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COMMUNITY PERCEPTION OF THE EXISTENCE OF AGRICULTURAL TECHNOLOGY PARK GARING HANTAMPUNG IN PALANGKA RAYA CITY OF CENTRAL KALIMANTAN, INDONESIA

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ABSTRACT

One of the government programs to develop agriculture in Indonesia is by establishing Agricultural Technology Parks. The Agricultural Technology Park (TTP) is one of the programs initiated by President Joko Widodo and Vice President Jusuf Kalla, which was assigned to the Ministry of Agriculture (MoA) in 2015 through the Research and Development Agency. Conceptually, the Agricultural Technology Park (TTP) represents one of the model choices developed by the Ministry of Agriculture to foster new business clusters as a result of technology diffusion and area development, collaboratively managed with relevant institutions, communities, and local farmer groups. The community plays a significant role in the sustainability of activities within the TTP. Therefore, the presence of the surrounding community certainly also influences the condition of the TTP. The existence of the TTP inevitably gives rise to assessments of strengths and weaknesses from the community. In a study (Wulandari, 2008), public opinion regarding a program was identified as the most significant predictor of community involvement in operational activities. This study examines how the community perceives the TTP program and its association with shaping the perceptions and knowledge of the individuals participating in the TTP program. This study aims to analyze the level of knowledge and perception of the community regarding the existence of the Agricultural Technology Park (TTP) Garing Hantampung in Palangka Raya City. Additionally, it aims to analyze the relationship between the community's perception and knowledge levels concerning the presence of the Agricultural Technology Park (TTP) Garing Hantampung in Palangka Raya City. The data collected for this research consist of primary and secondary data. This research was conducted in Banturung Sub-district, Bukit Batu District, Palangka Raya City, Central Kalimantan. The sampling technique employed was the *Simple Random Sampling* method, where each population element had an equal chance of being selected as a sample, and the selection was performed randomly without regard to strata (levels) within the population. By utilizing the Slovin's method, a total of 90 households were determined as the sample size. The data were analyzed by assigning scores to the questionnaire responses and were assessed descriptively. Additionally, the Rank Spearman correlation analysis was employed for further examination. The research findings indicate that the level of community knowledge regarding the existence of the Agricultural Technology Park (TTP) Banturung Garing Hantampung in Palangka Raya city is relatively high, with a percentage of 58.26%, categorized as fairly elevated. On the other hand, the perception level of the community is 45.12%, falling under the low category. There exists a weak correlation between the knowledge and perception of the community towards the presence of TTP Garing Hantampung in Palangka Raya, Central Kalimantan Province. This is substantiated by a correlation coefficient value of 0.297.

KEY WORDS

TTP, perception, knowledge.

Indonesia is one of the countries situated within the tropical region and positioned along the equator. Indonesia possesses excellent agricultural potential, earning it the designation of an agrarian nation. One of the governmental initiatives aimed at advancing Indonesian agriculture is the establishment of Agricultural Technology Parks. The Agricultural



Technology Park (TTP) stands as one of the initiatives under the administration of President Joko Widodo and Vice President Jusuf Kalla. Its implementation, initiated in 2015, was entrusted to the Ministry of Agriculture (MoA) through the Research and Development Agency.

Table 1 – Agricultural Technology Park Activities per Year

Year	Agricultural Technology Park Activities	Description
2015	a. Management of Facilities and Infrastructure, arrangement manage TTP b. Purchase of equipment in the technology park	Construction of buildings including structures, fences, screen house, water reservoir, purchase post-harvest equipment, and agricultural cultivation equipment
2016	a. Handover of physical building in the form of building, handover of structures in the form of Facilities and Infrastructure b. Handover of Equipment in the Park Agricultural Technology c. Speakers and training from institutions d. Cultivation Training, Processing Training and cultivation e. Vocational High School Student Internship and Internship Students of the Faculty of Agriculture, UPR f. Vegetable Cultivation and Production	Handover of a building in the form of a structure Office space, guest house, machine room, fence screen house , Water reservoir, water, Handover of equipment, post-harvest, and, cultivation, provision of material by extension agents, existence of training for farmers by extension agents, internship program for students and university students
2017	a. Speakers and training from relevant institutions b. Cultivation Training, Processing Training and cultivation c. Vocational High School Student Internship and University Internship Students and university students. Faculty of Agriculture, UPR d. Cultivation of Vegetables and Production	Provision of material by extension agents, the existence of Training for farmers by extension agents Internship program for students, its existence Visits from agencies /departments/institutions
2018	a. Speakers and Training from relevant institutions b. Cultivation Training, Training Processing and Cultivation c. Internship for Vocational High School Students and Internship /departments Students of the Faculty of Agriculture, UPR d. Cultivation of Vegetables and Production	Provision of material by facilitators, existence Training for farmers by facilitators, acceptance Internship, Internship for Students and Students The presence of visits from institutions/agencies
2019	a. Internship for Vocational High School Students and Internship Students of the Faculty of Agriculture, UPR b. Cultivation of Vegetables and Production	Activities of Planting, Harvesting, and Post-Harvest
2020	a. Vocational High School Student Internship and Internship Students of the Faculty of Agriculture, UPR b. Cultivation of Vegetables and Production	Activities of Planting, Harvesting, and Post-Harvest
2021	a. Internship of Vocational High School Students and Internship Students of the Faculty of Agriculture at UPR b. Vegetable Cultivation and Production	Activities of Planting, Harvesting, and Post-Harvest
2022	a. Internship of Vocational High School Students and Internship Students of the Faculty of Agriculture, UPR b. Vegetable Cultivation and Production	Activities of Planting, Harvesting, and Post- Harvest

The purpose of the TTP program is to enhance the implementation and transfer of technology resulting from research and development activities conducted by the Ministry/Non-Ministerial Government Institutions (Non-Kementerian Lembaga Pemerintah), RISTEK (Research and Technology), private sector, and higher education institutions that play a role in providing benefits to society by creating an integrated agricultural model example that combines the sectors of agriculture, livestock, and fisheries within a single



production cycle. Furthermore, they also concentrate on elevating the quality of skilled and independent human resources in the field of agrotechnology and agribusiness (Junaedy, 2021).

