Found that the ratio of pathogens in populations depend not only on the host plant, but to a greater extent on climatic and edaphic factors. It was possible to trace changes in the ratio of types in the population, depending on variety, area of cultivation and weather conditions of the growing season.

КЛЮЧЕВЫЕ СЛОВА

Пшеница, болезни, зерновые культуры, *Fusarium*, *Bipolaris*, *Alternaria*, патоген.

KEY WORDS

Wheat, diseases, grain crops, *Fusarium*, *Bipolaris*, *Alternaria*, pathogen.

Почву заселяют различные микроорганизмы, в том числе, микромицеты, являющиеся важными компонентами почвенного биоценоза. Они играют существенную роль в процессах почвообразования, вызывая заболевания многих растений. В почвах агроэкосистем, в отличие от естественных экосистем, патогенные популяции превышает по численности пороги вредоносности и обладают высокой изменчивостью [1]. Корневая гниль, листовая пятнистость, поражение колоса и зерна широкораспространенные болезни зерновых культур. Вызывает заболевание несколько видов фитопатогенных грибов, обитающих в почве, на семенах и растительных остатках, из родов *Fusarium*, *Bipolaris*, *Gaeommonomyces*, *Cercospora*, *Typhula*, *Rhizoctonia*, *Aureobasidium*, *Alternaria*, *Pythium*. По частоте встречаемости и вредоносности приоритет принадлежит грибам родов *Fusarium* и *Bipolaris*. По уровню биологической опасности виды грибов, относящиеся к этим родам, стоят на первом месте среди других патогенных видов [2]. Отсутствие устойчивых сортов, погодные

условия, несоблюдение агротехники играют важную роль в распространении этих возбудителей на посевах пшеницы и усилении инфекционного фона [3]. Снижение продуктивности растений, ухудшение качества зерна, экологическая нестабильность и экономические ущербы являются последствиями болезни. Ежегодные потери урожая от указанных заболеваний составляют до 20 - 30%. [1,3 - 6].

Негативные последствия от фузариозных болезней оцениваются, как в форме прямых потерь урожая [3], так и косвенных, вследствие ухудшения хлебопекарных качеств зерна [7]. и загрязнения его микотоксинами [8 - 10]. Потери урожая от грибов рода *Bipolaris* значительны в зоне с засушливым и влажным климатом. В последнее годы уделяется значительное внимание распространению и поражению растений грибами рода *Alternaria*.

Видовой состав возбудителей из родов *Fusarium*: *F. culmorum*, *F. graminearum*, *F. heterosporum*, *F. avenaceum*, *F. oxysporum*, *F. solani* и др., и *Bipolaris*: *B. sorokiniana* (*Cochliobolus sativum* Drechsl.), приурочен к определенным эколого-географическим районам. Так, фузариозно-гельминтоспориозная корневая гниль (плесень) зерновых с преобладанием видов *Fusarium* встречается в районах возделывания озимой пшеницы, т.е. в Центрально-Черноземном и Северо-Кавказском регионах, а с преобладанием гриба *Bipolaris sorokiniana* – на яровых культурах в Нечерноземной зоне (Северо-Западный, Центральный, Волго-Вятский регионы).

Задачей настоящей работы было определение видового состава грибов, вызывающих корневую гниль и болезни колоса пшеницы, выращенной в различных зонах Оренбургской области.

Материалы и методы исследований. Работа выполнена в отделе Микологии и иммунитета ФГБНУ ВНИИФ и в лаборатории Химической защиты растений кафедры Агротехнологий и лесного дела ФГБОУ ВО Оренбургский ГАУ.

Обследования посевов пшеницы на поражение корневую гнилью проводили в 2013-2014 году в течение всего вегетационного сезона. Сбор пораженных образцов осуществляли в фазы молочно-восковой и полной спелости в Оренбургском, Адамовском и Перволюцком районах Оренбургской области. Материалом для исследований служили образцы пораженных растений и зерно, в том числе и с разным баллом поражения. За образец или пробу принимали не менее 10 растений одного сорта, собранных на одном участке поля. Всего было собрано 56 пораженных образцов, из них пораженных корневую гнилью - 22, пораженное зерно - 34 образца.

Объекты исследования: яровая твердая пшеница: сорта Безенчугская степная, Оренбургская 10, Оренбургская 13, Оренбургская 21; яровая пшеница мягкая: сорта Юго - Восточная 2, Учитель, Белянка, Лада, Альбидум 32, Дарья, ЮВ 4, Л 505, Саратовская 42, озимая пшеница мягкая: Пионерская 32, Оренбургская 105 (таблица 1); возбудители, вызывающие болезни зерновых культур: *Fusarium culmorum* (W.G.Sm.) Sacc., *F. oxysporum* (Schlecht.) Snyd.et Hans., *F. heterosporum* Nees., *F. sporotrichiella* nom. nov. Bilai., *F. gibbosum* App.et Wr.emend Bilai., *F. avenaceum* (Fr.) Sacc., *F. moniliforme* Sheld., *F. sambucinum* Fuck., *F. semitectum* Berk.et Rav., *F. graminearum* Schw., а так же *Bipolaris sorokiniana* (Sacc.) Shoem, *Drechslera teres* (Sacc.) Shoem.Ito, *Alternaria* sp.

Для оценки фитосанитарного состояния посевов и определения видового состава возбудителей провели микологический анализ собранных образцов. С целью выделения гриба в чистую культуру с каждого сортообразца закладывали до 100-150 фрагментов пораженной ткани на питательную среду - картофельно - глюкозный агар и выращивали грибы в течение двух недель при температуре 18-22° С. Идентификацию видов осуществляли методом микроскопирования на 14 сутки роста грибов по морфологии конидий [11-13].

Об устойчивости образцов пшеницы судили по степени развития болезни и числу пораженных растений (%). Интенсивность поражения корневую гнилью оценивали в баллах по модифицированной шкале М.П. Лесового. Патогенные свойства грибов рода *Fusarium*, *Bipolaris*, *Alternaria* изучали на проростки яровой мягкой пшеницы сорта Альбидум 32. Дифференциацию грибов по патогенным свойствам проводили на 2

дневных проростках семян и используя рулонный метод. Инокулировали семена и двухдневные проростки споровой суспензией (5 мл / 25 штук при концентрации $100-120 \times 10^6$). Оценку по патогенности проводили на пятые сутки учитывая длину первичного корня и ростка, количество вторичных корешков. Для каждого варианта использовали не менее 25 всхожих семян. Результаты опытов обрабатывали статистически. Контролем служили проростки пшеницы, выращенные в воде.

Результаты и их обсуждение. Корневая система растений всех видов и сортов пшеницы, собранных в фазу полной спелости в Адамовском и Оренбургском районах в той или иной степени была поражена возбудителями корневой гнили. Интенсивность поражения корней озимой пшеницы составила 78-85%, яровой мягкой – 48-63%, яровой твердой – 33% (табл. 2). По результатам микологического анализа определена видовая структура популяций возбудителей корневой гнили посевов пшеницы в Оренбургской области. Корневую гниль пшеницы вызывал комплекс патогенов, преобладающее положение в котором занимали грибы из рода *Bipolaris*, *Alternaria*, *Fusarium*. Из 750 изолятов грибов, выделенных в чистую культуру, идентифицировано 8 видов патогенных грибов: *Bipolaris sorokiniana* (Sacc) Shoem, *Fusarium oxysporum* (Schlecht.) Snyd.et Hans., *F. heterosporum* Nees., *F. culmorum* (W.G.Sm.) Sacc., *F. sporotrichiella* nom.nov.Bilai., *F. gibbosum* App.et Wr.emend Bilai, *F. moniliforme* Sheld., *Drechslera teres* (Sacc.) Shoem.Ito, *Alternaria* sp., а также сопутствующие сапрофитные грибы родов *Cercosporium* sp., *Penicillium* sp., *Aspergillus* sp., *Nigrosporum* sp., *Rizopus* sp., *Gliocladium*, *Trichothecium* и полусапрофитные бактерии сем. *Enterobacteriaceae* (род *Ervinia*, *Bacillus*). С пораженных колосьев и зерна выделили 270 изолятов грибов. Идентифицированы виды *Bipolaris sorokiniana* (Sacc) Shoem, *Fusarium oxysporum* (Schlecht.)Snyd.et Hans., *F. heterosporum* Nees., *Alternaria* sp. Частота встречаемости видов в изученных районах была различной (таблица 3). Болезнь внешне проявляется в виде побурения корней, подземного междоузлия, узла кущения, основания стебля и влагалища нижних листьев. Пораженные растения отставали в росте, снижалась их кустистость и плотность стебля.

Таблица 1 – Сорта пшеницы с признаками поражения возбудителями корневой гнили, собранные в Оренбургской области в 2013 - 2014 годах (растения, корни, зерно)

Сорт	Вид пшеницы	Происхождение (год, район)
Западная зона		
ЮВ 4	Яровая мягкая	2014, ЗАО «Степное», Ташлинский
Л - 503	Яровая мягкая	2014, ЗАО «Степное», Ташлинский
Саратовская 42	Яровая мягкая	2014, ЗАО «Степное», Ташлинский
Центральная зона		
Пионерская 32	Озимая мягкая	2013, УОП Оренбургский ГАУ, Оренбургский
Оренбургская 105	Озимая мягкая	2013, УОП Оренбургский ГАУ, Оренбургский
Юго - Восточная 2	Яровая мягкая	2013, УОП Оренбургский ГАУ, Оренбургский
Учитель	Яровая мягкая	2013, УОП Оренбургский ГАУ, Оренбургский
Белянка	Яровая мягкая	2013, УОП Оренбургский ГАУ, Оренбургский
Лада	Яровая мягкая	2014, Колхоз им. К. Маркса Переволоцкий
Альбидум 32	Яровая мягкая	2014, Колхоз им. К. Маркса Переволоцкий
Дарья	Яровая мягкая	2014, Колхоз им. К. Маркса Переволоцкий
Оренбургская 10	Яровая твердая	2013, ГНУ ОНИИСХ, Оренбургский
Оренбургская 21	Яровая твердая	2013, ГНУ ОНИИСХ, Оренбургский
Оренбургская 13	Яровая твердая	2013, ГНУ ОНИИСХ, Оренбургский
Восточная зона		
Безенчукская степная	Яровая твердая	2014, ООО «Юбилейное» Адамовский
Безенчукская степная	Яровая твердая	2014, КФХ Смолкин, Адамовский

Отмечена видовая дифференциация патогенов по агроклиматическим зонам. Преобладали виды в зависимости от характерных для данного вида наиболее благоприятных температур для роста. Этиология грибов, выделенных с яровой и озимой пшеницы в одинаковых условиях была различной. Инфекционная нагрузка на сорт отличалась в зависимости от балла поражения растения. Прослеживалось

процентное соотношение видов на сорте в зависимости от балла поражения растения в природных условиях. Отмечены симбиотические взаимоотношения грибов разных видов и родов.

Таблица 2 – Интенсивность поражения и распространенность болезни на корнях растений разных видов пшеницы в фазу полной спелости в Адамовском и Оренбургском районах в 2013 - 2014 годах (процентное соотношение)

Вид пшеницы	Сорт	Происхождение (район, год)	Интенсивность поражения, %	Распространенность болезни, %
Озимая мягкая	Пионерская 32	2013, Оренбургский	85,5	100
	Оренбургская 105	2013, Оренбургский	78,6	100
Яровая мягкая	Юго - Восточная 2	2013, Оренбургский	56,7	100
	Учитель	2013, Оренбургский	48,3	100
	Белянка	2013, Оренбургский	63,7	100
Яровая твердая	Безенчукская степная	2014, Адамовский	33,3	100

При анализе растительного материала яровой и озимой пшеницы было отмечено соотношение системы оценки поражения растений в полевых и лабораторных условиях. При закладывании на питательную среду фрагментов корневой системы растений с баллом поражения 0-1 - выделялись сапротрофные грибы родов *Penicilium*, *Mucor*. При возрастании балла поражения растений в полевых условиях (балл поражения от 2 до 4) в лабораторных условиях с фрагментов корневой системы таких растений выделялись патогенные, вызывающие поражение растений: *Fusarium*, *Bipolaris* и *Alternaria*.

Соотношение видов грибов, выделенных с сортообразцов озимой и яровой пшеницы, выращенных в одинаковых условиях учебно-опытного поля Оренбургского ГАУ, были различными. Наибольшее количество изолятов грибов выделено с корневой системы сортов яровой мягкой пшеницы Юго - Восточная 2 и Учитель. Превалировали виды *Bipolaris sorokiniana* (Sacc) Shoem, *F. heterosporum*, *F. oxysporum*, грибы рода *Alternaria*. С сорта яровой мягкой пшеницы Белянка наряду с патогенными грибами выделены грибы *Penicillium sp.*, *Aspergillus sp.*, *Gliocladium sp.*, *Trichoderma sp.* (до 40%).

Таблица 3 – Частота встречаемости видов грибов, выделенных с пораженных корней сортов яровой и озимой пшеницы в Оренбургском и Адамовском районах Оренбургской области в 2013 - 2014 гг.

Виды грибов	Количество изолятов, %			Всего изолятов	
	Адамовский район	Оренбургский район			
	Яровая твердая	Яровая мягкая	Озимая мягкая	ед.	%
<i>Bipolaris sorokiniana</i>	28,4	21,1	22,5	169	22,5
<i>Alternaria spp.</i>	9,1	15,2	15,4	109	14,5
<i>Fusarium spp.</i>	15,9	7,8	13,4	83	11,1
<i>Penicillium sp.</i> , <i>Cercosporum sp.</i> , <i>Aspergillus sp.</i> , <i>Nigrosporum sp.</i> , <i>Rizopus sp.</i> , <i>Gliocladium sp.</i> , <i>Mucor sp.</i> , <i>Trichothecium sp.</i>	46,6	55,9	48,7	389	51,9
Всего изолятов патогенных и сапротрофных видов, ед.	88	356	306	750	

Количество выделенных патогенных видов грибов с образцов озимой мягкой пшеницы сортов Пионерская 32 и Оренбургская 105 значительно меньше, чем выделено с яровых сортов Юго-Восточная 2, Учитель, Белянка. В основном это *Fusarium heterosporum* Nees. и *Bipolaris sorokiniana* (Sacc) Shoem. Сапротрофные виды грибов сильно лизировали от активно развивающихся бактерий. Отмечено, что озимые зерновые культуры интенсивнее поражаются фузариозными возбудителями, которые активно развиваются после перезимовки в холодный и влажный период. Яровые

зерновые чаще поражаются возбудителями *Bipolaris sorokiniana* (Sacc.) Shoem и *Drechslera teres* (Sacc.) Shoem.Ito.

При анализе видового разнообразия грибов, выделенных с одного сорта в разные фазы вегетации, также были отмечены достоверные отличия. Сорт яровой твердой пшеницы Безенчугская степная, собранный в фазу молочно-восковой спелости (Адамовский район), поражался в меньшей степени, чем собранный в фазу полной спелости зерна по всем баллам поражения. Так же отмечено, что процентное соотношение грибов рода *Fusarium* и *Bipolaris* на одном сорте менялось в зависимости от фазы вегетации. В фазу молочно - восковой спелости превалировали грибы рода *Fusarium*, а в фазу полной спелости зерна – рода *Bipolaris*.

Наблюдения показали, что соотношение возбудителей в популяциях корневой гнили зависят не только от растения-хозяина, но в большей степени от климатических и эдафических факторов. Удалось проследить изменения в соотношении видов в популяции в зависимости от района выращивания и погодных условий вегетационного периода.

Выводы. В последнее время, помимо возбудителей корневых гнилей грибов рода *Bipolaris* и *Fusarium*, усиливается вредоносность грибов рода *Alternaria*, которые в отдельные годы могут наносить существенный вред зерновым культурам. Местами скопления и резервации грибов, вызывающих болезни растений, в том числе и корневую и прикорневую гниль, является почва, пожнивные остатки, семена. Факторами, усиливающими развитие гнилей, являются нарушение агротехники, несоблюдение севооборотов и степень их насыщенности зерновыми культурами.

Наблюдения показали, что соотношение возбудителей в популяциях корневой гнили и пораженном зерне зависят не только от растения-хозяина, но в большей степени от климатических и эдафических факторов. Удалось проследить изменения в соотношении видов в популяции в зависимости от сорта, района выращивания и погодных условий вегетационного периода.

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DOI <https://doi.org/10.18551/rjoas.2017-01.31>

**ВЛИЯНИЕ КРАТКОВРЕМЕННОГО ТЕМПЕРАТУРНОГО СТРЕССА
НА ПРОДОЛЖИТЕЛЬНОСТЬ МЕЖФАЗНЫХ ПЕРИОДОВ И ФОРМИРОВАНИЕ
ПОСЕВНЫХ КАЧЕСТВ СЕМЯН СОИ**

**EFFECT OF SHORT-TERM TEMPERATURE STRESS ON THE DURATION
OF INTERPHASE PERIODS AND SOWING QUALITIES OF SOYBEAN SEEDS**

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АННОТАЦИЯ

В статье приведены результаты исследований по влиянию кратковременного температурного стресса на рост и развитие растений сои в контролируемых условиях среды в 2011-2013 гг. на базе ФГБОУ ВО Дальневосточного ГАУ (г. Благовещенск). Установлено, что кратковременное понижение температуры до 5°C в период налива бобов - созревания способствует сокращению продолжительности вегетационного периода у растений скороспелого сорта Лидия. Высокотемпературный стресс в течение 12 часов в данный же период у скороспелого сорта Лидия удлинил период вегетации на 4 дня, а у позднеспелого сорта Марината - сократил на 6 дней, а также способствовал формированию у изучаемых сортов сои более мелких семян по сравнению с контролем в 1,7 (сорт Лидия) и 2 раза (сорт Марината), характеризующимися низкими посевными качествами.

