



UDC 331

CHARACTERISTICS AND ATTITUDES OF MILLENNIAL FARMERS IN THE VEGETABLE PRODUCTION CENTER AREA OF MERAWANG DISTRICT, BANGKA REGENCY

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ABSTRACT

Millennial farmers are present in the farmer regeneration process with their specific characteristics. This research aims to identify the characteristics of millennial farmers in the vegetable production center of Bangka Regency. This research analyzes the influence of characteristics on farmers' attitudes in carrying out their work as millennial farmers towards entrepreneurship. The research was conducted using a survey method, involving 54 respondents, the data was analyzed using Structural Equation Modeling (SEM) using smart partial least squares (PLS) 3.0. The research results show that the characteristics of millennial farmers in the vegetable production center area of Bangka Regency have technical competence, managerial competence and social competence. Millennial farmers are characterized by young individuals, aged 19 to 39 years. The formation of characteristics of millennial farmers is significantly and positively influenced by technical competence, managerial competence, social competence and individual characteristics. The dominant characteristics of millennial farmers are most strongly shaped by technical competence. Individual characteristics are the weakest factor in forming farmer characteristics. The characteristics of millennial farmers have a positive and significant influence on attitudes towards carrying out the profession as millennial farmers. The influence is given indirectly, namely through variable evaluation of the consequences of behavior. The characteristics of millennial farmers do not significantly influence their attitudes through changing beliefs about the consequences of behavior. It is necessary to increase competence in accordance with the individual characteristics of millennial farmers. Millennial farmers are more confident in carrying out their profession, but also have the confidence to develop through entrepreneurial behaviors that can be carried out.

KEY WORDS

Characteristics, millennial farmers, attitudes, entrepreneurship.

The image of not being interested in the agricultural business is becoming stronger among the younger generation. One of the characteristics of today's young generation is that they are not interested in working in the agricultural sector. According to research results from KRKP (2015), the younger generation has a poor perception of agriculture. Agriculture in general is not the main choice for the younger generation. The involvement of agricultural actors is caused by compulsion, but the positive thing in their development is that their choices have developed beyond their main choices (Haryanto, 2021). The younger generation who are involved in agricultural businesses are also known as millennial farmers. The presence of millennial farmers, initiated by the Ministry of Agriculture, provides an



alternative in accelerating farmer regeneration. The millennial farmers referred to in this program have the main characteristics of being 19 to 39 years old, having a millennial spirit, being adaptive to technology and having a business network (BPPSDMP, 2020). The existence of millennial farmers is considered as an alternative in accelerating farmer regeneration, and is able to bridge between young farmers and farmers who have been farming for a long time (Haryanto et al., 2021).

The number of millennial farmers continues to grow in various regions, through ministry programs. The specific characteristics of farmers from the younger generation still need to be identified further, considering that each region has diverse characteristics. Previous research by Haryanto et al. (2022) concluded that millennial farmers have the characteristics of high education, good technical skills, and managerial and social skills. The managerial and social competencies of millennial farmers in the West Java Rice Central Area were found to be still weak. Kiptot and Franzel, (2014) argue that the characteristics of advanced farmers are tenacity and exemplary. These characteristics can then provide examples and direct or indirect encouragement to the younger generation to carry out similar efforts in the agricultural sector. A similar thing was stated by Haryanto et al., (2022), the characteristics of millennial farmers found are expected to be able to encourage the interest of the younger generation to work in the agricultural sector. Anwarudin et al., (2020) found different characteristics in millennial farmers, apart from having better education than senior farmers. They have good access to the use of technology.