The Agricultural Technology Park Development Program aims to become a center for showcasing and transferring agricultural technology to the community, with the goal of enhancing the quality of human resource technopreneurship. The Agricultural Research and Development Agency, along with its associated units, has generated innovative technologies and institutional changes that hold potential for agricultural innovation. The Agricultural Technology Park (ATP), coordinated by the Agricultural Research and Development Agency, is supported by local government and relevant institutions, serving as a platform for directly applying technological innovations in the agricultural lands owned by the community. Researchers and extension agents provide intensive support to farmers, enabling them to proficiently implement modern technologies. One of the ATP development areas is situated in Banturung Village, Bukit Batu Sub-District, Palangka Raya City in Central Kalimantan. The Banturung region possesses potential for the development of food crops and livestock (Barbara et al., 2019). Agricultural Technology Park activities can be seen in Table 1.

In the first year of 2015, the development of the Garing Hantampung Agricultural Technology Park (TTP) was successfully executed, resulting in physical structures such as training buildings, the TTP Center, farming land, gardens, and yards. *The second year, 2016*, involved a series of activities to acquire assets and items such as a four-wheeled vehicle, guest house, screen house, fencing, post-harvest processing materials, farmer stalls, livestock pens, machinery rooms, post-harvest rooms, storage rooms, post-harvest and cultivation equipment, biogas facilities, composting areas, water reservoirs, and office space. This was made possible through coordination with the City Government, in line with the requirements set by the City's Food Crops, Horticulture, and Agriculture Department. In the third year of 2017, the City Government provided support to the TTP by furnishing a high-capacity generator capable of powering the TTP Center, erecting electrical poles and extending the electrical network to the farming roads, as well as acquiring a 1.75-hectare land for the TTP Center. Moreover, monitoring and evaluation of the TTP activities were carried out, involving the TTP management. A meeting between the National Agency for Agricultural Research and Development (Balitbangtan) and the Central Kalimantan Agricultural Research and Development Agency (BPTP Central Kalimantan) was convened to discuss preparations for the expansion of the Garing Hantampung Agricultural Technology Park (TTP). During these meetings, discussions revolved around policy direction and development principles of the Garing Hantampung TTP. The main strength of the Garing Hantampung TTP receives support from the Local Government, including the Mayor and Vice Mayor, as well as department heads, sub-district heads, village heads, and the local community within the TTP area. The existence of this TTP also serves a multifunctional purpose as a meeting point for buyers and sellers dealing in various commodities, thereby contributing to the daily income of farmer groups in the surrounding area.

The activities carried out by the TTP include training for city extension workers at the TTP Center, as well as planting, maintenance, harvesting, and post-harvest activities. Throughout the TTP program, the community holds monthly meetings. These meetings occur on the 1st and 15th of each month, addressing crop cultivation by each farmer group and the distribution of program activities. These meetings involve the Food Crops, Horticulture, and Livestock Agency of Central Kalimantan Province, the Agriculture Office of Palangka Raya City, and the Central Kalimantan Agricultural Research and Development Agency (BPTP Central Kalimantan). Furthermore, these meetings are also utilized for promoting products from private agricultural companies. The outcomes of these meetings will be utilized to optimize the cultivation of various plant types, including tomatoes and chili, as well as other supporting plants like long beans, bitter gourds, and string beans. Within the Garing Hantampung TTP, there are three groups of student interns, comprising 6 students from SMKN 8 Palangka Raya who join forces with 23 students from SMKN 1 Mendawai. Both of these student groups are accommodated at the TTP Center's guest house. The third group,



consisting of students from SMK Budi Mulia, is placed at the Central Kalimantan Agricultural Research and Development Agency (BPTP Central Kalimantan) (Munier, 2017).

The weekly training sessions for these three groups are conducted at the TTP Center. Student internships, especially those from Palangka Raya University, are primarily situated within the TTP Center area, as each student is engaged in researching various commodities and various field activities. These activities encompass chili, tomato, and long bean cultivation, fertilization practices, fertilization dosages, tuber cutting, variety testing, and more.

This activity also involves informational meetings that encompass presentations by the Cooperative and SME Office of Central Kalimantan Province, specifically concerning products desired by the market. Additionally, there are presentations from the National Agency of Drug and Food Control (Badan Pom) regarding processed food registration, presentations from the Palangkaraya City Health Office about household industrial food production, and presentations from the Central Kalimantan Agricultural Research and Development Agency (BPTP) about understanding packaging and agricultural product packaging. The aim of these activities is to enhance the presentation of post-harvest agricultural products from the Garing Hantampung TTP, initiate the emergence of new SMEs, particularly within the Garing Hantampung TTP, and provide information about licensing and the requirements necessary when introducing products that are well-received by the market.