ABSTRACT

In the article shown results of studies on the effect of short-term temperature stress on growth and development of soybean in controlled conditions for 2011-2013 on the base of Far Eastern State Agrarian University (Blagoveshchensk). It was found that short-term drop in temperature to 5° C in the period of filling bean-ripening contributes to reduce the length of the vegetative season of plants ripening varieties of Lydia. In the same period high-temperature stress during 12 hours extended the vegetation period on 4 days for ripening varieties of Lydia and reduced on 6 days for late-maturing varieties of Marinato, and also contributed to the formation at the studied varieties of soybean of smaller seeds compared with the control in 1.7 (variety of Lydia) and 2 times (variety of Marinato), which the characterized low sowing qualities.

КЛЮЧЕВЫЕ СЛОВА

Соя, температурный стресс, посевные качества, межфазные периоды, показатели продуктивности.

KEY WORDS

Soybeans, temperature stress, crop quality, interphase periods, productivity indicators.

Основным экологическим фактором, определяющим урожайность сои в Амурской области, является температура. Ведущую роль, как в размерах температурного оптимума, так и в термоадаптации, играют молекулярно-генетические механизмы

формирования устойчивости растений, которые вместе с другими определяют их терморезистентность [18,19].

Погодно-климатические условия Приамурья затрудняют ежегодное гарантированное получение семян с высокими посевными качествами. Недостаток тепла и неустойчивость температурного режима в конце вегетационного периода ограничивают возможности формирования полноценных семян сои [5, 10, 24]. Температурный стресс представляет собой один из самых значимых абиотических факторов, степень его отрицательного влияния на урожайность культур зависит от продолжительности действия и фазы развития [1, 2, 19].

Соя относится к числу растений, чувствительных к изменению экологических условий [21, 23, 25]. Поэтому цель исследований – выявить влияние кратковременного температурного стресса на посевные качества семян сои.

Исследования проводились в 2011-2013 гг. в контролируемых условиях среды на демонстрационном участке ФГБОУ ВО Дальневосточного ГАУ, расположенном в г. Благовещенске Амурской области. Объектами исследования служили скороспелый сорт сои с периодом вегетации 96-104 дня – Лидия и позднеспелый с вегетационным периодом 115-120 дней – Марината [3, 17].

Растения выращивали в вегетационных сосудах емкостью 1 кг абсолютно сухой луговой бурой почвы при оптимальном водном режиме в 10-кратной повторности. В каждый сосуд высевали по 7 семян с последующим оставлением 3 растений. Площадь питания 1 растения составляла 3×4 см. Растения сои по достижении фазы налива бобов подвергались воздействию низкой и высокой положительной температуры (+5 и +45°C) в течение 2, 12 и 48 часов. Искусственный температурный стресс проводили в термостатах ТС-80М-2 и ТВ-5/50. После прекращения кратковременного воздействия температурного стресса опытные растения достигали фазы созревания в естественных условиях вегетационного участка.

Таблица 1 – Схема опыта

№	Наименование варианта
1	Естественные условия (контроль)
2	Воздействие низкой положительной температуры (+5°C) на растения сои в фазе налива бобов в течение 2 часов
3	Воздействие низкой положительной температуры (+5°C) на растения сои в фазе налива бобов в течение 48 часов
4	Воздействие высокой температуры (+45°C) на растения сои в фазе налива бобов в течение 2 часов
5	Воздействие высокой температуры (+45°C) на растения сои в фазе налива бобов в течение 12 часов

В лабораторных условиях определяли хозяйственно-ценные признаки по методике государственного сортоиспытания сельскохозяйственных культур [11], всхожесть, энергию прорастания согласно ГОСТ 12038-84 [12], силу роста семян по методике Б.С. Лихачева [9]. Статистическую обработку данных и корреляционный анализ (при n=36) исследований проводили по методике Б. А. Доспехова (1985) в компьютерной обработке О. Д. Сорокина [15].

РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЙ

Известно, что температурный стресс оказывает вредное воздействие на развитие сои. Даже короткие периоды высокой температуры сильно снижают темп роста растений, приводят к опадению цветков и бобов. Период созревания средне- и позднеспелых сортов под влиянием высоких температур сокращается, а у раннеспелых сортов почти не изменяется [4, 6, 7, 8, 16, 22].

В ходе проведенных нами исследований установлено, что высокотемпературный стресс в течение 12 часов сократил временной интервал фазы налива бобов – созревания у позднеспелого сорта сои Марината на 6 дней по сравнению с контролем (рис. 1).

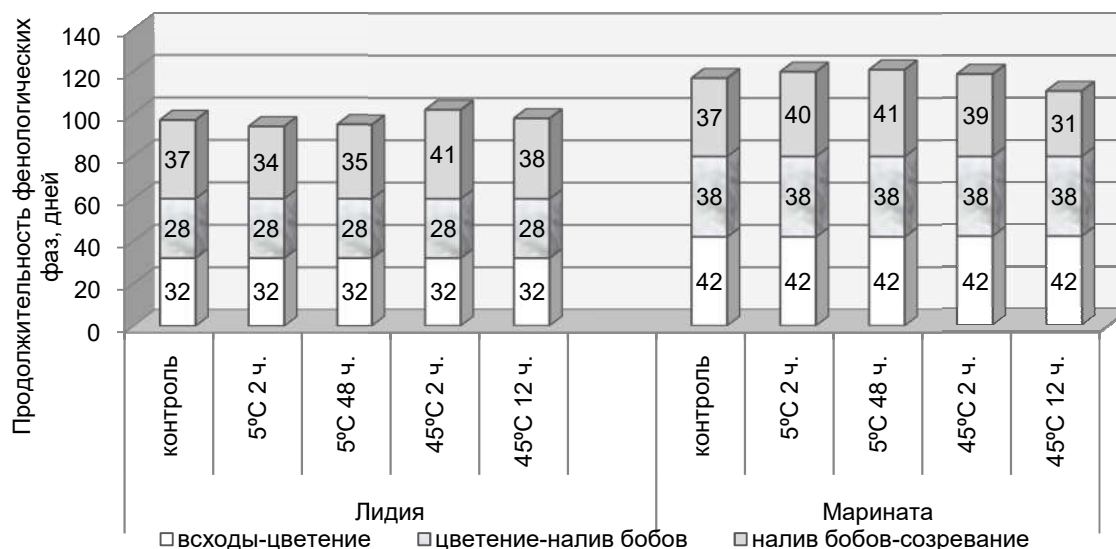


Рисунок 1 – Продолжительность фенологических фаз растений сои после действия кратковременного температурного стресса, 2011-2013 гг.

Вероятно, разная реакция растений сои на действие кратковременного температурного стресса обусловлена тем, что сорта сои Лидия и Марината отличаются по скороспелости. В частности, высокотемпературный стресс у скороспелого сорта Лидия удлинил период вегетации на 1-4 дня, а у позднеспелого сорта Марината при его действии в течение 12 часов сократил вегетационный период на 6 дней.

Что касается кратковременного понижения температуры до 5°C, то исследуемый фактор отразился сокращением продолжительности периода налива бобов - созревание у растений скороспелого сорта Лидия. Достоверно низкая масса семян с одного растения, также выявлена у изучаемых сортов в пятом варианте. Причем, отмечена значительная изменчивость данного показателя, коэффициент вариации которого в пределах 37-43%. При учете количества бобов и семян нами отмечена тенденция снижения этих показателей в пятом варианте.

Таблица 2 – Влияние температурного стресса на основные показатели продуктивности сортов сои, 2011-2013 гг.

Сорт	Вариант*	Кол-во бобов, шт.		Кол-во семян, шт.		Масса семян с 1 растения, г		Масса 1000 семян, г	
		$\bar{x} \pm tS_x$	V, %	$\bar{x} \pm tS_x$	V, %	$\bar{x} \pm tS_x$	V, %	$\bar{x} \pm tS_x$	V, %
Лидия	1	4,7±0,5	18	7,5±0,9	19	1,08±0,13	19	149±9,1	10
	2	4,6±0,7	26	7,7±1,0	24	1,04±0,15	25	138±4,6	6
	3	4,4±0,6	24	7,2±1,1	27	0,98±0,15	28	137±10,0	12
	4	3,8±0,7	31	6,0±0,9	24	0,74±0,11	26	123±16,6	25
	5	3,8±0,7	33	5,5±1,0	31	0,54±0,12	37	86±8,4	18
Марината	1	4,3±0,4	15	6,8±0,7	18	1,19±0,14	21	176±11,3	11
	2	3,9±0,6	26	6,0±0,7	20	0,99±0,09	15	164±5,1	5
	3	3,2±0,3	17	5,0±0,5	17	0,79±0,09	21	159±6,9	8
	4	3,9±0,6	25	6,4±0,9	23	1,05±0,15	26	163±7,7	8
	5	3,6±0,6	25	5,0±1,1	39	0,47±0,10	42	88±9,2	25
НСР ₀₅ по фактору А		0,85		1,36		0,18		14,12	
НСР ₀₅ по фактору В		1,35		2,15		0,29		22,33	
НСР ₀₅ част. сред.		1,91		3,05		0,41		31,57	

* Примечание: 1. Контроль (естественные условия); 2. t=+5°C в течение 2 часов; 3. t=+5°C в течение 48 часов; 4. t=+45°C в течение 2 часов; 5. t=+45°C в течение 12 часов.

Продуктивность растений в неблагоприятных условиях внешней среды обусловлена потенциальными возможностями сорта адаптироваться к этим условиям [14, 20]. По мнению Л.К. Малыш и К.С. Малышева кратковременное (до 2 часов) понижение ночных температур до 7-8°C в период налива бобов сокращает период вегетации у отдельных сортов сои, но не оказывает влияние на их продуктивность [18].

На основе проведенных нами исследований установлено, что низкотемпературный стресс также не оказал существенного влияния на формирование количества бобов и семян у исследуемых сортов.

Однако следует отметить, что в отличие от положительной низкой, высокая температура оказывает влияние на хозяйственно-ценные признаки, такие как масса семян с растения и масса 1000 семян. В результате воздействия высокотемпературного стресса в течение 12 часов сформировались у изучаемых сортов более мелкие семена сои по сравнению с контролем в 1,7 (сорт Лидия) и 2 раза (сорт Марината) (табл. 2).

Различия в уровне реакции сортов на кратковременные понижения и повышения температур, вероятно, можно объяснить разным уровнем адаптации сортов сои Лидия и Марината к действию изучаемых факторов. Это не могло не отразиться на растениях.

Несмотря на высокую потребность в тепле соя из всех теплолюбивых культур отличается значительной сопротивляемостью резким температурным изменениям [13]. Однако при этом температурный стресс приводит к ухудшению посевных качеств семян сои [18].

В ходе проведенных нами исследований установлено, что в большей степени на основные посевные качества семян сои в фазе налива бобов влияет высокотемпературный стресс. Причем, действие высокотемпературного стресса (45°C 12 часов) в течение более длительного периода приводит к формированию семян с более низкими посевными качествами по сравнению с действием кратковременного высокотемпературного стресса (45°C 2 часа).

Кроме этого, нами выявлено, что при высокотемпературном стрессе в течение 12 часов посевные качества семян сои сорта Лидия снижаются в 1,9... 2,7 раза, у сорта Марината – в 3...7 раз по сравнению с контролем.

Таблица 3 – Влияние кратковременного температурного стресса на посевные качества семян сои, 2011-2013 гг.

Сорт	Вариант	Энергия прорастания, %		Лабораторная всхожесть, %		Сила роста, %		Количество проростков, оцененных в баллах				
		$\bar{x} \pm S_x$	V, %	$\bar{x} \pm S_x$	V, %	$\bar{x} \pm S_x$	V, %	сильные		слабые		
								5	4	3	2	1
Лидия	1	71±2,2	5	96±2,0	3	91±2,0	4	80	5	6,5	2	0
	2	70±3,4	8	92±4,8	9	86±4,8	10	77	3,5	6	3	0
	3	60±3,5	10	82±3,8	8	75±5,9	13	64,5	7,5	3,5	5	0,5
	4	68±4,5	11	89±4,0	8	70±6,8	17	60,5	4,5	5	9,5	1,5
	5	31±2,6	21	49±6,3	27	34±6,6	38	10	12	11,5	2,5	6
Марината	1	60±2,3	7	96±2,6	5	86±3,5	7	81,5	2	2,5	1,5	1
	2	61±4,8	15	92±2,3	4	85±2,5	5	75,5	3,5	5,5	0,5	1
	3	55±4,3	16	90±1,9	4	85±1,6	3	70,5	5,5	9	5	2
	4	44±4,0	15	76±6,4	15	56±7,0	21	46,5	5,5	4,5	5,5	4
	5	8±1,6	46	31±5,1	33	21±5,0	54	0	9,5	11,5	4,5	12,5
НСР ₀₅ по фактору А		4,83		5,88		6,80						
НСР ₀₅ по фактору В		7,64		9,30		10,75						
НСР ₀₅ част. сред.		10,81		13,15		15,22						

* Примечание: 1. Контроль (естественные условия); 2. t=+5°C в течение 2 часов; 3. t=+5°C в течение 48 часов; 4. t=+45°C в течение 2 часов; 5. t=+45°C в течение 12 часов.

Необходимо отметить, что как высокие температуры (45°C), так и низкие (5°C) снижают силу роста семян сои, а, следовательно, и получение сильных проростков, которые впоследствии могут дать начало роста и развития растений сои и большую вероятность получения большей продуктивности. Кроме этого, установлено, что воздействие на растения сои сортов Лидия и Марината высокой температуры в течение 12 часов, впоследствии скажется негативно на посевные качества семян. И возможность получить проростки сои (разной степени) составит всего 38-42%. Остальные 58-62% семян не прорастут.

Значительная потеря урожая уже на стадии прорастания может быть и если высевать семена, полученные от растений, которые подвергались даже кратковременному действию высокой температуры (45°C 2 часа).

По всей вероятности, это связано с тем, что соя, как и большинство сельскохозяйственных культур (за исключением растений южных широт – хлопчатник, рис, сорго и др.) по жароустойчивости относится к последней группе – нежаростойких растений, не обладающих генотипической устойчивостью к высокой температуре.

ВЫВОДЫ

Установлено, что кратковременное понижение температуры до 5°C в период налива бобов-созревание способствует сокращению продолжительности вегетационного периода у растений скороспелого сорта Лидия. Высокотемпературный стресс в течение 12 часов в период налива бобов-созревание у скороспелого сорта Лидия удлинил период вегетации на 4 дня, а у позднеспелого сорта Марината - сократил на 6 дней. Воздействие высокотемпературного стресса в течение 12 часов в период налива бобов-созревание способствует формированию у изучаемых сортов сои более мелких семян по сравнению с контролем в 1,7 (сорт Лидия) и 2 раза (сорт Марината), характеризующимися низкими посевными качествами.

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OVERVIEW ON THE ADDITIVES USED IN IMPROVEMENT OF DOUGH FLOW BEHAVING CHARACTERISTICS

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ABSTRACT

Bread in all its diversity has cited as an ancient foodstuff for over 6000 years; bread dough, due to its viscoelastic behavior may consider as the most complicated rheological system which highly effects on final products' sensorial and textural properties. Since the research dough rheology is of being challenging issues, therefore this explains why dough rheology has been an attractive title for several decades. Recently, demand to use new formula and sources such as cassava which result in enhancement of digestibility and along with it, the incorporation of aforesaid sources in cereal products, has been converted to a growingly investigation of rheological properties of dough. Substitution level of any novel sources directly effects on texture properties, even adverse affections, which evaluates by panelists therefore in this review we focus on different concepts of bread rheology and the affection of all added ingredients on physiochemical properties.

KEY WORDS

Food rheology, physiochemical properties, organoleptic properties, sensory evaluation.

Depending on the regions human being is living, a range of cereals consider as the most used one and therefore climatic conditions, growth process and the type of soil even effect on the quality of their products (Taketa et al., 2004). Considering bread as a widely consuming commodities in many nations, the role of additives in technological improving along with concerns related to its quality and sustainability are issues which makes bread so determinative and important in dietetic (Goesaert et al., 2008, Rostami et al., 2013).

Among bakery products, bread is a high demand commodities find in families' food baskets, therefore the possible risks may transmit when distributing this kind of products is of course, a concern for nutritionist. With regards to the fact that enriching is targeting healthier diet (Wood, 2002; Izydorczyk et al., 2001), addition of compounds such as β -glucan, fibers (soluble and insoluble dietary fibers (Hadfield and Bennett, 1998; Meuser et al., 1994; Ghafari et al., 2013; Cummings, 1994) and other cereals flours as well as gums (Gómez-Díaz and Navaza, 2003) namely alginate, carrageenan etc (Rosell et al., 2001) to the wheat dough is of interest (Straumite et al., 2010; Raninen et al., 2010). Mainly, addition of an ingredient to bread formula is performed with aiming at functions like oil uptake (Albert and Mittal, 2002; Lucca and Tepper, 1994), increase nutritional value, extending shelf life and shelf stability and diminishes the incidence of diseases e.g. gastrointestinal and fibers are of such those compounds (Park et al., 1997; Anderson et al., 2009; Figuerola et al., 2005; Rosell et al., 2001; Gurkin, 2002).

It must be noted that subjecting of compounds to mechanical and heat treatments during baking cause to some changes in additives nature, (Collar and Armero, 1996; Létang et al., 1999; Rosell et al., 2007; Moreira et al., 2010) effecting final product in terms of flavor and rheological properties which is routinely a technical issue (Katina et al. 2006). Rheology

of each fluid or semi fluid food product plays an important role in quality of it (Bloksma, 1990). To produce dough, some ingredients incorporate with each other consisting of water, salt, flour, additives. The role of each ingredient in bread formula can be explained; water as the main liquid of formula plasticize dough and helps to its extension (Belton, 2003). The percent water absorption increased significantly with the addition of surfactants (monodiglyceride and lecithin) alone or in combination. Moreover, the overall dough rheological characteristics and baking quality improved and further these surfactants retarded the rate of staling in bread (Azizi et al., 2003). The role of salt imperceptibly affects via affection of hydrogen bonds and cohesiveness of system (Eliasson and Larsson, 1993). The fact that more salt can bond with more water molecules, it can imply that gluten strength will increase (Preston, 1985; Ghadami et al., 2014). Either main bread base compounds or additives have their priorities and limitations in creating targeted properties.