The existence of millennial farmers has the potential to increase the number of entrepreneurs in the agricultural sector. According to Haryanto et al., (2022), the character of millennial farmers has a positive influence on the growth of new entrepreneurs in the agricultural sector. The character of millennial farmers can be relied on to increase the supply of farmer entrepreneurs in various regions. The question is, do millennial farmers in Bangka Regency have reliable characters who have the potential to increase the supply of new entrepreneurs in the agricultural sector? One of the development programs for millennial farmers from the Ministry of Agriculture in Bangka Regency was carried out in the vegetable production center area of Merawang sub-district. Young farmers have diverse backgrounds and motivations in determining their decision to get involved in the agricultural business. Therefore, apart from identifying the entrepreneur intentions of millennial farmers and the factors that shape these intentions. It is also necessary to conduct a study on identifying the characteristics of millennial farmers. What is the influence of characteristics on attitudes, which ultimately determines whether someone has entrepreneurial intentions or behavior in running their agricultural business. The aim of this research is to identify the characteristics of millennial farmers in the vegetable production center area of Bangka Regency, and analyze the influence of characteristics on the formation of attitudes of millennial farmers.

METHODS OF RESEARCH

The research location is in the vegetable production center, Merawang District, Bangka Regency. The research was carried out using purposive sampling. The research was conducted in 2022, using primary data. The research used a survey method, involving 54 respondents. Data analysis was carried out using Structural Equation Modeling (SEM) with the help of smart partial least squares (PLS).

The model built in this research involves four endogenous variables, namely 1) characteristics of millennial farmers (KPM), 2) attitudes (*Attitude toward the behavior*), 3) behavioral beliefs observed from Beliefs in the consequences of hard work (ATB.1), Belief in the consequences of being brave enough to take risks (ATB.2), Belief in the consequences of honesty (ATB.3), Belief in the consequences of being confident (ATB.4), Belief in the consequences of not giving up easily (ATB.5), Belief in the consequences of being creative and innovative (ATB.6), Belief in the consequences of independence (ATB.7), and Belief in the consequences of leadership (ATB.8), 4) evaluation of the consequences of behavior (*evaluation of that consequences*) observed from Evaluation of the consequences of Hard work (ATB.9), Evaluation of the consequences Dare to take risks (ATB.10), Evaluation of the



consequences of Honesty (ATB.11), Evaluation of the consequences of Confidence (ATB.12), Evaluation of the consequences of innovative creativity (ATB.13), Evaluation of the consequences of independence (ATB.14), Evaluation of the consequences of leadership (ATB. 15).

The model built involves four exogenous variables 1) Technical competence is observed from choosing commodities based on planting patterns (DMK1), choosing commodities based on market demand (DMK2), choosing commodities based on land characteristics (DMK3), modern plant cultivation techniques (PB1), applying technology (PB2), organic farming cultivation techniques (PB3), having a clear market (Tmp1), implementing digital marketing technology (Tmp2), 2) managerial competency observed from Managing farming (KP1), Building networks and partnerships (KP2), Managing use Resources (KP3), Managing organizations/groups (KP4), Managing conflicts (KP5), Managing marketing (KP6), 3) Social competence is observed from Sharing knowledge and skills with other farmers (PMP), Inviting, empowering the young generation around them to be involved in farming (PME), Organizing with fellow farmers (PMO), Active in farmer institutional activities (PMPP), Providing examples of environmentally sound and sustainable agriculture (PML), and 4) individual characteristics observed from education, experience and age. The structural model built in this research is as in Figure 1.

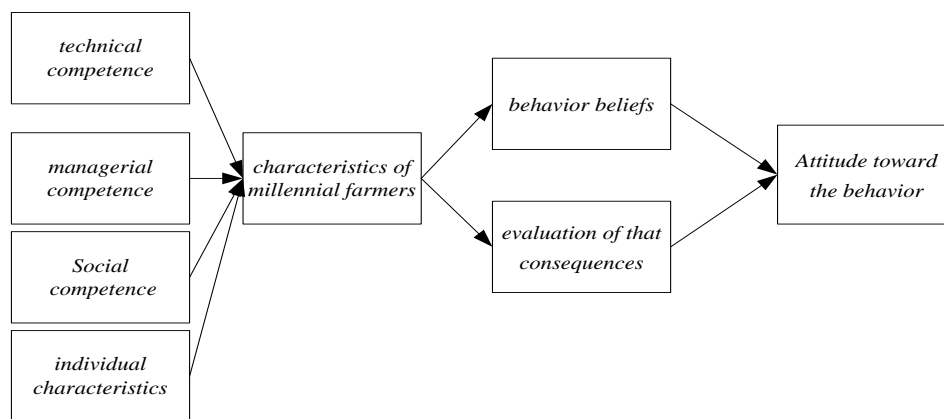


Figure 1 – Research model of characteristics and attitudes of millennial farmers in the vegetable production center area of Bangka Regency