There have been several significant visits to the TTP Center and the area. These include a visit from all the extension workers of Palangka Raya City, totaling 60 individuals, to provide a one-day training on pest and disease management. Another visit involved 160 retired police personnel for post-harvest and cattle farm management training, conducted over a day. The Empowerment and Family Welfare (PKK) Provincial Team from Central Kalimantan visited the TTP Center and the area for harvesting and socialization, involving 56 participants over a span of 2 days. The head of the village and residents of Kanamit Jaya, amounting to 10 people, visited for a one-day training on chili pest and disease management. Additionally, the Agriculture Office of Gresik Regency visited for a day-long benchmarking study. The TTP Center management supported the chili planting campaign by providing assistance in the form of 150,000 chili seedlings at two locations: the Central Kalimantan Agricultural Research and Development Agency (BPTP) and the TTP Center. The chili plant seedlings were cultivated five times and placed in the TTP Center's screen house. All of this is closely related to the challenges faced by the TTP, starting from the marketing of fresh produce that still relies on middlemen due to the distance of the market from the TTP location, which is 36 KM away. This compels farmers to wait for middlemen to purchase their harvest, also because of the distance; farmers are reluctant to directly sell their produce in the market due to the absence of transportation for carrying their large quantities of produce. For instance, cucumbers, with each harvest yielding 700 kg, necessitate five round trips on a two-wheeled vehicle to transport them to the TTP Center. All of these are not exempt from what is known as risks and potential occurrences such as the underutilization and limited growth of production facilities, including factors like raw material availability and inadequate management of production resources. Furthermore, the Agricultural Technology Park (TTP) is not effectively managed due to the absence of operational funding for TTP management personnel. The human resources managing the TTP are also limited, leading to hindered business development within the TTP, compounded by its management by farmer groups (gapoktan).

The community plays a crucial role in the sustainability of the activities within the Agricultural Technology Park (TTP). Hence, the presence of the local community inevitably influences the condition of the TTP. The existence of the TTP naturally gives rise to assessments of its strengths and weaknesses from the community's perspective. In a study by Wulandari (2008), public opinion regarding a program was identified as the most significant predictor of community involvement in operational activities. This pertains to how the community perceives the Accelerated Area Development Program (TTP) and its connection to shaping the perceptions and knowledge of the community members engaged



in the TTP program. The objectives of the study are as follows: (1) To analyze the level of knowledge and perception of the community regarding the existence of the Garing Hantampung Agricultural Technology Park (TTP) in Palangka Raya City. (2) To analyze the relationship between the community's perception and level of knowledge regarding the existence of the Garing Hantampung Agricultural Technology Park (TTP) in Palangka Raya City.

METHODS OF RESEARCH

The research was conducted from March to May 2023 and took place in Banturung Sub-district, Bukit Batu District, in the city of Palangka Raya, Central Kalimantan. This area was purposively selected as the research site due to Garing Hantampung Training and Innovation Center being situated here, which serves as a region for the implementation of agricultural and livestock innovations, encompassing training, apprenticeships, and technology dissemination. The choice of Palangka Raya as a research location aligns with its status as one of the 26 designated development centers in Indonesia for the Accelerated Area Development Program (TTP), benefiting from substantial land resources for potential growth.

The data collected for this study is categorized into primary data and secondary data. The population to be examined consists of a total of 957 households (HH), comprised of 11 neighborhood units (RT) and 3 community units (RW). As per Arikunto (2006), in the case of a population size less than 100, it implies that the entire population will be treated as the sample. However, for populations exceeding 100, at least 10% - 15%, or 20% - 30%, or more will be taken as a representative sample. To determine the sample size, the Slovin formula, expounded upon in Nazir (2011), can be employed.

$$n = \frac{N}{N d^2 + 1}$$

Where: n = Sample size; N = Total population size; d² = Level of accuracy or precision (set at 10%).

As per the given formula, the form of the sample is as follows:

$$n = \frac{N}{N d^2 + 1} = \frac{957}{957 (0,1)^2 + 1} = 90 \text{ KK}$$

The calculation results using the Slovin method above yielded a total of 90 households as samples that will be interviewed based on the questionnaire list.

Addressing the first objective will be analyzed using the Likert scaling method by assigning score values to the available answers in Tables 3 and 4.

Table 2 – Perception Aspects Based on Statement Criteria and Scores

No	Perceptual Aspects	Judging Criteria	Score
a	Social Environment	Excellent	5
b	Economic Environment	Good	4
c	The purpose of the establishment of TTP Garing Hantampung	Good enough	3
d	Principles of Development of TTP Garing	Bad	2
e	The Success of TTP Garing Hantampung	Very bad	1

Table 3 – Knowledge Aspects Based on Statement Criteria and Scores

No	Perceptual Aspects	Judging Criteria	Score
a	Social Environment	Very High	5
b	Economic Environment	Tall	4
c	The purpose of the establishment of TTP Garing Hantampung	Quite High	3
d	Principles of Development of TTP Garing	Low	2
e	The Success of TTP Garing Hantampung	Very Low	1



The measurement scale used has a value range of 1-5, and the percentage score values range from 20% to 100%, divided into 5 categories. This interpretation is based on the criteria of Riduan and Sunarto (2007).