Dietary fibers. Fibers contain some sub structures including lignin, cellulose, pectin and carbohydrates components (e.g. modified cellulose, derivate fibers from cereals or fruits, inulin and guar) (Elleuch et al., 2011; Sudha et al., 2007; Zhang and Moore, 1997; Gomez et al., 2003; Wang et al., 2002). Psyllium seed is a source of dietary fiber from *Plantago* genus by its incorporation cholesterol levels are reduced (Cummings, 1993; Anderson et al., 2000).

Non starch polymers such as pentosa (Izydorczyk et al., 2003) are important owing to its functional properties such as the role of them in cell wall against other harmful microorganisms (Maes and Delcour, 2002).

Another group of hydrocolloids is so-called Gums whose affections are different on dough quality; for instance locust bean gives water holding property and increase softness of dough, or in case of xanthan and alginate hindering some gluten-protein interactions leading to modification in technical properties of dough (Rao et al., 2000).

B-glucan can create high viscous dough (Delcour et al., 1991; Wang et al., 1998; Nikoofar et al., 2013). Some other sources of ingredients and additives can be classed as non-wheat flour (Gandhi et al., 2001 and Sharma and Chauhan, 2002) owing to their dietary fibers. Production of flour can be from grains like wheat, rye, maize & roots like cassava in order to enrich wheat flour (Spiekermann, 2006; Ekop et al., 2007; Lin et al., 2009).

These additives also give their rheological properties (Oluwole et al., 2006). furthermore, Oyster mushroom, a source of dietary fiber both soluble and insoluble mainly B glucan (Fahmey et al., 1981; Ulloa et al., 1988; Varughese, et al., 1996; Petrovska et al., 2002), therefore increases population public health from the viewpoint of nutritional (Autio et al., 1998). Enriching with amino acids also studied by Stark et al. (1975) and Hoover. (1979).

Reducing and oxidizing agents

Both additives of interchanging and improving s-s bonds affecting on the final strength of dough (Eliasson and Larsson, 1993, Wrigley et al., 1998). Concerning the type and variety of wheat, it must note that their physiological and theological properties can have far reaching influences on the final dough. Improvers, mainly oxidizers and reducers 2,3, are a group of additives targeting on ehancing the bread qualities in stages like fermentation, baking and etc.

Proteins. Gluten is rich in gliadins and glutenins. Protein-starch interactions mostly comes from Gluten which is composed of gliadins(prolamines); responsible for plasticity and glutenins (glutelines); responsible for elasticity.

Dynamic rheological parameters of glutes are able to indicate the wheat quality. Glutes from poor quality reconstituted using glutes of different wheat cultivars and a content source of starch and water soluble (Khatkar and Schofield, 2002). Protein effects on increasing of water affection (Hefnawy et al., 2012).

Commonly, the quality and quantity of proteins consider as critical parameter in determining flour quality grade but starch is more important (Lindahl and Eliasson, 1986). Due to unique structure of peptide connected amino acids in polymer chains, they play role in flavor, structure and texture of foodstuffs. Dough is a complex, nonlinear set with time dependent viscoelastic system (Mani et al., 1992). Viscoelastic behavior of dough contains completely viscous liquid and complete elastic solid properties (Lindahl, L., A. C. Elisson, 1992). Primarily, nonfat dry milk powder was added to dough due to as bellows;

Increase of water uptake capacity in dough, enhancing the body properties of bread dough, consistency and modification of dough, improving bread color as a result of lactose (dry milk contains 52%) presence in browning reaction, reduction of staling rate.

Enriched lysine materials such as beans are a superior in fortifying bread in developing countries where lack of sufficient wheat source has led to importing this necessity good. Addition of cowpea flour increase the level of water uptake in wheat flour may lead to starch broken up in baking stage (Hallen et al., 2004). Cohesiveness of dough only is just influenced by soybean protein (Marco and Rosell, 2008). Legumes such as soybean and chickpea are active in emulsifying properties and its stability (Tömösközi et al., 2001).

Since dairy proteins such as whey proteins can be used as a protein source in dough. it has been also studied in details e.g. 4 % of sodium caseinate reduce extensibility compared to whey protein concentration which increase this characteristic (Kenny et al., 2001; Rostami et al., 2012). Addition of dairy products also enhances the mouth feel viscoelasticity of dough and overall properties of dough (Ahlborn et al., 2005; Gallagher et al., 2004; Moore et al., 2006; Schober et al., 2005).

Starch. After cellulose, the most occurring carbohydrate is starch which present mostly in endosperm (Kulp, 1972). Starch, due to retrogradation properties, is the reason of staling in texture. Indeed, the non-crystal part of starch which so called amylose is responsible for staling. Depending on the type of mixing material, some different physiochemical and microbiological phenomenon occur in kneading stage. The process of bread making is started by mixing continued by development stage in which manifestation of elasticity introduced via appearing a smoothly surface due to removing of water from surface.

Humectants. The role of some additives is to enhance machining properties and texture of breads (Ribotta et al., 2008; Barcenas and Rosell, 2006, 2007; Azizi et al., 2003; Caballero et al., 2007).

Due to hygroscopic properties of humectants such as sorbitol, Glycerin etc, they have the capability of controlling aquatic systems in dough structure.

Fat replacer. The most challenging part of using fat replacer is their possibility embodying dough, mouth feel and other desirable rheological properties.

Fat replacers such as maltodextrins , with no side effects, create lubricant properties of dough (Yackel and Cox, 1992). Polyxdestroe participates in mouth feel and creaminess properties (Mitchell, 1996). Some other fat replacers are inulin and Simplese effects on modulus of dough. (O'Brien et al., 2003). Fat replacers such as maltodextrins , with no side effects, create lubricant properties of dough (Yackel & Cox, 1992). Polyxdestroe participates in mouth feel and creaminess properties (Mitchell, 1996).

Enzymes. Enzymes are used in baking to improve dough handling properties and the quality of baked products. Double sulfide cross-linked affecting enzymes like Glucose oxidase are additives to consider far reaching effects in different level of additions on final dough rheological properties; for instance in high levels (Bonet et al., 2006).

CONCLUSION

Regarding the quality and quantity of each additive it must be noted that a wide range of compounds are available which has to be studied in details from not only the viewpoint of technically but deforming potentials of them. To date, addition of many additives to dough behavior characteristics have studied. But still more studies need to appear the microstructure, macrostructure, interactions even chemical and physical phenomenon.

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DOI <https://doi.org/10.18551/rjoas.2017-01.33>

EFFICIENCY ANALYSIS OF MEAT PROCESSING INDUSTRY IN INDONESIA

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ABSTRACT

This paper aims to analyze the efficiency of the meat processing industry in Indonesia large-scale and medium-year period 1990-2013. The method used data envelopment analysis (DEA) model of Variable Return to Scale (VRS) Input-oriented. It was found that, the estimation value Constant Return to Scale (CRS) model of efficiency with an average of 89.38 percent, which means that the industry is only able to optimize the resources available inputs to produce a production of 89.38 per cent, in other words there is still potential inputs that they can be optimized for 10.62 percent assuming all companies operating at an optimal scale. VRS model results by an average of 95.7 percent, which means that the efficiency is still below 100, there are inefficiencies at 4.3 percent, assuming the company is not operating at optimal scale due to factors existing constraints, medium scale efficiency (Scale) an average of 93.36 per cent less than 100 percent means that the industry is on a scale of inefficiency. The implications of negative growth efficiency or below 100 percent is the need for skills development of workers in order to adapt to technological upgrading and make the selection of efficient combination of inputs.

KEY WORDS

Efficiency, data envelopment analysis, variable return to scale, meat processing industry.

«It was inevitable that the future is in the processing industry,» this is what the statement C.P. Timmer, researcher of the Center for Development Global can ever Star Services for research on food security in Indonesia. Processing industry plays an important role in the nation's economy, including the meat processing industry. Meat processing industry is one of the food industry which contributes greatly to the economy (Lambert, 1994; Ali, 2007; Knudson, et al., 2010; Ali and Pappa, 2011).

According to BPS data (2015), the contribution to Gross Domestic Product of the meat processing industry each year has increased from 8.72 percent in 2007 to 56 percent in 2012, a share which is the 2nd highest of the food and beverage industry. The increase was not followed by the growth rate of the Gross Domestic Product of the industry continues to decline from 12.17 percent in 2007 to 1.13 percent in 2012. Growth in industrial processing and preserving of meat in Indonesia from 1985 to 2013 year average growth of about 26.6 per cent per year, the average workforce grew 8 percent and corporate units grew modestly around an average of 4 percent.

Problems of growth efficiency of the processing industry in Indonesia has become a concern among researchers in recent decades (see: Aswicahyono, 1998; Basri, 2001; Margono and Sharma, 2006; Modjo, 2007; Probowo and Cabanda 2011; Setiawan, 2013; and Surjaningsih and Permono, 2014). When the competition is going low, it will cause producers to operate inefficiently so that loss of efficiency and productivity (Gopinath, et al., 2002; Nurdianto, 2004).

Changes efficiency contributes to productivity growth as reported Saputra (2011), that in the period 1990-2001 subsector processing industry in general has high efficiency. Bappenas (2010) find the positive growth of technical efficiency, productivity growth in the processing industry the period 2000-2007. The same was reported Probowo and Cabanda (2011), in the period 2000-2005 the processing industry in Indonesia is experiencing technical inefficiency.

Various research efficiency of meat processing industrial has also been carried out in various countries with different results, such as, among others, by Xia and Buccola (2002),

which conducts research in the United States, found that the level of productivity of the meat processing industry decreased. Ali (2007) conducted a study in India found that in the period from 1980 to 2003 occurred inefficient use of capital and labor inputs and the low productivity growth. Nossal et al., (2008) conducted a study in Australia, found that the productivity of beef processing industry is increasing every year, driven by a combination of a moderate expansion of output and a decline in the use of multiple inputs.

Research is also being done in Europe, including in Ukraine, Goncharuk (2009) found increased growth of efficiency resulting from the reduction in the use of capital input, labor input. Keramidou et al., (2011) reported the results of his research on the meat processing industry in the period 1994-2007 Greece, find growth is inefficient use of capital and labor inputs. In Spain, Kapelko, et al., (2012) found that a decline in productivity driven by technical setbacks, despite the growth in technical efficiency and scale efficiency.

In connection with differences on the above results, this study will analyze the efficiency of the meat processing industry in Indonesia on period 1990-2013.

Theories efficiency first appeared in 1957, was Farrell with microeconomic study approach. In particular, Farrell (1957) describe new insights into two important things: how to define efficiency and how to calculate a measure of efficiency. In the approach to Farrell, the measurement of economic efficiency associated with use of frontier production function, contrary to the notion underlying performance largely econometric literature on production functions.

Farrell (1957) divides the efficiency of the company into two components, namely the technical efficiency and allocative efficiency. The two measures are then combined into economic efficiency (economic efficiency). Sengupta (1995) and Coelli, et al., (2005) divides efficiency into three components, namely allocative efficiency (AE), economic efficiency (EE) and technical efficiency (TE).

Allocative efficiency (AE) reflects the company's ability to optimize the use of inputs in optimal proportions given their respective prices and production technology. Economic efficiency (EE) is defined as the ability of a company to produce the quantity of output that has been determined by the minimum cost for a certain technological level. A company can be said to be economically efficient if the company can minimize the cost of production to produce a specific output with a level of technology that is commonly used as well as the prevailing market price. Technical efficiency is a measure of the company's success in producing a maximum output of the set of inputs available (Sengupta, 1995).

Efficiency can be estimated with parametric or nonparametric methods. The preferred method of estimation has become an issue of debate, with some researchers prefer nonparametric approach (Seiford and Thrall, 1990) and some researchers use a parametric approach. Parametric measurements including determining and estimating the stochastic frontier production or cost stochastic frontier in this method, the output (or cost) is assumed to be a function of the input (or output), inefficiency and random error. On the other hand, parametric frontier functions require the definition of a particular functional form for technology and for the inefficiency error term. Terms of the functional form causing the problem specification and estimation (Sengupta, 1987). Measurement of technical efficiency tends to be limited to technical and operational influence in the process of converting inputs into outputs. As a result, efforts to improve the technical efficiency requires only micro policy which is internal, namely the control and optimal resource allocation. In the economical efficiency, the price can not be considered given, because prices can be affected by macro policy.

Calculation of efficiency according to the Coelli Farrel, et al. (2005); Cesaro, et al., (2009), there are two approaches, with the approach of input and output approach. First, the input approach, we set a target output by selecting the input to a minimum. Input orientation emphasizes the question of how much the number of inputs can be reduced (reducing input) proportionally without changing the quantity of output produced. Second, the output approach to see how big an increase in the number of output without increasing the amount of use input. Orientation output emphasis on the question how much output can be increased (output expanding) proportionally without changing the number of inputs used.

According Coelli, et al., (2005), the output approach there are three types of additional output that constant return to scale, decreasing returns to scale, and increasing returns to scale. For input and output approach will provide similar technical efficiency calculations in the constant return to scale, but show different results in decreasing / increasing returns to scale. Efficiencies generated through the output approach indicates the amount of output can be increased without additional input.

Data Envelopment Analysis (DEA) is a mathematical program optimization method that measures the technical efficiency of a company and compares relative to other companies. DEA was originally developed by Farrell (1957), which measures the technical efficiency one input and one output, into a multi-input and multi-output, using a framework of values relative efficiency as a ratio of input (single virtual input) to output (single virtual output) (Giuffrida & Gravelle, 2001). Initially, DEA popularized by Charnes, et al., (1978) by the method of constant returns to scale (CRS) and developed by Banker et al., (1984) for variable returns to scale (VRS), which eventually famous models CCR and BCC.

The main advantage of DEA is easy to use by combining multiple inputs and outputs to calculate technical efficiency. DEA models can generate new alternatives to improve performance compared to other techniques. Linear programming is the backbone of DEA methodology that is based on the optimization platform. DEA is different from other methods in identifying ways of optimal average performance.

METHODOLOGY OF RESEARCH

The Scope of Research. The scope of this study industrial processing and preservation of meat in Indonesia large scale and are using the categories Classification of Indonesian Business Field (KLUI) 1990 with code 31 112, Standard Industrial Classification of Indonesia (ISIC) 1998, 2000, 2005 with the code 15112 and ISIC 2009 with 10130 code.

Types and Sources of Data. The data used in this research is time series data processing and preservation of meat industry in Indonesia are derived from the annual survey data Large and Medium Manufacturing Statistics Indonesia-year period 1990-2013 were not published. Chosen in 1990 as in 1990 the state of Indonesia first began importing cattle that became the beginning of the meat processing industry uses imported beef. Chosen in 2013 as the last year's research data due consideration of the availability of annual survey data for 2013 BPS only available in May 2015.

Data used in the study includes data input and output as well as the value of imports. Input and output variables are used, among other things: The cost of raw and auxiliary materials (raw materials); Spending on labor; Electric power purchased by the industry; Spending fuels and lubricants industries; Other expenses consist of cost of capital lease; The output value is the output value of the meat processing industry

Analysis method. The model was developed by Banker, Charnes, and Cooper (model BCC) in 1984 and is a development of the model CCR. This model assumes that the company is not yet operating at optimal scale. The assumption of this model is that the ratio between the input and output additions are not the same (variable returns to scale). That is, the addition of x times the input will not cause output increased by x times, can be smaller or larger than x times. Banker, Charnes and Cooper (1984) have extended measurement DEA method for the case of variable returns to scale (VRS). This model distinguishes between pure technical efficiency and scale efficiency (SE), identify whether increasing, decreasing or constant returns to scale are found. As a result, assuming a linear CRS should change by adding a further convexity constraint $\sum \lambda = 1$, therefore, form-oriented VRS DEA model inputs specified as:

$$\begin{aligned} &TE \text{ vrs } \Theta, \lambda = \min \Theta \\ &st - y_i + Y\lambda \geq 0 \\ &\Theta x_i - X\lambda \geq 0 \\ &\sum \lambda = 1, \lambda \geq 0 \end{aligned} \quad (1)$$

where N_1 is an $N \times 1$ vector of satu. θ is the input value of technical efficiency under VRS, has a value of $0 \leq \theta \leq 1$. As in the previous case, if the value of θ is equal to one, the company was on the frontier, while λ vector is $N \times 1$ vector of weights that define a linear combination of the company's enterprise- i . Karena to VRS DEA model is more flexible and enveloping data in a way that is more stringent than the CRS DEA model, the value of the VRS technical efficiency is equal to or greater than the value of CRS technical efficiency, This influence can be used to measure the scale of business efficiency:

$$SE = TE_{CRS} / TE_{VRS} \quad (2)$$

$SE = 1$ means the scale of efficiency or $SE < 1$ indicates scale inefficiency that could be caused by increasing or decreasing returns to scale. As a result, some of the VRS units that can efficiently be inefficient under the scheme CRS because the size deviates from the optimum scale. The weakness in this procedure is that it can give an indication whether the company operates under increasing or decreasing returns to scale. This can be determined by calculating the equation additional DEA - increasing returns to scale (NIRS). Model VRS DEA previously can be changed by changing the boundaries $N_1' \lambda = 1$ with $N_1' \lambda \leq 1$ and other surfaces that will be able to distinguish between the different scales in the structure of production. In particular:

- if $TE_{NIRS} = TE_{VRS} \neq TE_{CRS}$ the units producing in decreasing return to scale;
- if $TE_{NIRS} \neq TE_{VRS} = TE_{CRS}$ the units producing in increasing returns to scale;
- if $TE_{NIRS} = TE_{VRS} = TE_{CRS}$ the production unit at constant return to scale.

RESULTS AND DISCUSSIONS

The efficiency value of this research is the value obtained from the technical efficiency estimation using Data Envelopment Analysis method -Variable Return to Scale (DEA-VRS) input oriented. Table 4.1 of the visible results of DEA-VRS input oriented that the overall value of the average efficiency of industrial processing and preservation of meat in Indonesia period 1990-2013 CRS model with an average of 89.38 percent, which means that the industry is only able to optimize resource input available to generate production by 89.38 percent in other words, there is still potential inputs that they can be optimized by 10.62 percent, assuming all companies operating at an optimal scale. VRS model results by an average of 95.7 percent, which means that the efficiency is still below 100, there are inefficiencies at 4.3 percent, assuming the company is not operating at optimal scale due to factors existing constraints, medium scale efficiency (Scale) an average of 93.36 per cent less than 100 percent means that the industry is on a scale of inefficiency. The implications of negative growth efficiency or below 100 percent is the need for skills development of workers in order to adapt to technological upgrading.