RESULTS OF STUDY

Results of measurement model evaluation analysis. Evaluation of the measurement model is carried out to assess validity based on the Loading Factor (λ) value with a value greater than 0.5 and assessing the reliability scale indicated by the Average Variance Extracted (AVE) value which must be greater than 0.5 (Fornell and Larcker in Latan and Ghazali 2012), as well as Composite Reliability value must be greater than 0.7 (Ghazali 2006). The results of the measurement model evaluation show that all the indicators used are valid after going through the second stage of the PLS algorithm process, the loading factor value is greater than 0.5 (Figure 2). The PLS algorithm process also provides reliable results. This means that all indicator variables can truly measure their constructs reliably, and the final model obtained is considered good for hypothesis testing in structural model evaluation.

Results of Structural Model Evaluation Analysis. The presence of millennial farmers from the younger generation is believed to have different characteristics, including age and level of education. Millennial farmers are more adaptive to technology and have good market access. Haryanto et al (2022) state that indicators of individual characteristics, technical competence, managerial competence, and social competence form the character of millennial farmers. The results of this research show that the R-square value of the characteristic variable for millennial farmers is 0.878. This means that indicators of individual



characteristics, technical competence, managerial competence and social competence are factors that form the characteristics of millennial farmers which are able to explain the diversity of characteristic values of millennial farmers by 87.8 percent. Meanwhile, the rest is explained by other variables that are not used in the research model. The R-square value of 0.878 shows that the model built is strong.

Characteristics of millennial farmers the rice central area in West Java has a strong positive influence on the formation of new agropreneurs (Haryanto et al (2022)). This means that the characteristics that are formed have an impact. This character can also be interpreted as a background factor for a farmer's attitude which ultimately determines his or her intention to their behavior. The results of this research show the R-square value of the attitude variable is 0.555. The diversity of attitude values is 55.5 percent explained by the variables of belief in behavioral consequences and evaluation of consequences, while the rest is explained by other factors that are not used in the research model. The results of the significance test of all hypotheses are built in the research has a significant influence, based on the estimated value of the path coefficient; it is known that 7 structural relationships have a significant influence (Table 1).