Table 4 – Criteria - Interpretation of Scores According to Likert Scale

No	Response Value Interval	Level of Perception/Knowledge
1	0%-20%	Very Poor/Very low
2	21%-40%	Bad/Low
3	41%-60%	Good enough/high enough
4	61%-80%	Good/High
5	81%-100%	Very Good/Very High

$$T = 50 + 10 \left(\frac{X_i - X}{s} \right)$$

$$S = \frac{\sqrt{n(\sum X_i^2) - (\sum X_i)^2}}{n(n-1)}$$

Where, T: Standard score; Xi: Respondent's score; X: Group mean score; S: Group standard deviation; Criteria based on each score value: ≤ 50% = Low level, 51% - 79% = Moderate level, > 80% = High level (Bioperiandi R, 2016).

Objective 2: To analyze the relationship between the public's perceptions and the level of knowledge regarding the existence of the agricultural technology park (TTP) Garing Hantampung in Palangka Raya. According to Sugiono (2013), the formula for the Spearman Rank can be as follows:

$$\rho = 1 - \frac{6 \sum b_i^2}{n(n^2 - 1)}$$

Where: ρ = Spearman Rank Correlation Coefficient; bi = Rank of Variable Data; n = Number of Respondents.

This is done by equating the calculated p value (calculated correlation coefficient) with the p table value (correlation coefficient from reference tables), which is computed using the following formula: if ρ calculated > ρ table, or t calculated > t table, or significance (Sig.) ≤ alpha (α) and the coefficient direction is positive.

The established formula:

$$KD = rs \times 100\%$$

Where: KD = Coefficient of Determination; rs = Spearman Rank Coefficient.

The calculation results are used to assess several levels of strength in the relationship between two variables. According to Sugiono (2016), the interpretation of correlation is guided by: 0.00 – 0.199: Very Low; 0.20 – 0.399: Low; 0.40 – 0.599: Moderate; 0.60 – 0.799: Strong; 0.80 – 1.00: Very Strong.

RESULTS AND DISCUSSION

Age is one of the parameters that shapes an individual's socioeconomic level and also indicates their productivity. The distribution of respondents based on age groups reveals that from the age of 29 to 39, there are 28% of respondents; from the age of 40 to 50, there are 44% of respondents; and the least represented age group is from 51 to 62 years, comprising 28% of respondents.

The next characteristic is education. Formal education significantly influences perceptions and knowledge in societal life. The level of education also reflects knowledge; this means that the higher the level of education an individual attains, the broader their knowledge is considered to be, and they are deemed more competent in their thinking. In Banturung Sub-district, its residents come from various educational backgrounds. There are



35% of respondents with junior high school education, 31% with senior high school education, 22% with primary school education, 7% with bachelor's degree (S1) education, and the least represented are 2% with vocational school (SMK) and diploma (D3) education, while 1% of the respondents have diploma level 1 (D1) education.

The majority of the population in Banturung Sub-district work as farmers. However, there are still several other residents with various occupations and professions. Among them, 38% of the respondents work as farmers, 23% work in the private sector, 9% are civil servants (ASN), 5% work as labourers, 4% are in the construction sector, 4% are teachers, 3% work as drivers, 2% are involved in fishing, 2% of respondents are not working due to being retired civil servants, 2% are traders located in the Community Learning Centre (TTP) area, and 1% work as carpenters, tailors, and fishermen..

Household size refers to the total number of all household members, excluding the head of the household. The number of respondents based on household size is as follows: 34% of the respondents have 2 dependents, 28% have 3 dependents, 23% have 4 dependents, 8% have 1 dependent, 6% have 5 dependents, and 1% of the respondents have 6 dependents.

Individual experience is one of the contributing factors to a person's socioeconomic status. The longer an individual works in a specific field, the more knowledge and expertise they develop in that domain. Experience also shapes an individual's perceptions and knowledge through ongoing interactions with specific objects. Experience in farming significantly influences perceptions and knowledge regarding the farming activities of each respondent. As for the farming experiences of the respondents, 31% have farming experience ranging from 2 to 10 years, 23% have farming experience ranging from 15 to 25 years, 22% have farming experience ranging from 27 to 38 years, 7% have farming experience ranging from 40 to 47 years, and 17% of the respondents have no farming experience. Based on their responses, each respondent cultivates various types of vegetable crops, engages in fish farming, some rear pigs, cattle, and chickens – some for personal consumption and some for sale.

The land area managed by each respondent refers to the total land area used by respondents for vegetable cultivation, measured in hectares (ha). Out of the respondents, 31% have a land area of 1 hectare, 28% have a land area of half a hectare (0.5 ha), 16% have a land area of 2 hectares, 11% do not have any land area, 6% have a land area of 1.5 hectares, 5% have a land area of a quarter hectare (0.25 ha), and 3% have a land area of 3 hectares. The community of Banturung Sub-district is composed of individuals residing in the Banturung Sub-district area. The duration of residence for each respondent is as follows: 10% of the respondents have lived there for 6-15 years, 52% for 16-31 years, 25% for 33-44 years, and 13% for 45-57 years. The inhabitants of Banturung Sub-district encompass various ethnic groups including the Dayak and Javanese, along with individuals from outside the city, specifically from Sampit and other cities. The income levels of each respondent vary; this pertains to the amount of money earned from their respective jobs or professions per month. In terms of income distribution, 49% of the respondents have an income of less than Rp 2,000,000, an equal percentage of 49% have an income ranging from Rp 2,100,000 to Rp 5,000,000, while 2% of the respondents earn more than Rp 5,100,000.