From Table 1 also shows that the minimum value interval efficiency value VRS models of 85.4 percent and a maximum value of 100 percent, with a standard deviation of 4 percent which means that there are differences in sample value to the value of the average of 4 percent during the study period. The estimation results of the efficiency as follows: Under the conditions of return to scale industries during the study period of 1990-2013, there are 18 units of the company each year during the study period conditions return to scale is at $\lambda > 1$ means that the degree of change in output as a result of changes in input called the degree of acquisition ascending (increasing returns to scale). This condition can occur due to the increased scale of operations, occurs due to specialization of tasks and functions, as well as the use of special machines that are more productive and related to the liberalization policy in the industry especially in 1986 whose effects are still felt the time until the moment before the economic crisis of 1997 / 1998. The number of technology and innovation as well as investment and the stable economic conditions contributed to the growth of the industry not to mention the meat processing industry.

Table 1 – Values Efficiency and Preserving Meat Processing Industry for the Period of 1990-2013*

Period	Efficiency (percent)			IRS (Unit)	CRS (Unit)	DRS (Unit)
	CRS	VRS	Scale			
1990-1992	85,07	90,81	93,68	18	0	0
1993-1995	98,72	99,71	99,01	23	0	1
1996-1998	94,08	99,06	94,97	21	0	2
1999-2001	86,04	96,37	89,28	18	2	3
2002-2004	85,6	93,72	91,34	13	1	5
2005-2007	89,7	97,06	92,42	21	2	5
2008-2010	90,52	96,21	94,09	21	1	7
2011-2013	85,29	92,61	92,1	12	3	14
Average	89,38	95,7	93,36	18	1	5
Std. Dev		4,0				
Minimum		85,4				
Maximum		100,0				

Description:

Scale = Scale Efficiency = crs/vrs

CRS = Constant Return to Scale

VRS = Variable Return to Scale

IRS = Increasing Return to Scale

DRS = Decreasing Return to Scale

Tech = Technology

*Source: Estimation Result

From the above results it appears that a drop in efficiency from the period 1993-1995 amounted to 99.71 per cent to 92.61 per cent in 2011-2013 period. The condition is the same as the results of technical efficiency of food processing industries in Indonesia are conveyed by Margono and Sharma (2006) in the period from 1993 to 2000, and Ikhsan (2007) in the period 1988-2000, which found that the level of efficiency in the food processing industry Indonesia has decreased.

Periodically, in the period of 1990-1992 the average efficiency of 85.07 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry amounted to 14.93 percent, assuming all companies operating at an optimal scale. VRS model of efficiency average of 90.81 percent, meaning that it is still possible for the company or the industry to further increase its technical efficiency by reducing the level of technical inefficiency in the use of inputs by reducing the use of raw material inputs and fuel, electricity and other expenses that occur excessive use of 9.19 per cent, assuming the company is not operating at optimal scale due to factors constraints. Overall the 1990-1992 period were on a scale of inefficiency because efisiensi skala value by an average of 93.68 percent, still below 100 percent. This condition may occur related to the liberalization policy in the industry especially in 1986 whose effects are still felt the time until just before the financial crisis. The number of technology and innovation and investment that support the industry at that time have not been fully utilized by the meat processing industry. The low labor skills possessed in using technology.

This is consistent with reports Priyanto (2005), the condition of the period 1990-2000 is the implementation of policy finance minister in 1989 that lowered import tariffs on beef. This condition, in which industrial processing and preservation of meat that began using imported meat as raw materials benefited from the imposition of import tariffs on meat decreased from 40 percent in 1989 down to 5 percent in 2000. At the time of the imposition of high import tariffs in 1989 to 40 percent, it also affected the price of imported meat but the meat processing industry is still largely domestic beef used as a raw material. Along with a reduction in tariffs and the price of imported meat imports have also increased the composition of meat used as a raw material. It contributed to the establishment of conditions that efficient in terms of cost on industrial processing and preservation of meat in Indonesia.

In the period 1993-1995 the average efficiency of 98.72 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry by 1.28 percent with the assumption that all companies operating at an optimal scale. VRS model of efficiency average of 99.71 percent, meaning that there is still potential to improve

efficiency by optimizing the use of inputs by 0.29 per cent, assuming the company is not operating at optimal scale due to factors constraints. Overall the 1993-1995 period were on a scale of inefficiency because of the value scale of an average efficiency of 99 percent, is still below 100 percent. Conditions return to scale is at $\lambda > 1$ means that the degree of change in output as a result of changes in input called the degree of acquisition ascending (increasing returns to scale).

In the period 1993-1995 there was an increase of efficiency when compared to the previous period but still not efficient. The condition can occur due to the processing of the meat processing industry going technology development and orientation of higher capital compared with other food industry, so that the meat processing industry has increased the efficiency of the previous period. This condition is consistent with the reports Tanuwijaya and Sharma (2004) Aswicayono and Hill (2002), reported that productivity growth in the food processing industry that is driven by the positive contribution of the growth efficiency. Modjo (2006) reported that the productivity of the industry declined in the period from 1990 to 1995 but there has been growth in efficiency. In the period 1990-1995 the initial process of learning by doing in adopting the technology because the company is not operating at full production capacity. This production growth is a positive contribution of the growth of efficiency changes.

In the period 1996-1998 the average efficiency of 94.08 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry at 5.92 percent with the assumption that all companies operating at an optimal scale. VRS model of efficiency average of 99.06 percent, meaning that there is still potential to improve efficiency by optimizing the use of inputs by 0.94 percent, assuming the company is not operating at optimal scale due to factors constraints. Overall the period 1996-1998 were on a scale of inefficiency due to efficiencies of scale value by an average of 94.97 percent, still below 100 percent. Conditions return to scale is at $\lambda > 1$ means that the degree of change in output as a result of changes in input called the degree of acquisition ascending (increasing returns to scale). These results are consistent with the results of Klein and Luu (2003) provide evidence of the influence of political factors with negative technical efficiency during the crisis of 1997-1998, and only after a positive growth in 1999. Bappenas (2010) also reported that the Indonesian processing industry in the period the period 1997/1998 inefficiency, as seen in the growth of productivity is lower than the period before the 1998 crisis.

Conditions in the period 1996-1998 as a result of rising prices of industrial raw materials due to inflation, but the effect on the efficiency is only down slightly from the period 1994-1996. Many companies are not operational during this period due to rising production costs and declining consumer purchasing power. Companies that can efficiently use a competitive advantage in lowering production costs to maximize utilization of its available resources. Companies that use imported inputs will bear a bigger impact on the rising cost of imported raw materials, which in turn will lower the efficiency.

In the period 1999-2001 the average efficiency of 86.04 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry amounted to 13.98 percent, assuming all companies operating at an optimal scale. VRS model of efficiency average of 96.37 percent, meaning that there is still potential to improve efficiency by optimizing the use of inputs by 3.63 per cent, assuming the company is not operating at optimal scale due to factors constraints. Overall the 1999-2001 period were on a scale of inefficiency due to efficiencies of scale value by an average of 89.28 percent, still below 100 percent. Toscale return conditions are at $\lambda > 1$ means that the degree of change in output as a result of changes in input called the degree of acquisition ascending (increasing returns to scale).

In the period of 1999-2001 is still a drop in efficiency compared to the previous period when the crisis of 1997-1998. This can happen still allegedly associated with the process of consolidation of economic policy following the crisis of 1998 and the instability of economic conditions. These results differ from the findings of Klein and Luu (2003), Margono and Sharma (2004), Modjo (2007) and Setiawan (2013) who found that after a period of crisis in

1997/1998 the food processing industry (meat) experienced positive growth efficiency. Differences in results can be caused because the industry is still able to take advantage of its resources efficiently, despite an unstable condition after the domestic political situation, high interest rates and the exchange rate access to financial resources is still low, as well as the practices and values managerial relatively not professional. The low value of the rupiah resulted only in capital input but although expensive raw material procurement can still be obtained, so that the industry can still increase productivity with the use of technological equipment and resources to the optimum.

In the period 2002-2004 the average efficiency of 85.6 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry amounted to 14.4 percent, assuming all companies operating at an optimal scale. VRS model of efficiency average of 93.72 percent, meaning that there is still potential to improve efficiency by optimizing the use of inputs by 6.28 percent, assuming the company is not operating at optimal scale due to factors constraints. Overall the 2002-2004 period are inefficiency due to efficiencies of scale value by an average of 91.34 percent, still below 100 percent. Conditions return to scale is at $\lambda > 1$ means that the degree of change in output as a result of changes in input called the degree of acquisition ascending (increasing returns to scale). The period 2002-2004 was a trend decline in efficiency compared to the previous period. This condition is similar to that found by Robiani (2008), Setiawan (2013), Ndari and Permono (2014), reported that the growth occurred in the period 2000-2004 efficiency.

This condition can occur because of changes in efficiency is strong in 2000-2004 associated with the ongoing consolidation after the financial crisis of 1998 aggravated domestic political conditions affecting the investment climate, making it difficult to increase investor confidence shown by the low growth and low investment realization investment. Slowing changes in technical efficiency means a decline in the production frontier, because of declining production capability of the machine. One possible reason is the interference with the machine as well as the high price of new machinery because of the low value of the rupiah against the dollar. The same results with a research report Bappenas (2010).

In the period 2005-2007, the average efficiency of 89.7 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry amounted to 10.3 percent, assuming all companies operating at an optimal scale. VRS model of efficiency average of 97.06 percent, meaning that there is still potential to improve efficiency by optimizing the use of inputs by 2.94 percent, assuming the company is not operating at optimal scale due to factors constraints. Overall the 2005-2007 period were on a scale of inefficiency due to efficiencies of scale value by an average of 92.42 percent, still below 100 percent. Conditions return to scale is at $\lambda > 1$ means that the degree of change in output as a result of changes in input called the degree of acquisition ascending (increasing returns to scale). In the period 2005-2007 the economy recovers. Meat processing industr efficiency showed a positive trend compared to the previous period despite higher interest rates and the exchange rate lower as well as access to financial resources is still low. Companies improve practices to optimize the use of technology and the value of managerial professionals to improve efficiency. These results are consistent with the findings of Setiawan (2013) and the National Development Planning Agency (2010). The company increased the efficiency of input use between, improve the layout of the production to shorten the switching between work stations, align the workflow in the workplace. Increased capital input engine and building a positive effect on the efficiency and productivity of the industry in this period.

In the period 2008-2010 the average efficiency of 90.52 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry amounted to 9.48 percent with the assumption that all companies operating at an optimal scale. VRS model of efficiency average of 96.21 percent, meaning that there is still potential to improve efficiency by optimizing the use of inputs by 3.75 per cent, assuming the company is not operating at optimal scale due to factors constraints.

Overall the 2008-2010 period were on a scale of inefficiency due to efficiencies of scale value by an average of 94.09 percent, still below 100 percent. Toscaleberada return

conditions at $\lambda > 1$ means that the degree of change in output as a result of changes in input called the degree of acquisition ascending (increasing returns to scale). In general, the industry is on the condition of increasing returns to scale (IRS), means it is still possible for the company to improve more technical efficiency by reducing the level of technical inefficiency in the use of input and take advantage of economies of scale.

In 2008 the global financial crisis which affects the overall economy is no exception processing and preserving meat industry which affect the cost of raw materials and capital goods. In addition to the result of the global financial crisis of 2008, also the impact of the application of the Regulation of the Minister of Agriculture No. 59 / Permentan / HK.060 / 8/2007 about the decline of the import quota beef up toward 10 percent. Rising prices of imported raw materials influence the decrease in efficiency (model VRS).

The results were the same as the Surjaningsih and Permono (2014), BPS (2015) and Sharif (2013) reported a decrease in the efficiency of the period 2008-2010 is the result of the increase of raw material usage and increase capital input. The condition occurs because of the increased consumption of raw materials and capital input will help drive production growth despite the global financial crisis. The industry is the only import-oriented so that by utilizing the domestic market alone is able to grow because only meet domestic needs.

In the period 2011-2013 the average efficiency of 85.29 percent CRS models, meaning that there is still potential to improve efficiency by optimizing the use of inputs in the industry amounted to 10.3 percent, assuming all companies operating at an optimal scale. VRS model of efficiency average of 92.61 percent, meaning that there is still potential to improve efficiency by optimizing the use of inputs by 2.94 percent, assuming the company is not operating at optimal scale due to factors constraints. Overall the 2011-2013 period were on a scale of inefficiency due to efficiencies of scale value by an average of 92.10 percent, still below 100 percent. Conditions return to scale is at $\lambda < 1$, the degree of change in output as a result of changes in input called the degree of acquisition decreased (decreasing returns to scale).

This condition occurs when the increase in output was less than the increase in inputs. Decreasing returns to scale may occur due to increased scale of operations, but the company will occur experiencing processed meat products are also factors that can increase the productivity of the industry. On the side of the change in efficiency is seen that the company is still visible in the process of learning by doing in adopting technology that has not been able to operate in full capacity, in addition to the many problems the economy is fueling inflation and rupiah exchange rate so that will affect the efficiency in the selection of inputs sourced from imports.

In the 2011-2013 upheaval in both industrial raw materials availability issues and pricing issues. The decline in imports resulting decreased availability of raw materials and price increases helped to provide impact for the processing industry is mainly a problem of cost efficiency. The costs incurred for raw material usage resulting in reduced efficiency. These results are consistent with reports Aswicayono and Hill (2002).

CONCLUSIONS

Meat processing industry in Indonesia experienced a significant productivity growth over the last two decades, but the contribution of growth efficiency is still low. Measurement of the value of efficiency in this study is the value obtained from the technical efficiency estimated by the method of Data Envelopment Analysis -Variable Return to Scale (DEA-VRS) input oriented. Based on estimates found that there are technical inefficiency average of 10.62 percent with a model of Constant Return to Scale (CRS) and 4.3 percent with a model of Variable Return to Scale (VRS). Scale efficiency average of 93.36 percent, meaning that there is still potential to increase the efficiency of scale in the meat processing industry amounted to 6.64 percent.

Inefficiency empirically analyzed by assuming that the industry is not operating at optimal scale in the production process due to factors existing constraints both micro- and macroeconomic. The analysis showed that the meat processing industry has been on a

scale of inefficient primarily due to factors related to the input of raw materials, capital and energy use and labor. This indicates that there has been use of inputs that have not fit in the meat processing industry. In order to improve the efficiency of the industry, these results are useful for policy makers and meat processors to work optimally in determining the combination of input, to rationalize the process of acquiring the output of input use, as well as to design the right policy framework to address the problems identified in the sector meat processing. The results showed that the industry needs to modernize production systems to improve the capacity utilization of input factors, especially of raw materials, capital and energy. the need to develop the skills of workers in order to adapt to the use of technology. The raw material is the composition of the biggest costs arising in the production, which is around 80 percent of production costs, is primarily a meat raw materials and auxiliary materials. Governments can help in the method of obtaining the raw material meat by shortening the supply chain for the meat processing industry.

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DOI <https://doi.org/10.18551/rjoas.2017-01.34>

**ВЛИЯНИЕ ПРЕПАРАТА ЭМИДОНОЛ НА ПОСТВАКЦИНАЛЬНЫЙ ИММУНИТЕТ
ПОРОСЯТ**

**EFFECT OF EMIDONOL'S PREPARATION ON POST-VACCINATION
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АННОТАЦИЯ

Неблагоприятные условия содержания животных и воздействие стрессоров приводят к изменению физиологических показателей и мобилизации защитных сил организма. Это ведет к снижению адаптационных возможностей организма, естественной резистентности и, как следствие, к повышению восприимчивости к инфекционным патогенам. Нами было изучено действие антиоксидантного препарата на напряженность поствакцинального иммунитета к вирусу классической чумы свиней. Исследования проведены на свиноводческом комплексе на 66 клинически здоровых поросятах со средней живой массой $12,9 \pm 0,7$ кг. Были сформированы две группы: контрольная и опытная. Опытной группе поросят вводили антиоксидантный препарат эмидонол 5% в дозе 10 мг/кг массы тела. Установлено, что у животных экспериментальной группы поствакцинальный иммунный ответ был более выражен, чем у поросят контрольной группы. Таким образом, применение антиоксидантного препарата эмидонол при выращивании поросят позитивно влияет на формирование поствакцинального иммунного ответа, что является предпосылкой к обеспечению эпизоотического благополучия.

ABSTRACT

Poor animal health, welfare and also unhealthy mental state lead to physiological changes and disrupt the homeostasis of the body. Compensation mechanisms might not successfully overcome the stressor effect and the body will be unable to maintain normal function. It can reduce immune resistance, increase reactive oxygen species generation and so predispose animals to disease. Therefore in a livestock breeding are used pharmacology treatments to prevent severe stressor effect and to stimulate vaccination. Thence we studied the effect of an antioxidant drug on animal respond to vaccination with vaccine against classical swine fever virus. Research was held on a pig-breeding complex. In this research were involved 66 clinically healthy crossbred piglets with average body weight $12,9 \pm 0,7$ kg. It was found that animals that were exposed to the drug at the dose 10 mg/kg had significantly higher immune response to classical swine fever after vaccination than animals without any drug administration. In conclusion, it is important that animals are in a state of good welfare to successfully respond to vaccination and antioxidant supplementation may help to maintain it.

КЛЮЧЕВЫЕ СЛОВА

Поросята, антиоксидант, вакцинация, иммунный ответ.

KEY WORDS

Piglets, antioxidant, vaccination, immune response.