Knowledge is something experienced and understood by each individual in societal activities through the surrounding environment and other means. Thus, an individual can be considered to possess knowledge.

Based on the research findings, it can be determined that 66 respondents provided answers indicating "Moderately knowledgeable" with the criteria of "Moderate," while 8 respondents provided answers indicating "Knowledgeable." This accounts for a percentage of 8.88%, falling under the category of very low knowledge regarding the social environment. Starting from the respondents' awareness of activities within the administration of TTP Garing Hantampung, ranging from the roles of the chairman, secretary, and other members, respondents were also aware of the existence of social interactions among residents, such as informational activities. However, when it comes to specific events, for example, internship programs and others, respondents are knowledgeable. Furthermore, respondents



possess adequate understanding of the administration of TTP, which ideally should enhance the relationships among fellow residents/community members. Additionally, it serves as a platform for information exchange and, on another note, the presence of TTP also assists respondents in improving entrepreneurial skills. Furthermore, it is noted that there are 19 respondents who provided answers categorized as "low," constituting 21.11% of the total, and 2 respondents answered "very low," accounting for 2.22%, falling under the criteria of "very low understanding." This suggests that these respondents are not involved in the administrative activities of the Technology Transfer Program (TTP), thereby possessing limited awareness of the social benefits derived from participating in such activities. These benefits include fostering collaboration with TTP administration, enhancing interpersonal relationships among community members, providing a platform for media and information exchange, and notably, improving skills in agricultural entrepreneurship. Consequently, these respondents' knowledge about the social environment of the TTP remains minimal.

Table 5 – Analysis of Community Knowledge Regarding the Existence of Community Learning Centers in Palangka Raya, Central Kalimantan

No	Statement	Resp	Answer	Percentage	Criterion
1	Social Environment	0	Very High	-	-
		8	Tall	8,88%	Very Low
		61	Enough	67,77%	Enough
		19	Low	21,11%	Very Low
		2	Very Low	2,22%	Very Low
	Average	90	Average score 15.6	62,40%	Enough
2	Economic environment	0	Very High	-	-
		8	Tall	8,88%	Very Low
		52	Enough	57,77%	Enough
		24	Low	26,66%	Very Low
		6	Very Low	6,22%	Very Low
	Average	90	Average score 15.1	60,40%	Enough
3	The purpose of the establishment of TTP	0	Very High	-	-
		12	Tall	13,33%	Very Low
		58	Enough	64,44%	Enough
		14	Low	15,55%	Very Low
		6	Very Low	6,22%	Very Low
	Average	90	Average score 15.6	62,40%	Enough
4	TTP Development Principles	0	Very High	-	-
		3	Tall	3,33%	Very Low
		68	Enough	75,55%	Enough
		15	Low	16,66%	Very Low
		4	Very Low	4,44%	Very Low
	Average	90	Average score 15.7	62,80%	Enough
5	TTP Success	0	Very High	-	-
		1	Tall	1,10%	Very Low
		1	Enough	1,10%	Very Low
		67	Low	74,44%	Tall
		21	Very Low	23,33%	Very Low
	Average	90	Average score 10.6	42,40%	Low

The research findings on the economic environment reveal that 52 respondents answered with "adequately informed," comprising 57.77% of the total and falling within the criteria of "Adequately Informed." Additionally, 8 respondents responded with "Informed," making up 8.88% and falling within the criteria of "Very Low Understanding." This signifies that respondents possess knowledge that the presence of the Technology Transfer Program (TTP) encourages them to engage in entrepreneurial activities, both in the agricultural and non-agricultural sectors. For instance, they might open small shops or kiosks within the TTP area. Respondents are also aware that TTP activities, as previously experienced, can slightly enhance their income, allowing them to save a portion of their earnings for necessities. In this context, respondents are also sufficiently aware that the existence of the TTP can lead to optimal production outcomes. For example, respondents may receive financial aid from TTP activities, such as subsidized fertilizer or vegetable seeds tailored to the specific sandy soil



conditions of the area. This is particularly relevant due to the high cost of fertilizers, which prompts the local community to benefit from lower prices provided by TTP Garing Hantampung. On the other hand, 24 respondents with answers of "don't know" constitute 26.66% of the total, indicating a very low level of understanding, and 6 respondents answered "completely unaware," accounting for 6.22% with the same low level of understanding criteria. This implies that respondents have a limited awareness of the existence of the Technology Transfer Program (TTP) and its potential to increase income, slightly reduce food expenditures, or enhance respondents' entrepreneurial skills in both agricultural and non-agricultural sectors. Respondents are also unaware that participating in activities within the TTP could lead to optimal outcomes. Instead, based on respondents' responses, it is evident that they are only aware of the assistance provided by the TTP, which is primarily utilized on their own or private land.