Инфекционные заболевания препятствуют развитию отрасли свиноводства, что характеризуется серьезным экономическим ущербом животноводческим хозяйствам, складывающихся из затрат на ликвидацию очагов заболевания и проведение противоэпизоотических мероприятий. При особо опасных заболеваниях хозяйства закрывают на карантин, а животных и продукцию животного происхождения утилизируют [1–3]. Кроме того, многие инфекционные и инвазионные болезни животных являются антропозоонозами, опасными также и для человека. Возбудители могут передаваться при контакте с больными животными или через предметы ухода, алиментарным путём – в результате употребления в пищу продукции животного происхождения, а также другими способами. Поэтому недопущение распространения возбудителя и заболевания животных является важным звеном профилактических мероприятий в животноводстве. Одним из таких мероприятий является профилактическая иммунизация животных, используемая как для защиты здоровья самих животных, так и для защиты здоровья людей [4].

Установлено, что оптимальные условия содержания животных, обеспечивающие их благополучие и здоровье, могут повысить устойчивость к инфекционным заболеваниям. Напротив, неудовлетворительные условия содержания или стрессовые нагрузки могут снизить сопротивляемость организма и повысить предрасположенность животных к болезням, а также неблагоприятно повлиять на формирование поствакцинального иммунитета [5]. Кроме того, воздействие стрессора способствует выработке кортизола, снижающего пролиферативную активность Т-лимфоцитов в реакции бласттрансформации лимфоцитов и угнетающего восприимчивость мононуклеарных фагоцитов к лимфокинам, что, в свою очередь, неблагоприятно изменяет восприимчивость животных к патогенам и подавляет гуморальный иммунный ответ [6,7]. Таким образом, стрессоры, влияя на клеточный иммунный ответ, способны снижать напряженность иммунитета, в том числе эффективность вакцинации [8].

В связи с этим, в животноводстве применяются лекарственные препараты различных фармакологических групп для стимуляции поствакцинального иммунитета животных и повышения устойчивости организма к патогенам. С этой целью используют иммуномодуляторы, повышающие активность иммунокомпетентных клеток [9], адаптогены, повышающие неспецифическую сопротивляемость организма, а также антиоксиданты, снижающие процессы перекисного окисления липидов, неизбежно сопровождающие стрессовые нагрузки [10,11]. Одним из препаратов, обладающих антиоксидантными, антигипоксическими и мембранопротекторными свойствами является эмидонол 5%. Механизм его действия заключается в специфическом влиянии на энергетический обмен посредством ингибирования перекисного окисления липидов мембран клеток и связывания свободных радикалов.

Целью нашей работы являлось изучение действия антиоксидантного препарата на эффективность поствакцинального иммунитета поросят.

МАТЕРИАЛЫ И МЕТОДЫ ИССЛЕДОВАНИЙ

Исследования проведены в условиях свиноводческого комплекса на 66 клинически здоровых помесных поросятах обоего пола в возрасте 6 недель с живой массой $12,9 \pm 0,7$ кг. Методом случайной выборки были сформированы экспериментальная и контрольная группы, по 33 головы в каждой. Поросятам экспериментальной группы за 5 дней до вакцинации и 2 дня после вакцинации вводили ежедневно один раз в сутки внутримышечно препарат эмидонол 5% в терапевтической дозе 10 мг/кг массы тела животного. Поросята контрольной группы оставались интактными. В возрасте 6 недель была проведена вакцинация против классической чумы свиней (КЧС) культуральной сухой вирусвакциной, а в 14 недель – ревакцинация.

При исследовании оценивали физиологические параметры поросят и брали кровь из яремной вены для определения титра вирусспецифических антител (АТ) к оболочечному белку Е2 вируса классической чумы свиней. Лабораторные исследования проводили методом конкурентного иммуноферментного анализа (ИФА) с

использованием диагностического набора «КЧС-Серотест» (ООО «Ветбиохим», Москва), оптическую плотность измеряли при длине волны 450 нм на планшетном фотометре iMark (Bio-Rad, США). При коэффициенте ингибирования ($K_{\text{инг}}$) связывания конъюгата сывороточными антителами более 50%, пробу считали положительной. Анализ полученных данных проводили с помощью программы SPSS Statistics для Windows, версии 17.0. Различия между группами оценивали с использованием U-критерия Манна-Уитни. Статистическая значимость различий между уровнями признака в группах принималась при $p < 0,05$.

РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЙ И ИХ ОБСУЖДЕНИЕ

Результаты исследований сыворотки крови методом иммуноферментного анализа (ИФА) показали, что на 7-ой неделе после вакцинации все исследуемые образцы, полученные от поросят контрольной и экспериментальной групп, были положительными на наличие АТ к вирусу КЧС (таблица 1). В экспериментальной группе, где животные получали антиоксидантный препарат курсом 7 дней, величина $K_{\text{инг}}$ на 4% больше в сравнении с контрольной группой, что прямо пропорционально титру антител. Однако эта разница статистически незначима.

Таблица 1 – Динамика напряженности иммунитета поросят к вирусу классической чумы свиней после профилактической вакцинации*

Неделя исследования	7 неделя		11 неделя	
Группа	К	Э	К	Э
Положительные результаты, %	100	100	100	100
Отрицательные результаты, %	0	0	0	0
Коэффициент ингибирования, % ($M \pm m$)	98,2 \pm 6,3	102,4 \pm 2,4	97,8 \pm 13,3	106,1 \pm 2,0**
Оптическая плотность образцов ($M \pm m$)	0,216 \pm 0,084	0,160 \pm 0,079	0,223 \pm 0,177	0,111 \pm 0,027*

* К – данные контрольной группы, Э – данные экспериментальной группы. Данные представлены в виде $M \pm m$ (среднее значение \pm стандартное отклонение). Статистически значимое отличие по методу U-критерия Манна-Уитни от показателей контрольной группы при * $p < 0,05$, ** $p < 0,06$.

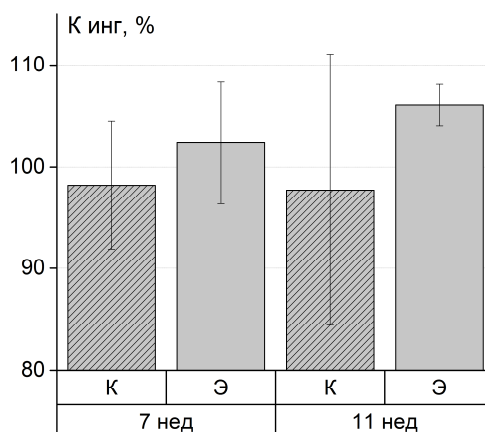


Рисунок 1 – Диаграмма динамики напряженности иммунитета поросят после профилактической вакцинации (Каждый столбец соответствует $K_{\text{инг}}$, полученному от подопытных групп; концы рисок обозначают стандартное отклонение. К – данные контрольной группы, Э – данные экспериментальной группы)

На 8-й неделе после вакцинации животные были ревакцинированы, а на 11-ой неделе после первой вакцинации было произведено повторное взятие образцов крови животных и их исследование методом ИФА. В результате установлено, что все полученные образцы были положительными на наличие АТ к оболочечному белку вируса КЧС. Примечательно, что в образцах, полученных от животных экспериментальной группы, средняя величина оптической плотности была меньше в 2 раза, чем в образцах от контрольных животных, что обратно пропорционально титру

АТ [13]. Величина $K_{инг}$ в образцах экспериментальной группы, напротив, была больше на 8% в сравнении с контрольной группой, что прямо пропорционально титру АТ (рисунок 1).

Таким образом, согласно результатам ИФА, во все сроки исследований, у всех подопытных животных был уже сформирован поствакцинальный иммунный ответ к вирусу КЧС. Однако у животных экспериментальной группы средняя величина $K_{инг}$, характеризующая титр АТ, была выше, чем у животных контрольной группы. На 7-ой неделе после вакцинации эти различия были несущественны, а на 11-ой неделе эта разница была статистически значима. Следовательно, у животных, получавших препарат, поствакцинальный иммунный ответ был более выражен, чем у животных, остававшихся интактными.

Заключение. В результате проведенных исследований установлено, что применение антиоксидантного препарата эмидонол 5% в течение 7 дней в рекомендуемой дозе 10 мг/кг массы тела при проведении профилактической иммунизации поросят является целесообразным. Во все сроки исследований – 7 и 11 неделя после вакцинации – в группе поросят, получавших препарат, поствакцинальный иммунный ответ к вирусу классической чумы свиней был более выражен, чем у животных, остававшихся интактными. Таким образом, применение антиоксидантного препарата эмидонол в цикле выращивания поросят позитивно влияет на повышение иммунного ответа на вакцинацию, что является предпосылкой к обеспечению эпизоотического благополучия.

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DOI <https://doi.org/10.18551/rjoas.2017-01.35>

**КЛИНИКО-МОРФОЛОГИЧЕСКОЕ ОБОСНОВАНИЕ КЛАССИФИКАЦИИ
ЯЗВЕННОГО КЕРАТИТА У ЛОШАДЕЙ**
CLINICO-MORPHOLOGICAL SUBSTANTIATION OF CLASSIFICATION
OF HORSES' ULCERATIVE KERATITIS

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АННОТАЦИЯ

Язвенные кератиты регистрируются у животных в большинстве стран мира и местами они имеют довольно значительное распространение. Проводилось изучение целого ряда признаков характеризующих больных лошадей с язвенным кератитом. Учитывая, что патология органа зрения встречается у животных различных возрастных групп, принадлежащих к обоим полам, для проведения исследования была отобрана группа животных в количестве 40 лошадей, находящихся на частных конюшнях Москвы и Московской области. Работа представляет клинико-морфологическое исследование, в котором наряду с офтальмологическими методами использован комплекс цитологического и бактериологического исследования. Выявлено, что язвенный кератит у лошадей развивается либо после незначительных повреждений роговицы остью злаков, шелухой семян, листьями (растительным материалом), опилками, которые служат подстилкой и дальнейшего присоединение гнойной инфекции, а также в результате длительного применения антибиотиков, кортикостероидов, либо при инфицировании дистрофически измененной роговицы при нарушении в ней микроциркуляторных процессов.

ABSTRACT

Ulcerative keratitis is common animal disease, which is reported from all over the world and has quite a wide spread in some regions. A number of typical symptoms of ulcerative keratitis of sick horses were investigated in current research. It was found that pathology of the eyes can be observed in animals of different age groups belonging to both genders. A group of 40 horses owned by private stables of Moscow and Moscow region was selected to conduct the study. Current research was a clinical and morphological investigation, which included both ophthalmic method and a set of cytological and bacteriological examinations. Ulcerative keratitis of horses can be either a result of a minor injury of the cornea caused by awn grasses, seed hulls, leaves, sawdust and further bacterial infection development, prolonged use of antibiotics/corticosteroids or when dystrophic cornea is infected due to the microcirculatory processes disorder.

КЛЮЧЕВЫЕ СЛОВА

Язва роговицы, васкуляризация, лошадь, язвенный кератит.

KEYWORDS

Ulcer of the cornea, vascularization, horse, ulcerative keratitis.

Язвенный кератит, одно из часто встречающихся заболеваний у лошадей, сопровождающееся глубоким паренхиматозным сосудистым кератитом, изъязвлением роговицы [1,2,3,4,5]. Эти изменения зачастую приводят к абсцедированию роговицы и в конечном итоге при неправильном и несвоевременном лечении – полной потери зрения [6,7,8,9]. В работе представлена клинко-офтальмическая, цитоморфологическая логическая характеристика язвенного кератита у лошадей, свидетельствующая о наличии двух основных клинических форм течения: первичной, характеризующейся травматическим повреждением роговицы с дальнейшим развитием микрофлоры и вторичной, основанной на разрушении физиологических барьеров глазного яблока [9,10,11,12]. Представленная классификация основана на клинически обоснованных факторах риска возникновения и развития язвенного кератита, а также показателей функциональных тестов (тест Ширмера, проба по Норну) и витальных красителей, характеризующих степень выраженности и характер патологических изменений поверхности роговицы и конъюнктивы.

Первичная форма индуцированного посттравматическим развитием инфицированием роговицы, в то время как вторичная форма развивается на фоне присутствующих деструктивных изменений изучаемой оболочки глазного яблока. Выявленные клинко-морфологические параллели клинически обособленные факторы риска возникновения и развития видовой состав микрофлоры позволили научно обосновать и внедрить в ветеринарную практику две схемы лечения, направленные при первичной форме на купирование инфекции, отторжение и эвакуацию некротических тканей (1 этап), подавлении остаточной инфекции и стимуляцию репаративных процессов (2 этап), стимуляцию реорганизацию рубцового помутнения (3й этап). При вторичной проводили общее системное и местное поэтапное лечение, заключающееся в восстановлении стабильности прекорнеальной слезной пленке и повышения общей слезопродукции (1 этап), стимуляцию репаративных процессов (2 Этап). Критериями оценки эффективности проводимого лечения явилась сравнительная характеристика рубцовых помутнений, основанная на различных типах эпителизации и рубцевания.

Язвенный кератит лошадей развивается либо после незначительных повреждений роговицы (остью злаков, шелухой семян, опилками и др.) и дальнейшего присоединения гнойной инфекции, кокковой флоры, синегнойной палочки, протей, грибов, а также в результате длительного применения антибиотиков, кортикостероидов [13,14]. Особая роль в возникновении язвенного кератита некоторые авторы отводят снижению физиологических барьеров глазного яблока, при инфицировании дистрофически измененной роговицы. Виды микроорганизмов варьируют в зависимости от сезона и географической зоны. Например, у лошадей в США, *Fusarium* sp. *Aspergillus* sp. два основных наиболее частых причин, вызывающих грибковый кератит. Кроме того авторы описывают высокую патогенность *Pseudomonas*. Исследования, проведенные в России установили частоту выделения патогенной микрофлоры (*Staphylococcus aureus* *Pseudomonas aeruginosa*). Причиной возникновения язвенных процессов роговицы являются травмы. Нередко назначаемые антибактериальные препараты не оказывают положительного влияния, а наоборот ухудшают состояние глаза, так как в конъюнктивальном мешке находится возбудитель нечувствительный к антибиотикам. Анатомо-физиологические особенности расположения роговицы, находящейся под постоянным воздействием на нее самых разнообразных и агрессивных факторов позволило определить высокий риск ее повреждения и опасность развития в ней гнойно-язвенных процессов [15,16]. Тем более что в начале заболевания не всегда присутствуют клинические признаки увеита. Состояние ухудшается после применения антибиотиков системно. Заболевание прогрессирует медленно, в этом заключается основная опасность. Восстановление многослойного плоского эпителия может привести к изоляции микроорганизмов в строме и образованию глубокого интерстициального кератита. Следующая за этим глубокая и поверхностная васкуляризация, обширные интрастромальные поражения,

воспаление конъюнктивы, отек роговицы. Осложнением являются абсцессы роговицы, (микроабсцессы), прободение стромы и перфорация роговицы [17].

МЕТОДЫ ИССЛЕДОВАНИЙ

Для диагностических исследований применяли комплекс методов, включающих, общее клиническое обследование повреждения, гематологические исследования, бактериологическое исследование смыва из конъюнктивальной полости, цитологическое исследование мазков-отпечатков с поверхности роговицы. Клинический статус животного оценивали по общепринятым методикам. При исследовании зоны патологического процесса проводили офтальмологическое обследование, включающее клинические методы структурного состояния органа зрения, осмотр при боковом фокальном освещении и офтальмоскопии. Критериями при этом служили форма и положения век, состояние кожных покровов, функция мышечного аппарата, форма и величина глазной щели. При исследовании конъюнктивы оценивали ее цвет, влажность, количество и характера выделяемого из конъюнктивальной полости. При осмотре роговицы определяли ее форму (сферичность), прозрачность, влажность, зеркальность, наличие васкуляризации, пигментации, рубцовых изменений и изъязвлений. Дополнительную информацию о состоянии роговицы получали при использовании витальных красителей (1 % раствор флюоресцина, 1% раствор бенгальского розового, 3 % лиссаминового зеленого). Флюоресциновой пробой определяли дефекты в эпителиальном слое роговицы, 1% бенгальским розовым и 3% лиссаминовым зеленым выявляли лишенные муцинового покрытия, погибшие и дегенерировавшие, но еще присутствующие на поверхности роговицы клетки. Для определения суммарной слезопродукции использовали функциональный тест Ширмера. С этой целью рабочий конец тест полоски (5 мм) сгибали на маркированном конце под углом 40-45 градусов и помещали в нижний конъюнктивальный свод в наружной трети глазной щели. При этом перегиб лежал на краю века, а загнутая часть полоски не касалась конъюнктивы. Лошади закрывали глаз, через минуту извлекали тест полоску и сразу же учитывали результат, измеряя длину увлажненного участка от линии изгиба. Оценку состояния прекорнеальной слезной пленки проводили с помощью пробы по Норну. В нижний свод конъюнктивальной полости вводили 1 каплю флюоресцина натрия, после чего определяли время от последнего моргания до появления в подкрашенной слезной пленки разрыва, имеющего вид черного пятна или щели на поверхности роговицы [18,19]. Бактериологические исследования проводили с использованием универсальных питательных сред: мясopептонного бульона, мясopептонного агарa, специальных диагностических сред. Культивирование проводили при t^0 35-37 $^{\circ}$ C в течение 24 часов, грибов при t^0 25-28 $^{\circ}$ C дрожжеподобных в течение 1-4 суток, плесневых 3-10 дней. После культивирования с выросших колоний делали мазки. Для определения тинкториальных и морфологических свойств изолированных колоний применяли окраску мазков по Грамму и Романовскому - Гимзе и микроскопировали (90 \times 10), плесневые грибы микроскопировали в препарате «раздавленная капля» - мицелий грибов помещали в каплю жидкости (спирт, глицерин, вода в равных объемах) расправляли препаровальной иглой, накрывали покровным стеклом и микроскопировали при увеличении 40 \times 10 с опущенным конденсором. Цитоморфологическое исследование мазков отпечатков осуществляли по Голикову А.Н. Для этого мазок отпечаток с поверхности роговицы фиксировали раствором эозин метиленового по Май - Грюнвальду в течение 90 минут. Фиксированный препарат окрашивали раствором азур-эозина по Романовскому - Гимзе в течение 90 минут. Светооптическое исследование проводили при увеличении 10 \times 90 (масляная иммерсия). Клеточный состав выражали в % подсчитывая до 100 клеток для более точного представления о динамике процесса в дефекте роговицы.

РЕЗУЛЬТАТЫ И ИХ ОБСУЖДЕНИЕ

Результаты анализа факторов риска возникновения и развития язвенного кератита свидетельствовали, что заболеванию подвержены лошади разного возраста. Клинические признаки и развитие воспалительного процесса в переднем отрезке глаза не зависели от возрастной характеристики животных. Установлено, что язвенными кератитами страдают лошади обоих полов и различной цветности. 23 лошади (57,5% случаев) составили самцы и 17 голов (42,5%) кобылы разных пород. Выявлено, что язвенный кератит у лошадей характеризуется сезонностью проявления: чаще всего он встречается в весеннее (40% случаев) и осеннее время года (40% случаев).

Важно также подчеркнуть, что устойчивость передней поверхности глазного яблока к повреждению зависела от состояния физиологических барьеров глаза, выполняющих защитную функцию. У 2 лошадей (6% случаев) в течение 4-5 месяцев наблюдали сухой кератоконъюнктивит со снижением слезопродукции и нарушением стабильности прекорнеальной пленки, что нашло подтверждение в показателях теста Ширмера и времени разрыва прекорнеальной пленки (проба по Норну). В тоже время у 3 лошадей (9%) с диагнозом аутоиммунный конъюнктивит на фоне повышения суммарной слезопродукции наблюдали нарушение функции прекорнеальной пленки.

Таблица 1 – Физиологические барьеры глазного яблока (% от общего числа животных)

Барьер	Кол-во больных животных (в абсолютных величинах)	Количество больных животных, %
Состояние конъюнктивы (аутоиммунный конъюнктивит)	3	9
Состояние роговицы	3	9
Состояние прекорнеальной пленки (сухой кератоконъюнктивит, тест Ширмера)	2	6
Эпифора (тест Ширмера)	6	16
Всего	40	100

Выявлено, что у 17 лошадей (42,5% случаев) факторами риска возникновения язвенных кератитов явились микротравма без инородного тела: удар хлыста, накол остью травы; у 4 лошадей (10% случаев) травма с инородным телом: опилки, солома, ости злаков; у 2 лошадей (5% случаев) постконтузионная эрозия роговицы; у 10 лошадей (25% случаев) фоновые заболевания глаз: аутоиммунный конъюнктивит, сухой кератоконъюнктивит, воспаления и раны век, мейбومیит, эпифора; у 7 лошадей (17,5% случаев) неблагоприятные условия кормления и содержания животных: повышенная влажность воздуха, отсутствие вентиляции в помещении конюшни, плохого качества подстилка.

Развитию заболевания у 20 лошадей способствовали снижение общей резистентности организма: из них 6 лошадей (14% случаев) болели лептоспирозом и 5 лошадей - ринопневмонией (13,5% случаев); у 9 лошадей (22,5% случаев) дефект ткани роговицы наблюдали в поствакцинальный период, у всех вакцинированных животных наблюдали повышение общей температуры, отказ от корма, угнетение, отек дистальных отделов конечностей. У 7 лошадей (17,5% случаев) развитию язвы роговицы способствовала неправильная и поздняя диагностика заболевания, а у 4 лошадей (10% случаев) - бессистемное применение антибиотиков и кортикостероидов. У 9 лошадей (22,5% случаев) в анамнезе были общесоматические (язвенный гастрит, гепатит алиментарного происхождения, болезни почек) заболевания. Изучение клинической картины язвенного кератита у лошадей основывалось на результатах анализа клинических факторов риска возникновения и развития язвенного кератита у лошадей. Травматическое повреждение роговицы с последующим обсеменением микрофлорой в одном случае и дистрофические и дегенеративные процессы во втором случае, приводили к нарушению метаболических и микроциркуляторных процессов в роговице с дальнейшим распадом ее ткани.

Выявлено, что клинические формы течения язвенного кератита лошадей характеризуются полиморфизмом, при этом установлены патогномоничные признаки, затрагивающие передний отрезок глаза и характеризующиеся нарушением целостности, гладкости и сферичности, прозрачности, блеска и зеркальности роговицы.

При первичной форме язвенного кератита выявлено острое течение воспаления переднего отрезка глаза с вовлечением в патологический процесс радужной оболочки – у 18 лошадей (90% случаев) наблюдали миоз радужной оболочки. У животных наблюдали блефароспазм (20 лошадей, 100% случаев), гиперемия и отек век выявлены у 12 лошадей (60% случаев), перикорнеальную инъекцию сосудов вокруг роговой оболочки у 10 лошадей (50%), смешанную инъекцию сосудов глазного яблока у 15 лошадей (75%), обильное выделение серозно-слизистого экссудата у 8 лошадей (41% случаев), слизисто-гнойного у 10 лошадей (50% случаев) и гнойного у одной (5% случаев) из конъюнктивальной полости. Нарушение гладкости, сферичности и прозрачности роговицы наблюдали у 20 лошадей (100% случаев), стромальную язву роговицы, снижение функции зрения на фоне развившегося язвенного кератита у 13 лошадей (65% случаев). У 20 лошадей (100%) развивалась поверхностная васкуляризация роговицы. Поверхностные сосуды распространялись через лимб на роговицу, древовидно ветвились, анастомозировали между собой и располагались в поверхностных слоях роговицы под эпителием, они были ярко – красного цвета. Помутнение роговицы наблюдали у 20 лошадей (100% случаев), его основой являлся инфильтрат, причем, у всех исследованных животных на краях язвы помутнение было выражено сильнее, чем в центре, особенно на одной стороне. Этот край был подрыв и указывал направление прогрессирования язвы (прогрессирующий край). Роговица была тусклой, матовой, а в месте воспаления – шероховатой.

Осложнением течения язвенного кератита лошадей, явилось развитие абсцесса роговицы [20,21,22]. Первоначально воспаление роговицы незначительное, поскольку многослойный плоский эпителий характеризуется высокой регенераторной способностью, и быстро восстанавливает свою структуру, при этом микроорганизмы или грибковая инфекция остаются в роговице. В месте прокола на 2 день после травмы визуализировали небольшое (2-3 мм) в диаметре помутнение серо-белого цвета, округлой формы. Острые клинические признаки воспаления переднего отрезка глаза развивались на десятый день после травмы. Общее состояние животного было угнетенным. Роговица приобретала желто-белый цвет. Обращала на себя внимание круговая периферическая поверхностная и глубокая васкуляризация, с осложнением при неправильной диагностике и лечении паноптальмита.

Диагностическими клиническими признаками при вторичной форме язвенного кератита являлось подострое или хроническое течение воспаления переднего отрезка глаза. У животных наблюдали незначительное выделение из конъюнктивальной полости серозного экссудата с налипанием его на ресницах. При вторичной форме язвенного кератита выявлена эрозия или язва роговицы с неровными краями, неправильной формы, нарушение гладкости, блеска, зеркальности у 20 лошадей (100% случаев) и прозрачности роговицы у 4 лошадей (20% случаев). Заживление роговицы протекало по типу как плоскостной эпителизации (80% случаев), так и по ангеогенному типу (20% случаев). Следует подчеркнуть, что помутнение роговицы как правило, было очаговое, ограниченное.

Таким образом, объективными диагностическими признаками первичной формы заболевания являются острое воспаление переднего отрезка глаза с нарушением целостности роговицы и вовлечением в процесс радужной оболочки, ее осложнением является стромальный абсцесс.

Диагностическими клиническими признаками при вторичной форме язвенного кератита служат подострое или хроническое течение воспаления переднего отрезка глаза со снижением общей слезопродукции, нарушением зеркальности, блеска и влажности роговицы, с образованием дефекта в месте стойкого ограниченного помутнения.

Таблица 2 – Особенности проявления клинической картины язвенного кератита лошадей

Симптомы	Первичная форма		Вторичная форма	
	Количество животных (абсолютное число)	Количество животных (относительное число), %	Количество животных (абсолютное число)	Количество животных (относительное число), %
Нарушение гладкости	20	100	20	100
Нарушение блеска	10	50	20	100
Нарушение зеркальности	20	100	20	100
Нарушение сферичности	20	100	-	-
Нарушение прозрачности	20	100	4	20
Светобоязнь и блефароспазм	20	100	10	50
Гиперемия и отек век	12	60	-	-
Миоз	18	90	-	-
Перикорнеальная инъекция сосудов роговицы	10	50	2	10
Смешанная инъекция сосудов глазного яблока	15	75	-	-
Васкуляризация, всего:	20	100	2	10
Из них:	20	100	2	10
поверхностные сосуды	20	100	2	10
глубокие сосуды	5	25	-	-
Серозно-слизистые истечения	8	41	5	25
Слизисто-гнойные истечения	10	50	1	5
Гнойные истечения	1	5	-	-
Снижение функции зрения	13	65	-	-
Помутнение роговицы (инфильтрат)	20	100	4	20
Всего	20	100	20	100

Сравнительный анализ микробного пейзажа конъюнктивальной полости у контрольных животных и лошадей, больных клинически разными формами язвенного кератита свидетельствует о зависимости формы течения язвенного кератита от характера микрофлоры, выделяемой из переднего отрезка глаза.

У здоровых лошадей рост смешанной микрофлоры и монокультуры составил 70% и 30% соответственно). При язвенном кератите наблюдали рост смешанной микрофлоры в 70% случаев и отдельных видов грибов в 30% случаев.

При первичной форме язвенного кератита в конъюнктивальной полости превалирует частота выделения патогенной и условно-патогенной микрофлоры: *Staphylococcus aureus*, *Streptococcus* spp., *Candida* spp., *Mucor* spp., *Pseudomonas aeruginosa*, *Candida albicans*, бактерии кишечной группы (*Escherichia*, *Klebsiella*, *Enterobacter*, *Salmonella*, *Shigella*), *Streptococcus pneumoniae*, *E. coli*, *Staphylococcus epidermidis*, *Diplococcus* spp., *Citrobacter* spp., *Bact. spp.*.

У лошадей с вторичной формой язвенного кератита в конъюнктивальной полости были обнаружены следующие микроорганизмы: *Candida* spp., *Mucor* spp., *E. coli*, *Bact. spp.*, *Klebsiella pneumoniae*, *Streptococcus* spp.. Из монокультуры в конъюнктивальной полости лошадей с вторичным язвенным кератитом нами был обнаружен грибок *Aspergillus flavus* [23,24].

Результаты цитоморфологического исследования мазков-отпечатков с язвы роговицы. Анализ результатов цитоморфологического исследования мазков-отпечатков с поверхности роговицы при первичной форме язвенного кератита свидетельствует о наличии в I фазе воспаления (1 и 2 стадии) воспалительного типа цитограммы, с доминированием в ней нейтрофилов (84-90%), из них 10% клеток находились в состоянии деструкции и аутолиза; моноциты составляли 5-16%; лимфоциты 5-8%. Анализ цитоархитектоники клеток в мазках-отпечатках свидетельствовал об остром воспалительном процессе.

В конце воспалительной фазы в очаге воспаления роговицы количество нейтрофилов уменьшилось до 65-80%, вместе с тем возросло представительство макрофагов до 5-10% и в мазках-отпечатках появились фибробласты и плазматические клетки.

Анализ мазков-отпечатков очага поражения роговицы выявил регенераторно-воспалительный тип цитограммы, который характеризовался уменьшением количества

нейтрофилов до 58-70%, появлением макрофагов (5-10%), фибробластов (15-20%), плазматических (2-7%), единичных эпителиальных клеток.

После организации грануляционной ткани во время II фазы 1 стадии процесс переходил во II фазу (2 и 3 стадии). У всех лошадей, при этом, был выявлен регенераторный тип цитограммы, который характеризовался уменьшением содержания нейтрофилов до 36-40%, увеличением фибробластов (36-47%), плазматических клеток (3-8%), гигантских многоядерных клеток (3-5%), пласты эпителиальных клеток.

Цитоморфологическое исследование мазков-отпечатков очага поражения роговицы в I фазе 1 и 2 стадии при вторичной форме язвенного кератита показало преобладание дегенеративно-воспалительного типа цитограммы, характеризующегося следующим клеточным составом: нейтрофилы 65-70%, при этом, 50% клеток из них находится в состоянии деструкции и аутолиза; моноцитов 4-9%, лимфоцитов 5-10%.

В конце воспалительной фазы течения язвенного кератита цитоморфологическая картина изменялась в направлении возрастания количества нейтрофилов до 70-75%, при этом, клетки с деструкцией и аутолизом наблюдались у 25% животных.

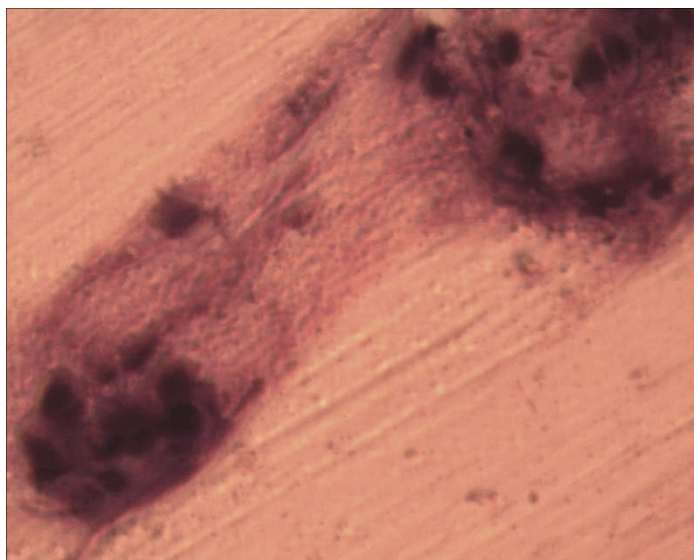


Рисунок 1 – Микрофото мазка-отпечатка поверхности роговицы при первичной форме язвенного кератита. Преобладание нейтрофилов среди клеточных элементов в мазке (воспалительный тип).

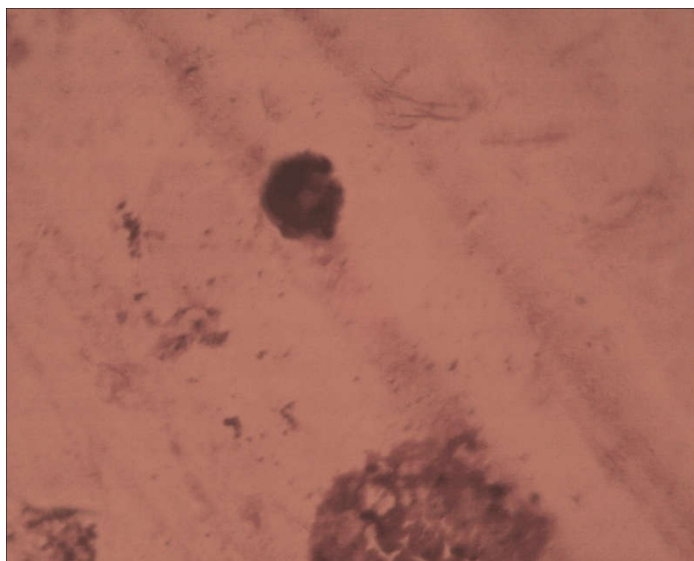


Рисунок 2 – Микрофото мазка-отпечатка поверхности роговицы при первичной форме язвенного кератита. Преобладание нейтрофилов среди клеточных элементов в мазке (воспалительный тип), а также дистрофически измененные клеточные элементы.

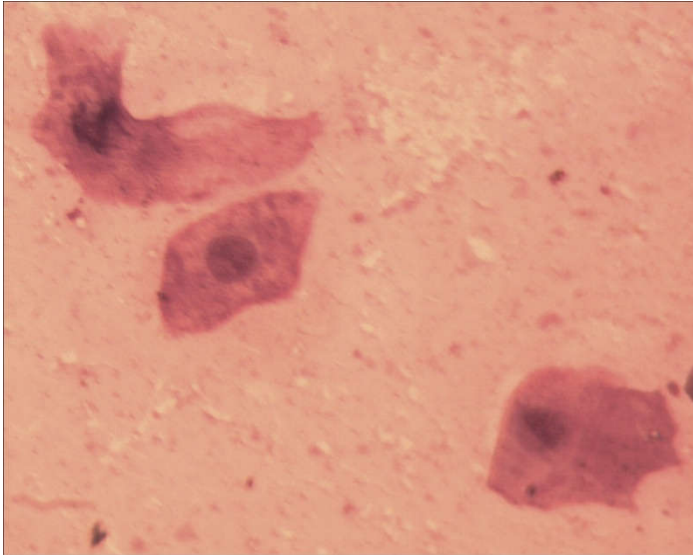


Рисунок 3 – Микрофото мазка-отпечатка поверхности роговицы при первичной форме язвенного кератита. В мазке появились клетки фибробластического ряда.

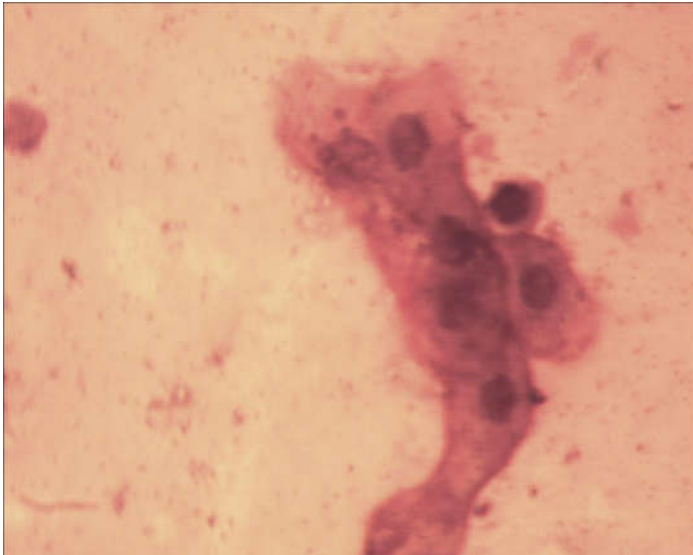


Рисунок 4 – Микрофото мазка-отпечатка поверхности роговицы при первичной форме язвенного кератита. В мазке-отпечатке появились пласты эпителия.