The research findings concerning the purposes of establishing the Technology Transfer Program (TTP) have indeed contributed to the public's awareness and substantial understanding. This is evident from the fact that 12 respondents answered that they are aware, making up 13.33% of the total, denoting a very low level of understanding. Furthermore, 58 respondents responded that they are adequately informed, constituting 64.44% of the total, indicating a satisfactory level of understanding. This signifies that respondents are cognizant of the objectives behind the formation of TTP, which aims to facilitate expertise and self-reliance in the cultivation of food crops, marketing, and yields. Respondents are also aware that TTP Garing Hantampung was established as a model for integrated and sustainable agriculture in Central Kalimantan, based on local resources. Additionally, respondents understand that TTP was established to empower the community to utilize the technological facilities provided by the program and to comprehend the methods of enhancing agricultural practices through the utilization of innovative technologies provided by TTP. In this context, respondents also recognize that the primary goal of establishing TTP is none other than income augmentation. However, this contrasts with the 14 respondents who answered that they didn't know, comprising 15.55% of the total, indicating a very low level of understanding. Additionally, 6 respondents answered that they were completely unaware, making up 6.22% of the total, signifying a very low level of understanding. This suggests that these respondents are unaware of the purpose behind the establishment of the Technology Transfer Program (TTP), consequently impeding their ability to become skilled and independent in cultivating both marketability and optimal yields of food crops and vegetables. These respondents understand TTP merely as an illustrative example, lacking insight into its underlying objectives. Consequently, they lack awareness of the technological facilities provided by TTP. The respondents' limited comprehension of utilizing innovative technologies or tools available at TTP contributes to their lack of awareness regarding the ultimate objectives of the program, which could otherwise enhance their income levels.

The research results on the principles of "TTP" development reveal that 3 respondents answered "knowledgeable," constituting a percentage of 3.33%, categorized as low, and 68 respondents answered "fairly knowledgeable," constituting a percentage of 75.55%, categorized as sufficient. This suggests that based on the principles of "TTP" development, respondents understand that the "TTP" functions as a production process involving the processing and marketing of products. During activities at the "TTP," they are instructed and practice how to produce and process products up to the point of marketing. For example, in the case of tomato commodities, they are processed into sauce, packaged in bottles, and sold for Rp 15,000 in the Banturung sub-district area. Furthermore, respondents are aware of the development of the "TTP" as an agricultural innovation based on local potential, achieved through internships, training, and prospective business participants. Respondents indicated that awareness sessions have been conducted by presenters from relevant institutions, focusing on entrepreneurship. Training has been conducted for farmers, PKK (Family Welfare Movement) mothers, Palangkaraya city extension workers, students from SMK 3 Palangkaraya (vocational high school), and women's farmer groups. Additionally, there have been student internships from vocational schools (SMK) for 3 months, as well as internships for students from Muhammadiyah University and Palangka Raya University for 1 month.



These internships cover topics such as cultivation techniques for shallots, watermelon, tomatoes, chili peppers, and the creation of compost using cow manure. Furthermore, respondents are also aware of the existence of management for the "TTP" that should be professional, involving the design of institutional structures, human resources, and effective and sustainable governance. Respondents are knowledgeable about the fact that the "TTP" is designed to be self-sustaining and gradual, implying its sustainability. The "TTP" itself has capital from the savings and loan program for agricultural products, and it can also generate funds from the sale of harvest outcomes within the "TTP." In this regard, respondents are aware of the principles of "TTP" development that involve technology-intensive and environmentally friendly approaches, particularly through the bio-industry agricultural approach. However, there is still a segment that remains environmentally unfriendly, especially in the cultivation processes of horticultural crops that utilize numerous pesticides. Bio-industry agriculture has been practiced since 2016, where residual harvests are returned to the soil as a source of green fertilizer or composted. However, there are 15 respondents who answered "don't know," constituting a percentage of 16.66%, categorized as very low, and 4 respondents answered "strongly don't know," constituting a percentage of 4.44%, also categorized as very low. This is because respondents have limited awareness of the principles of "TTP" development itself. There is a lack of knowledge about "TTP" as a production process involving processing and marketing of products. They only have a slight understanding of "TTP" as an agricultural innovation through internships, but they are unaware of training and prospective business participants. Respondents also lack knowledge about the management of "TTP," which is designed to be professional, both in terms of institutional structure, human resources, and good governance. It is designed to be autonomous and gradual. They only know about the physical structure of the "TTP" building in the area. Respondents are also unaware of whether the "TTP" itself is environmentally friendly in terms of technology, as they only know about the harvest outcomes from the "TTP." Furthermore, through the bio-industry approach, respondents are aware that the fertilizers they obtain are not from the "TTP"; rather, they purchase them from nearby vendors for their personal lands.

The research results regarding the success of the "TTP" itself reveal that 67 respondents answered "don't know," constituting a percentage of 74.44%, categorized as low, while 21 respondents answered "strongly don't know," constituting a percentage of 23.33%, categorized as very low. This suggests that according to the respondents' awareness, there is no establishment of innovation-based agricultural business partnerships. Additionally, the presence of the "TTP" does not lead to an increase in community or farmer group activities, except for specific activities that are part of government programs. Similarly, there is no indication of an increase in income for the community in the "TTP" area. Regarding training or internships for extension workers, they are only conducted when there are specific activities initiated by the local government. Furthermore, efforts to enhance added value and product diversification are not undertaken every month but rather in conjunction with particular events.

Perception is the process of individual receiving stimuli through sensory organs, including the senses of sight, hearing, touch, and smell. The perception of the community in Banturung sub-district can be observed through the multitude of responses given, assessed based on percentages and criteria, as illustrated in Table 6.

Based on the research results, perceptions concerning the social environmental aspect indicate that 66 respondents provided unfavorable responses, making up 73.33% within the criteria of reasonably good. Furthermore, 14 respondents provided responses categorized as very poor, constituting 15.55% within the criteria of very poor. This implies that the respondents' responses indicate that the current operations of "TTP Garing Hantampung" are not functioning well. There is a lack of activities carried out by group members, and instead, individuals tend to manage their own plots of land. Consequently, the management of the "TTP" is overseen by only a few individuals, leading to the absence of tangible social benefits at present. This, in turn, does not enhance social relationships within the community, and it is no longer a platform or medium for exchanging information, such as through regular



meetings and socialization activities among farmer groups as it used to be. Hence, the known potential of the "TTP" to improve agricultural skills is not currently being effectively realized by the local community.