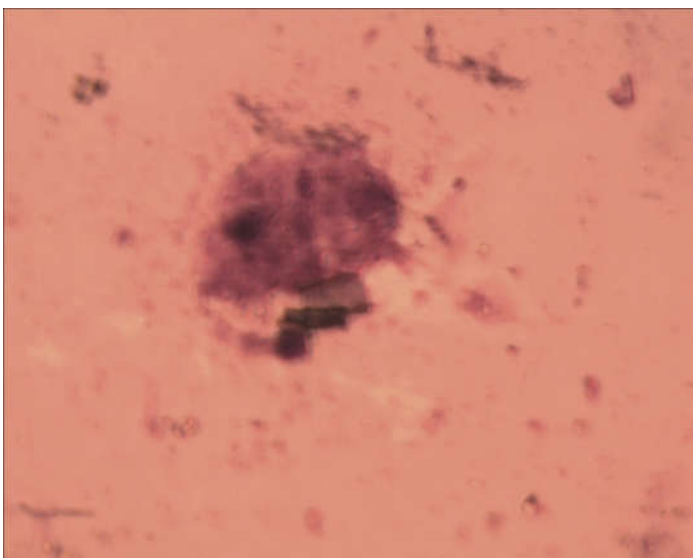


Рисунок 5 – Микрофото мазка-отпечатка поверхности роговицы при вторичной форме язвенного кератита. Дистрофически измененные клеточные элементы.

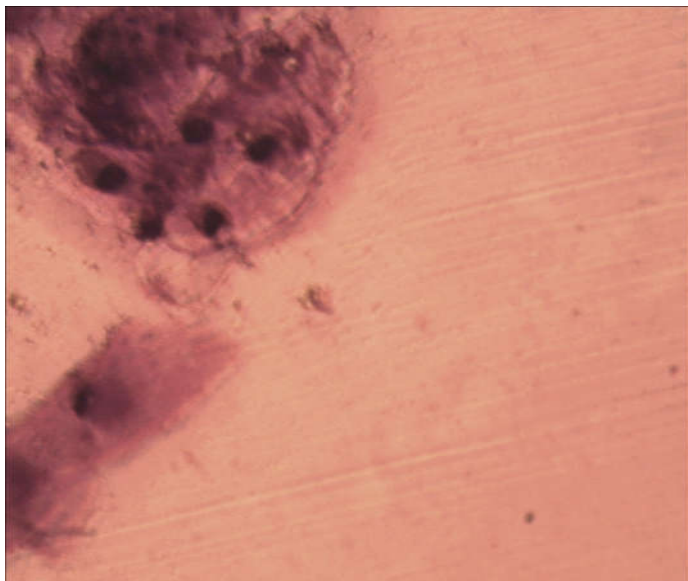


Рисунок 6 – Микрофото мазка-отпечатка поверхности роговицы при вторичной форме язвенного кератита. Среди остатков нейтрофилов группа клеток фибробластического ряда (регенераторно-воспалительный тип).

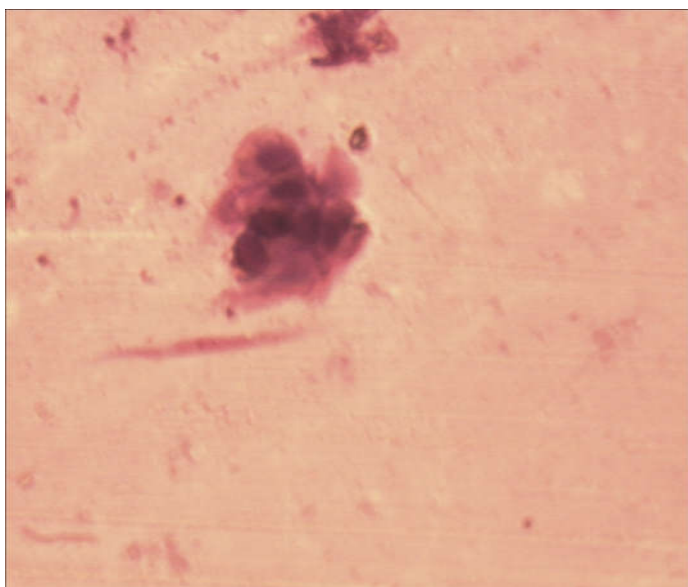


Рисунок 7 – Микрофото мазка-отпечатка поверхности роговицы при вторичной форме язвенного кератита. Группа клеток фибробластического ряда.

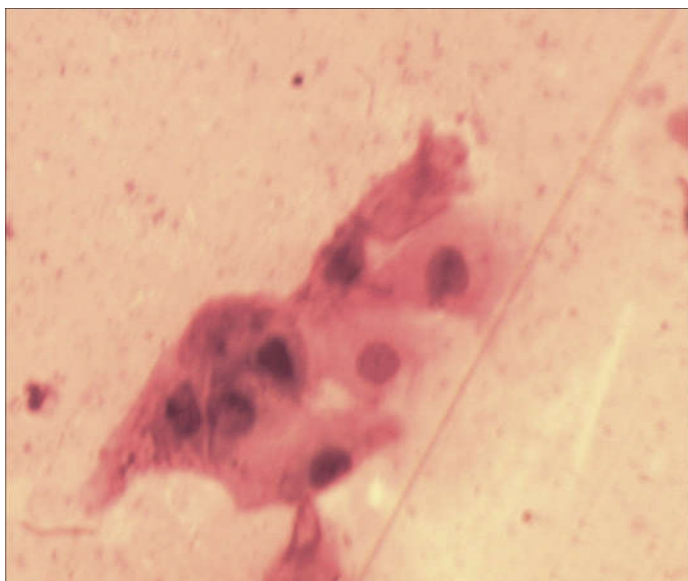


Рисунок 8 – Микрофото мазка-отпечатка поверхности роговицы при вторичной форме язвенного кератита. Преобладание пластов эпителия.

В период перехода с I фазы 3 стадии и II фазы 1 стадии течения язвенного кератита у большинства лошадей (78%) был обнаружен регенераторно-воспалительный тип цитограммы: нейтрофилы 75-80%, макрофаги 4-8%, фибробласты 12-18%, плазматические клетки 2-5%, реже (18%) – регенераторно-воспалительный тип цитограммы.

Формирование грануляционной ткани способствовало переходу воспалительного процесса в стадии биологического самоочищения и реорганизации рубца и эпителизации поверхности роговицы (2 и 3 стадии II фазы воспаления). Для этих стадий у всех лошадей был характерен регенераторный тип цитограммы: нейтрофилов 32-40%, фибробластов 38-45%, плазматических клеток 4-9%, гигантских многоядерных клеток 4-6% и наличие пластов эпителиальных клеток [25].

Таким образом, первичная форма язвенного кератита характеризуется острым началом, быстрой сменой стадий и фаз воспалительного процесса, более благоприятным течением, меньшим количеством осложнений. Вторичная форма язвенного кератита лошадей характеризуется подострым началом, хроническим течением, более длительной продолжительностью воспалительной стадии, стадии биологического самоочищения и рубцевания и большим количеством осложнений.

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DOI <https://doi.org/10.18551/rjoas.2017-01.36>

**ВИДОВАЯ ИДЕНТИФИКАЦИЯ БАКТЕРИЙ РОДА PASTEURELLA
НА ОСНОВЕ БИОХИМИЧЕСКИХ СВОЙСТВ В СООТВЕТСТВИИ
С СОВРЕМЕННОЙ КЛАССИФИКАЦИЕЙ**

**SPECIFIC IDENTIFICATION OF PASTEURELLA BACTERIA ON THE BASIS
OF BIOCHEMICAL PROPERTIES IN ACCORDANCE WITH MODERN CLASSIFICATION**

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АННОТАЦИЯ

В работе приведена современная классификация бактерий рода *Pasteurella* с указанием этиологической значимости и биологических особенностей каждого вида, а также описаны их биохимические свойства, позволяющие провести идентификацию. Разработана и апробирована короткая схема проведения идентификации всех имеющихся видов бактерий *Pasteurella spp.* с использованием коллекционных штаммов и полевых изолятов пастерелл.

ABSTRACT

The paper presents modern classification of *Pasteurella* bacterias with indicating etiological significance, biological characteristics and biochemical properties which allow their identification. Developed and tested a short scheme of identification for all available types of *Pasteurella spp.* with using of strains and field isolates' collection.

КЛЮЧЕВЫЕ СЛОВА

Систематизация, классификация бактерий, пастереллёз, экспресс идентификация, диагностика, ферментативные свойства, биохимические особенности.

KEY WORDS

Systematization, classification of bacteria, pasteurellosis, rapid identification, diagnostics, enzymatic properties, biochemical features.

Целью данной работы является систематизация данных о современной классификации бактерий рода *Pasteurella spp.*, и разработка схемы экспресс идентификации и дифференциации видов данного рода благодаря изучению биохимических свойств.

Актуализация современной классификации бактерий и систематизация научных данных о них являются сложным и важным этапом развития биологической науки. За последние годы исторически сложившийся принцип классификации, основанный на изучении морфологических, культуральных, тинкториальных, биохимических,

антигенных и биологических свойств, был дополнен современными методами молекулярной биологии [1,2]. Благодаря внедрению в микробиологию молекулярно-генетических методов идентификации, произошло изменение систематического положения многих ранее описанных видов микроорганизмов. Однако такие методы идентификации возможны только при наличии дорогостоящего оборудования, отдельного помещения и высококвалифицированного кадрового обеспечения, что часто невозможно в условиях районных и региональных лабораторий. Именно поэтому для идентификации вида бактерий при постановке диагноза рекомендованы легко воспроизводимые рутинные методы, основанные на изучении сахаролитических и протеолитических свойств. Учитывая произошедшие изменения в классификации пастерелл возникла необходимость в разработке схемы для типирования всех видов данного рода, что может быть достигнуто использованием коммерческих наборов для биохимической идентификации пастерелл наиболее этиологически значимых видов, либо использованием широкого ряда питательных сред Гисса [3-6].

МАТЕРИАЛЫ И МЕТОДЫ ИССЛЕДОВАНИЙ

Исследование проводилось на базе ФГБНУ «Всероссийский научно-исследовательский институт экспериментальной ветеринарии имени Я. Р. Коваленко» и ФГБОУ ВПО «Московская государственная академия ветеринарной медицины и биотехнологии - МВА имени К.И. Скрябина».

Апробацию предложенной схемы биохимической идентификации пастерелл проводили с использованием музейных штаммов бактерий коллекции типовых культур ФГБНУ ВИЭВ им. Я.Р. Коваленко: *Pasteurella aerogenes*, *P. dagmatis*, *P. multocida subsp. gallicida*, *P. multocida subsp. multocida*, *P. multocida subsp. septica*, *P. pneumotropica*, а также полевых изолятов пастерелл, выделенных в 2015-2016 годах из неблагополучных по пастереллёзу животноводческих хозяйств Астраханской, Нижегородской, Челябинской областей, Ставропольского края и Республики Мордовия.

Для проведения бактериологических исследований, культивирования и накопления бактериальной массы пастерелл использовали мясопептонный агар (МПА), мясопептонный бульон (МПБ), основу кровяного агара с добавлением 10% дефибрированной крови барана, агар МакКонки и Эндо.

Идентификация культур до вида проводилась с использованием сред Гисса, в которых в качестве индикаторной питательной среды использовалась пептонная вода с бромкрезоловым пурпурным и различные углеводы: адонит, арабиноза, галактоза, Д-глюкоза, дульцит, инозит, инулин, ксилоза, лактоза, мальтоза, маннит, манноза, мелибиоза, раффиноза, рамноза, салицин, сорбит, сахароза, трегалоза, фруктоза, целлобиоза. Дополнительно были использованы коммерческие наборы для изучения биохимических свойств *Remel Rapid NF Plus*, *Remel Rapid NH*, *API 20 NE*, *API 20 E*, *API 32 E* и *Microbact 24E Oxidase Positive*, позволяющие идентифицировать некоторые широко распространённые и клинически значимые виды пастерелл.

РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЯ И АНАЛИЗ ДАННЫХ

В соответствии с действующими «Методическими указаниями по лабораторной диагностике пастереллёзов животных и птиц» №22-7/82 от 20.08.1992 род *Pasteurella* spp. включает в себя шесть видов *P. multocida*, *P. haemolytica*, *P. ureae*, *P. pneumotropica*, *P. aerogenes*, *P. gallinarum*. В последней редакции определителя Берджи – «*Taxonomic Outline of the Prokaryotes Bergey's Manual of Systematic Bacteriology second edition – 2004*» описано 18 видов данного рода: *P. multocida*, *P. aerogenes*, *P. avium*, *P. bettyae*, *P. caballi*, *P. canis*, *P. dagmatis*, *P. gallicida*, *P. gallinarum*, *P. langaaensis*, *P. lymphangitidis*, *P. mairii*, *P. pneumotropica*, *P. skyensis*, *P. stomatis*, *P. testudinis*, *P. trehalosi*, *P. volantium*. Указанная в обоих документах классификация является устаревшей и требующей актуализации. Так на данный момент род включает в себя 14 видовых представителей [7]:

1. *P. aerogenes* – представитель нормальной микрофлоры пищеварительного тракта свиней, возбудитель оппортунистических инфекций.
2. *P. bettyae* – возбудитель оппортунистических инфекций мочеполовых органов у различных видов животных.
3. *P. caballi* – возбудитель эндокардитов, абсцессов и оппортунистических инфекций мочеполовой системы лошадей.
4. *P. canis* - представитель нормальной микрофлоры ротовой полости собак.
5. *P. dagmatis* - возбудитель оппортунистических инфекций у собак и кошек.
6. *P. langaaensis* - представитель нормальной микрофлоры респираторного тракта клинически здоровых цыплят.
7. *P. lymphangitidis* - возбудитель гнойных лимфаденитов большинства видов животных.
8. *P. mairii* – возбудитель оппортунистических инфекций у свиней, может быть причиной абортос у свиноматок.
9. *P. multocida* – возбудитель пастереллеза всех видов животных и птицы.
10. *P. oralis* - представитель нормальной микрофлоры ротовой полости кошек.
11. *P. pneumotropica* – возбудитель пастереллеза кроликов и грызунов.
12. *P. skyensis* - возбудитель пастереллеза рыб.
13. *P. stomatis* - представитель микрофлоры ротовой полости собак.
14. *P. testudinis* - возбудитель пастереллеза у рептилий, в частности черепах.

Систематическое положение некоторых видов, ранее относившихся к пастереллам, было пересмотрено: так вид *P. anatis* реклассифицирован в *Gallibacterium anatis*, *P. avium* реклассифицирован в *Avibacterium avium*, *P. gallinarum* - в *Avibacterium gallinarum*, *P. granulomatis* - в *Mannheimia granulomatis*, *P. haemolytica* - в *Mannheimia haemolytica*, *P. trehalosi* - в *Bibersteinia trehalosi*, *P. ureae* - в *Actinobacillus ureae*, *P. volantium* - в *Avibacterium volantium* [8,9,10].

Идентификация родовой и видовой принадлежности бактерий подразумевают определение морфологических, тинкториальных и культуральных свойств.

Морфологические свойства. Все виды бактерий рода *Pasteurella* представляют собой сферические, овальные или палочковидные клетки размером 0,3-1,0х1,0-2,0 мкм, расположенные одиночно, реже парно или в цепочках. При микроскопировании мазков-отпечатков тканей животных, а также мазков культур микроорганизмов, выделенных из патологического материала, пастереллы обычно имеет биполярное окрашивание. При последующих пересевах культуры биполярная окраска часто утрачивается и пастереллы выглядят как мелкие коккоподобные палочки. Спор не образуют, но имеют капсулу [11].

Тинкториальные свойства. Окрашенные по Граму культуры пастерелл имеют вид мелких грамотрицательных коккобактерий, при возможном одиночном или попарном расположении, не исключается наличие в мазках коротких цепочек бактериальных клеток. Окрашивание культур методом Романовского-Гимза или Михина позволяет выявить полиморфные биполярные палочки, окруженные крупной капсулой. В отношении биполярности бактерий рода *Pasteurella* стоит принять к сведению, что данное свойство проявляется преимущественно при изучении мазков-отпечатков патологического материала [12,13,14].

Культуральные свойства. Все виды *Pasteurella spp.* хорошо растут на обычных питательных средах - МПБ, МПА, бульон Хоттингера, агар Хоттингера, колумбийский агар, а также на неселективных высокопитательных средах - сердечно-мозговой агар, триптон-соевый агар, триптон-соевый бульон, эугоник бульон, эугоник агар. Оптимальная температура роста 37-38°C [15].

Таблица 1 – Биохимические свойства бактерий *Pasteurella* используемые для идентификации и дифференциации до видовой принадлежности

п/п	<i>Pasteurella aerogenes</i>	<i>Pasteurella bettyae</i>	<i>Pasteurella caballi</i>	<i>Pasteurella canis</i>	<i>Pasteurella dagmatis</i>	<i>Pasteurella langaaensis</i>	<i>Pasteurella lymphangitidis</i>	<i>Pasteurella mairii</i>	<i>Pasteurella multocida subsp. Gallicida</i>	<i>Pasteurella multocida subsp. Multocida</i>	<i>Pasteurella multocida subsp. Septica</i>	<i>Pasteurella oralis</i>	<i>Pasteurella pneumotropica</i>	<i>Pasteurella skyensis</i>	<i>Pasteurella stomatis</i>	<i>Pasteurella testudinis</i>
Каталаза	+	d	-	+	+	-	+	(+)	+	+	+	+	+	-	+	+
Оксидаза	(+)	-	-	+	+	+ ²	+	+	+	+	+	+	+	+	+	+
Восстановление нитрата	+	+	+	+	+	+	-	+	+	+	+	+	+	-	+	+
Лизиндекарбоксилаза	-	-	-	-	-	-	-	+	-	-	-	-	d	+	-	-
Орнитиндекарбоксилаза	+	-	+	+	-	-	-	(+)	+	+	d	+	+	+	-	-
Аргининдекарбоксилаза	-	n	-	-	-	-	n	-	-	-	-	-	-	-	-	-
Образование H ₂ S	+	n	n	-	-	-	n	-	+	+	+	-	(+)	n	-	-
Образование индола	(-)	-	-	d	+	-	-	-	+	+	(+)	+	+	+	+ ²	+
ОНПГ	d	-	+	-	d	+	-	d	-	-	-	-	+	-	-	(+)
Уреаза	+	-	-	-	+	-	+	+	-	-	-	-	+	-	-	-
Реакция Фогеса-Проскауэра	-	n	-	-	-	-	n	-	-	-	-	-	-	-	-	-
Желатиназа	-	n	-	-	-	-	n	-	-	-	-	-	d	n	-	-
Образование кислоты из:																
D-адонитола	-	n	-	-	-	-	n	-	(-)	(-)	(-)	-	(-)	-	-	n
L-арабинозы	(+)	-	-	-	-	-	+	+	d	-	-	-	d	n	-	d
Арбутина	-	-	n	-	-	n	+	-	-	-	-	-	-	-	-	+ ¹
Целлобиозы	-	-	-	-	-	-	-	-	-	-	-	-	-	n	-	-
Декстрина	+	n	n	-	+	-	n	-	d	d	d	+	d	n	-	d
Дульцитоло	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-
Фруктозы	+	n	+	+	+	+	n	+	+	+	+	+	+	n	+	n
D-галактозы	+	-	+	+	+	+	+	+	+	+	+	+	+	-	+	(+)
D-глюкозы	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Глицерола	+	n	n	-	d	-	n	d	d	d	d	-	(+)	n	-	-
Инулина	-	n	-	-	-	-	n	-	(-)	(-)	(-)	-	-	-	-	-
Лактозы	(-)	-	+ ¹	-	d	+ ¹	-	(+)	-	-	-	-	d	+	-	(-)
Мальтозы	+	d	(+)	-	+	-	d	d	-	-	(-)	+	d	+	-	(+)
D-маннитола	-	-	d	-	-	+	+	(+)	+	+	(+)	-	-	+	-	+
D-маннозы	+	d	+	+	+	+	+	+	+	+	+	+	+	+	+	-
Мелицитозы	-	n	n	n	n	n	n	-	(-)	(-)	(-)	-	-	n	n	n
Мелибиозы	d	-	n	-	-	-	+	-	-	-	(-)	-	d	-	-	+
Рафинозы	d	-	+ ¹	-	+ ²	-	-	-	-	-	-	-	d	-	-	d
L-рамнозы	d	d	(-)	-	-	-	n	-	(-)	(-)	(-)	-	(-)	-	-	+
Салицина	-	-	-	-	-	-	-	-	-	-	-	-	(-)	-	-	(-)
D-сорбитола	(-)	-	(-)	-	-	-	d	d	+	+	-	-	-	-	-	d
L-сорбозы	-	n	n	-	-	-	n	-	(-)	(-)	(-)	-	-	n	-	n
Сахарозы (сукрозы)	+	-	+	+	+	+	+	+	+	+	+	+	+	-	+	+
Трегалозы	-	-	-	d	d	-	+	+	-	d	+	+	(+)	+	+	d
D-силозы	+	-	d	(-)	-	-	-	+	d	+	+	+	d	-	-	+
Гидролиз эскулина	-	-	-	-	-	-	-	-	-	-	-	-	-	n	-	+
Рост на агаре МакКонки	+	d	-	-	-	+	d	d	d	d	d	+	d	n	-	d
Образование газа из D-глюкозы	(+)	d ³	+	-	-	-	-	-	-	-	-	+	-	n	-	-

+ - положительное значение теста.

-- отрицательное значение теста.

(+) – в большей степени положительное значение теста.

(-) – в большей степени отрицательное значение теста.

d – переменный результат значения теста.

+¹ – замедленное получение положительного значения теста.+² – слабое проявление положительного значения теста.d³ – слабое проявление переменного значения теста.

n – не определялись.

При росте на жидких питательных средах (МПБ, бульон Хоттингера) *Pasteurella spp.* вызывает равномерное помутнение с образованием слизистого осадка, который при встряхивании поднимается со дна пробирки в виде косички. Культуры бактерий в «М»-форме растут более интенсивно и дают более выраженный слизистый осадок, в «R»-форме образуют хлопьевидный или зернистый осадок. На агаризированных средах через 18-24 часа культивирования микроорганизм образует мелкие, круглые, выпуклые, полупрозрачные с гладкой поверхностью и ровными краями колонии в «S» - форме, флюоресцирующие в косо проходящем свете, колонии «М»-формы более крупные слизистые с непрозрачным центром; колонии «R»-формы - шероховатые непрозрачные.

Для определения подвижности используют полужидкий МПА, в который культуру засевают уколом с последующим инкубированием в течение 18-24 часов при температуре 37-38 °С. Культуры всех видов пастерелл неподвижны, рост в ПЖА отмечается по уколу без помутнения окружающей питательной среды [16].

Добавление к агаризированным средам 5-10 % дефибрированной крови животных способствует улучшению роста, при этом колонии возбудителя достигают размеров 1-3 мм, имеют сероватый цвет и слизистую консистенцию. Форма колоний может существенно варьировать от четких округлых и выпуклых до больших слившихся колоний с плавными размытыми краями [17].

Биохимические свойства. Для идентификации бактерий существуют коммерческие наборы, позволяющие определить наиболее значимые виды пастерелл. Набор *Remel Rapid NF Plus* позволяет идентифицировать – *P. pneumotropica*, *P. multocida* и *P. aerogenes* за 4 часа. Набор *Remel Rapid NH* позволяет произвести идентификацию вида *P. multocida* за 4 часа. Набор *API 20 NE* позволяет произвести идентификацию *P. aerogenes*, *P. multocida* и *P. pneumotropica* за 24 часа. Набор *API 20 E* позволяет произвести идентификацию *P. aerogenes* и *P. pneumotropica* за 24 часа. Набор *API 32 E* позволяет произвести идентификацию *P. aerogenes*, *P. multocida* и *P. pneumotropica* за 24 часа. Набор *Microbact 24E Oxidase Positive* позволит произвести идентификацию *P. multocida* за 24 часа.

В тех случаях, когда наборы не позволяют произвести видовую идентификацию стоит использовать отдельные тесты, так биохимические свойства всех видов бактерий рода *Pasteurella* приведены в таблице 1, схема проведения родовой идентификации приведена на рисунке 1 [18].

Для проведения родовой идентификации грамотрицательных бактерий с использованием рутинных методов стоит прибегнуть к схеме на рисунке 1.

Для проведения видовой идентификации бактерий рода *Pasteurella spp.* в разработанную схему были включены 12 наиболее воспроизводимых тестов: оксидазный тест, каталазный тест, тест на восстановление нитратов, уреазный тест, тест на орнитиндекарбоксилазу, тест на образование сероводорода, тесты на образование кислоты из D-галактозы, D-маннитола, дульцитола, D-сорбитола, декстрина и трегалозы (см. рисунок 2). Схема проведения видовой идентификации приведена на рисунке 2.

Апробирование предложенной схемы с использованием культур различных видов пастерелл позволило подтвердить работоспособность обеих схем.

Реализованный в схеме №2 подход к проведению типирования пастерелл позволяет с высокой точностью идентифицировать все существующие, на данный день, виды возбудителя с использованием минимального оборудования и минимальных экономических затрат.

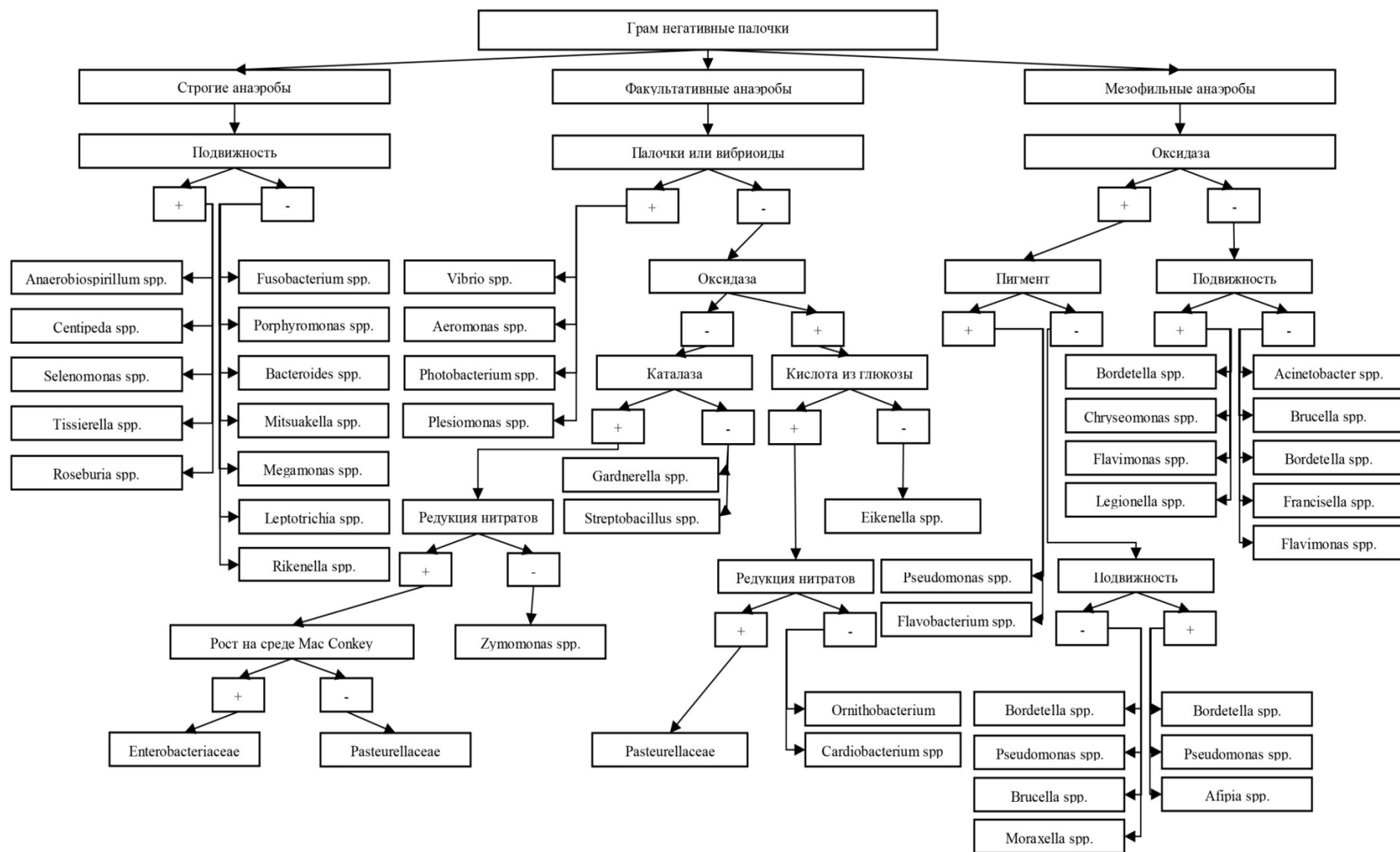


Рисунок 1 – Схема проведения биохимической идентификации грамотрицательных палочковидных бактерий

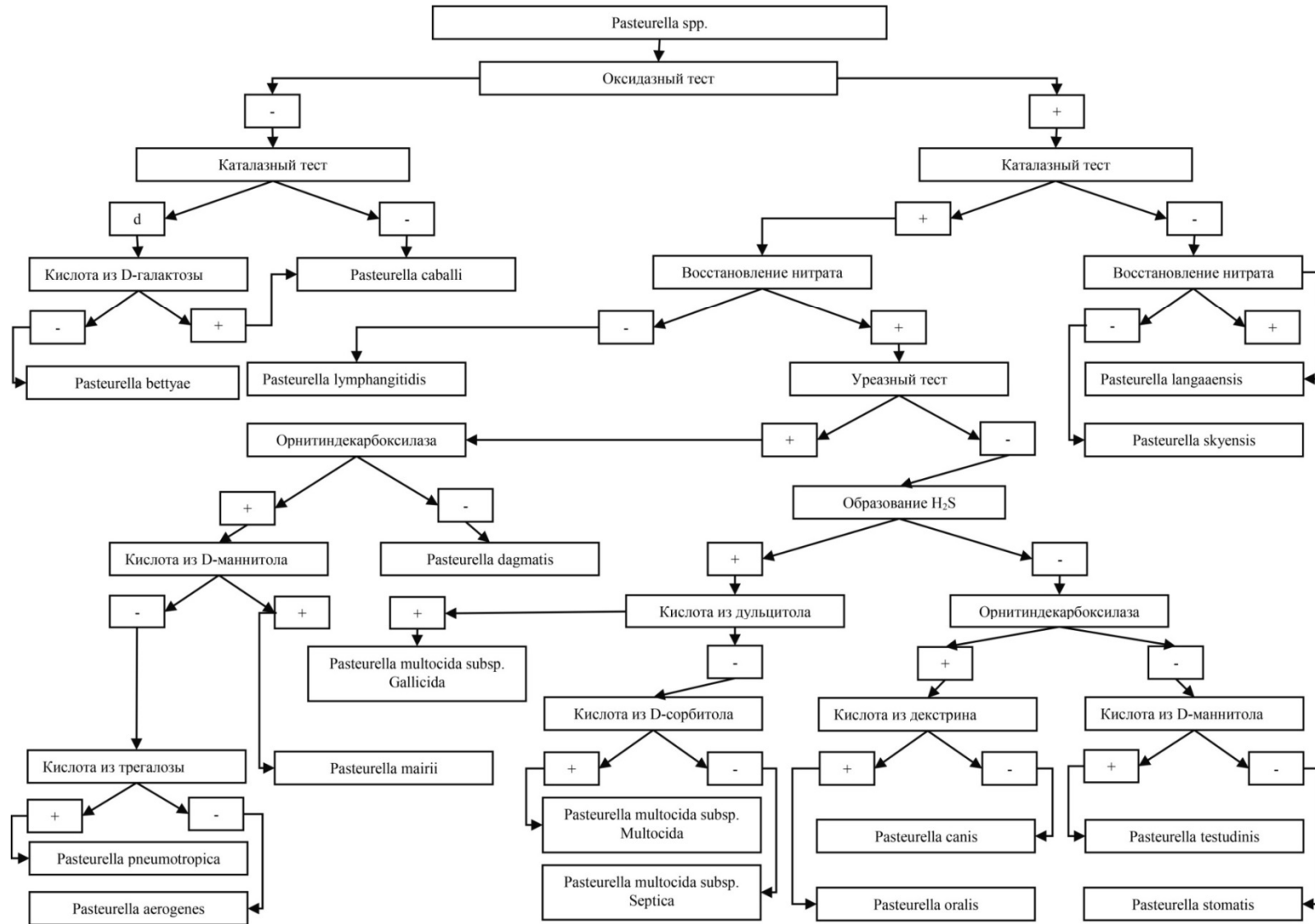


Рисунок 2 – Схема проведения биохимической идентификации бактерий рода *Pasteurella*

Заключение. Лабораторная диагностика инфекционных заболеваний заключается в получении из клинического и/или патологического материала чистой культуры возбудителя с последующей её типизацией. Несомненно, наибольшую достоверность таких исследований могут дать молекулярно - генетические методы, но требования к их использованию зачастую не могут быть реализованы в малообеспеченных лабораториях, поэтому идентификация бактерий проводится рекомендованными рутинными методами с определением биохимических свойств возбудителя. Существующие в свободном доступе наборы для идентификации микроорганизмов позволяют произвести типирование лишь ограниченного количества видов бактерий, в связи, с чем использование разработанной унифицированной схемы идентификации пастерелл позволит получить достоверный результат в кратчайший период.

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Russian Journal of Agricultural and Socio-Economic Sciences (ISSN 2226-1184) is an interdisciplinary open access journal of agriculture and socio-economic studies. Topical coverage includes: agriculture and rural development, agricultural economics, management, agribusiness, agrarian policy, information systems, social economy and rural sociology.

The electronic publication is registered by the Federal Service for Supervision of Communications and Mass Media of Russian Federation. Registration certificate EI No. FS 77-51446 of October 19, 2012.

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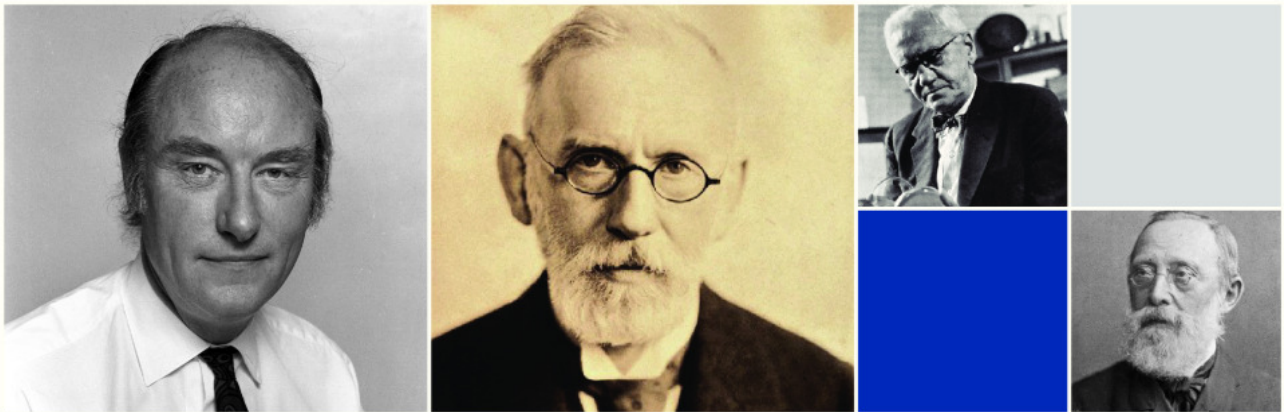
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