Table 6 – Analysis of Public Perception towards the Existence of TTP in Palangka Raya City, Central Kalimantan

No	Pernyataan	Resp	Responses	Percentage	Criteria
1	Social Environment	0	Very Good	-	-
		3	Good	3,33%	Very Poor
		7	Sufficient	7,77%	Very Poor
		66	Poor	73,33%	Sufficient
		14	Very Poor	15,55%	Very Poor
	Average	90	Average value of 11.4	45,60%	Poor
2	Economic Environment	0	Very Good	-	-
		2	Good	2,22%	Very Poor
		17	Sufficient	18,88%	Very Poor
		63	Poor	70,00%	Sufficient
		8	Very Poor	8,88%	Very Poor
	Average	90	Average value of 12.5	50,00%	Poor
3	The Purpose of Establishing TTP	0	Very Good	-	-
		4	Good	4,44%	Very Poor
		2	Sufficient	2,22%	Very Poor
		77	Poor	85,55%	High
		7	Very Poor	7,77%	Very Poor
	Rata - rata	90	Average value of 11.5	46,00%	Poor
4	Principles of TTP Development	0	Very Good	-	-
		1	Good	1,11%	Very Poor
		7	Sufficient	7,77%	Very Poor
		74	Poor	82,22%	High
		8	Very Poor	8,88%	Very Poor
	Average	90	Average value of 11.9	47,60%	Poor
5	Success of the TTP	0	Very Good	-	-
		1	Good	1,11%	Very Poor
		2	Sufficient	2,22%	Very Poor
		50	Poor	55,55%	Poor
		37	Very Poor	41,11%	Poor
	Average	90	Average value of 8.9	35,60%	Very Poor

The research findings regarding the perception of the economic environmental aspect indicate that 63 respondents provided unfavorable responses, making up 70% within the criteria of relatively high. Additionally, 8 respondents provided responses categorized as very poor, constituting 8.88% within the criteria of very low. This implies that the respondents perceive the existence of the "TTP" as not motivating them to become entrepreneurs, either in agriculture or non-agricultural sectors. They prefer to work and manage their personal lands. The presence of the "TTP" does not directly contribute to increased income and does not lead to savings in food expenses. There is no longer any provision of vegetable seeds through government programs, resulting in suboptimal production outcomes.

The research findings regarding the perception of the purpose of establishing the "TTP" indicate that 77 respondents provided unfavorable responses, constituting a percentage of 85.55%, which falls within the criteria of quite high. In contrast, 7 respondents provided responses categorized as very poor, making up a percentage of 7.77%, within the criteria of very low. The respondents are no longer skilled and self-reliant in the fields of agrotechnology and agribusiness. They no longer perceive the "TTP" as a model for sustainable agriculture based on local resources due to the absence of activities taking place in the "TTP" apart from vegetable cultivation carried out by a few members of the farmer group. There is a lack of implementation and transfer of technology within the "TTP." The income has not increased, and the community lacks opportunities to develop farming businesses through the use of technological innovations.

The research results concerning the perception of the principles of TTP development reveal that 74 respondents provided unfavourable responses, constituting a percentage of



82.22%, which falls within the criteria of good. Moreover, 8 respondents provided responses categorized as very poor, making up 8.88% within the criteria of very poor. This indicates that the "TTP" no longer functions as a production process involving the processing and marketing of products. There is a lack of training and involvement of prospective business entities, except for student internships which are ongoing. The management of "TTP" is not professional, including its human resources and the sustainable governance requires restructuring and regulating the recording of harvest results and processed product marketing. There is a lack of full-time human resources present at the "TTP," and the gradual self-sustainability is lacking, resulting in non-sustainability due to insufficient capital from "TTP" managers through the savings and loan program for agricultural products. Although "TTP" is environmentally friendly, the cultivation of vegetable crops still involves the use of many pesticides.

The research results regarding the perception of the success of "TTP" reveal that 50 respondents provided unfavorable responses, with a percentage of 73.33% falling within the criteria of fairly high. Additionally, 37 respondents provided responses categorized as very poor, constituting a percentage of 41.11% within the criteria of very poor. This indicates the absence of the establishment of innovation-based agricultural business partnerships, the lack of increased community or farmer group activities due to the absence of government programs, the non-improvement of income among the community in the "TTP" area, the absence of training/internships for extension workers, resulting in a lack of added value to the produced outcomes and product diversification. The cumulative total scores are summarized as seen in Table 7.

Table 7 – Knowledge and Perception Based on Statement Averages, Percentages, and Criteria

		Knowledge		
No	Statement	Mean	Percentage	Criteria
1	Social Environment	15,6	62,40%	Sufficient
2	Economic Environment	15,1	60,40%	Sufficient
3	Purpose of Establishing TTP	15,6	62,40%	Sufficient
4	Principles of TTP Development	15,7	62,80%	Sufficient
5	Success of TTP	10,6	42,40%	Low
	Overall Value	72,83	58,26%	Sufficient
		Perception		
1	Social Environment	11,4	45,60%	Poor
2	Economic Environment	12,5	50%	Poor
3	Purpose of Establishing TTP	11,5	46%	Poor
4	Principles of TTP Development	11,9	47,60%	Poor
5	Success of TTP	8,9	35,60%	Very Poor
	Overall Value	56,4	45,12%	Poor

Based on Table 7, Knowledge and Perception Based on Statement Averages, Percentages, and Criteria, it can be observed that the community's knowledge regarding the social environmental aspect has an average value of 15.6, with a percentage of 62.40%, categorized as sufficient. The economic environmental aspect has an average value of 15.1, with a percentage of 60.40%, also categorized as sufficient. Concerning the third statement regarding the purpose of establishing the "TTP," it has an average value of 15.6, with a percentage of 62.40%, categorized as sufficient. The principles of "TTP" development have an average value of 15.7, with a percentage of 62.80%, categorized as sufficient. The success of the "TTP" has an average value of 10.6, with a percentage of 42.40%, categorized as low. On the other hand, the community's perception towards the social environmental aspect has an average value of 11.4 with a percentage of 45.60%, categorized as poor. The economic environmental aspect has an average value of 12.5 with a percentage of 50%, also categorized as poor. Regarding the third statement about the purpose of establishing the "TTP," it has an average value of 11.5 with a percentage of 46%, categorized as poor. The principles of "TTP" development have an average value of 11.9 with a percentage of 47.60%, categorized as poor. The success of the "TTP" has an average value of 8.9 with a percentage of 35.60%, categorized as very poor. The community's



knowledge in Banturung sub-district regarding the presence of the "TTP Garing Hantampung" averages 72.83, with a percentage of 58.26%. This signifies that the community's knowledge regarding the presence of the "TTP" is categorized as moderately high. However, this contrasts with the community's perception in Banturung sub-district towards the presence of "TTP Garing Hantampung," which has an average value of 56.4 and a percentage of 45.12%. This indicates that the community's perception towards the presence of "TTP" falls under the poor category.

The test of relationship or correlation was conducted using SPSS version 25 software. The Rank Spearman correlation is classified as a non-parametric test of bivariate correlation. The results of the correlation test conducted between Knowledge and Perception are presented in the form of Table 8:

Table 8 – Displays the results of the Rank Spearman test for the relationship between Knowledge and Perception

Correlations				
			Knowledge	Perception
Spearman's rho	Knowledge	Correlation Coefficient	1.000	.297**
		Sig. (2-tailed)	.	.004
		N	90	90
	Perception	Correlation Coefficient	.297**	1.000
		Sig. (2-tailed)	.004	.
		N	90	90

** . Correlation is significant at the 0.01 level (2-tailed).

Based on the above output, it is known that N or the number of research data is 90. Looking at the table of correlation test results using the Rank Spearman technique, a p-value of 0.004 was obtained. If the alpha (α) value is 0.05, then the p-value (0.004) is less than the alpha (α) value (0.05). Thus, H_a is accepted, H_o is rejected, indicating a relationship between public knowledge and community perception towards the existence of TTP Garing Hantampung in Palangka Raya City, Central Kalimantan Province. From the SPSS output, a correlation coefficient value of 0.297 was obtained. Meanwhile, the p-value (0.05) yielded a p-value of 0.207. With a calculated p-value of 0.297 > the critical p-value, it can be concluded that there is a correlation between perception and knowledge. The coefficient correlation value of 0.297 indicates a weak relationship between public knowledge and perception.

Subsequently, the guidelines for the relationship between public knowledge and perception regarding the existence of the Agricultural Technology Park (TTP) can be outlined in detail as follows:

- - 0.199: Very Weak;
- 0.20 – 0.399: Weak;
- 0.40 – 0.599: Moderate;
- 0.60 – 0.799: Strong;
- 0.80 – 1.00: Very Strong.

CONCLUSION

The results of the analysis indicate that the level of public knowledge regarding the existence of the Garing Hantampung Agricultural Technology Park (TTP) in the city of Palangka Raya is 58.26%. This implies that the public possesses a satisfactory level of knowledge. In addition to being aware of the TTP, the community also visits the TTP location situated in the Banturung sub-district. As a result, their awareness of the surrounding environment is facilitated through the senses of touch and sight. This background contributes to the emergence of a 45.12% community response towards the existence of the TTP. This signifies that the public's response to the presence of the TTP is unfavorable.

There is a weak relationship between the knowledge and the public perception regarding the presence of the Garing Hantampung Agricultural Technology Park in the city of



Palangka Raya, Central Kalimantan Province. This is substantiated by a correlation coefficient of 0.297.

It would be advisable for the management of the Agricultural Technology Park (TTP) to engage the community in actively participating and contributing to the management of TTP. This can be achieved by organizing various activities within TTP, fostering effective communication, implementing well-structured training programs for groups such as farmers and local communities on a scheduled basis. These measures are essential to ensure that TTP operates smoothly and effectively, addressing the needs of the community. This is crucial for the sustainability of Garing Hantampung Agricultural Technology Park in the city of Palangka Raya, with the ultimate goal of transforming the low public perception into a highly favorable one.

Considering the relatively high level of public knowledge, it is advisable for the community to re-educate themselves by actively seeking information in order to emphasize the significance of enhancing public awareness regarding their already substantial knowledge. This will enable them to attain a profound understanding of the existence of the Garing Hantampung Agricultural Technology Park in the city of Palangka Raya. This understanding should encompass its social and economic impact, the purposes behind its establishment, the principles of its development, as well as the achievements attributed to the Agricultural Technology Park.

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