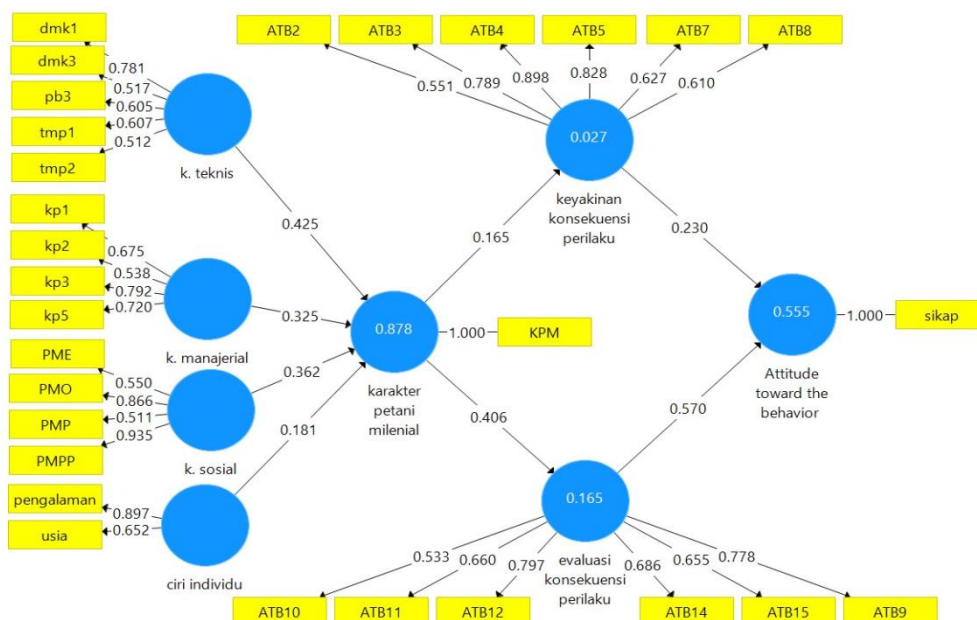


Figure 2 – Standardized image of the second stage loading factor values on the influence of millennial farmer characteristics on attitudes towards behavior

Table 1 – Path parameter coefficient value

Hypothesis	Original Sample	t-value
Individual characteristics -> characteristics of millennial farmers	0,181	3,140*
Managerial competence -> characteristics of millennial farmers	0,325	5,256*
Social competence -> characteristics of millennial farmers	0,362	4,484*
Technical competence -> characteristics of millennial farmers	0,425	6,363*
Characteristics of millennial -> evaluation of that consequence	0,406	3,364*
Characteristics of millennial -> behavior beliefs	0,165	1,104
Characteristics of millennial -> attitude toward the behavior	0,230	1,994*
Evaluate the consequences of behavior -> attitude toward the behavior	0,570	5,453*

Note: *significant (α)5% t value 1,96.

The characteristics of millennial farmers in the vegetable production center area of Bangka Regency are significantly shaped by indicators of technical, managerial, social competence, and individual characteristics. The characteristics of millennial farmers in this study were most strongly shaped by the influence of technical competency indicators, although social competency and managerial competency also had a large contribution. Meanwhile, the individual characteristics in this study have a very weak influence in forming



the character of millennial farmers. The four indicators that form farmer characteristics have a positive influence, the results found are slightly different from the characteristics of millennial farmers in West Java rice centers. Indicators of individual characteristics, technical competence, managerial are factors that have a positive influence on the character formation of millennial farmers. Social competence is a factor that has a negative influence (Hariyanto et al. 2022). The same results show that the characteristics of millennial farmers in the vegetable production center area of Bangka Regency are most strongly shaped by the influence of technical competence. This is the same as the characteristics of millennial farmers in the rice production center area of West Jawa.

Technical competency is the basic competency needed to run a business. This competency is believed to be an important indicator in a performance assessment where the technical competence of Horticultural farmers significantly influences their business performance (Dewijanti et al. 2023; Hariyanto et al. 2022). One of the characteristics of millennial farmers in the vegetable production center area of Bangka Regency is technical competence. The path parameter coefficient value of the influence of technical competence on the characteristics of millennial farmers ($\gamma=0.425$), shows that technical competence plays an important role in forming the characteristics of millennial farmers. The resulting positive influence means that the technical competencies possessed are increasingly diverse in shaping the characteristics of millennial farmers.

Technical competence is the actions of actors in their business to achieve production targets, through a series of activities that must be carried out (Bakhtiar et. al 2017). Technical competency is also defined as the ability of farmers to carry out farming activities independently (Leasa et al. 2018). Furthermore, Mayamsari et al. (2014) said that knowledge, attitudes and skills can be used as indicators of technical competence possessed by farmers. Women farmers in Wonua Village have high technical competence, explained by their knowledge of vegetable cultivation techniques. The technical knowledge they possess makes women farmers have excellent skills in cultivating vegetables (Sidu et al. 2021). Technical knowledge is one aspect of competency that farmers must master (Bahua and Limonu (2015).

Technical competence in this research is measured from the technical aspect of cultivation, namely the farmer's knowledge and skills regarding selecting plant types, planting patterns, market demand, and land characteristics. Based on the loading factor value (Figure 2), farmers' knowledge and skills in selecting the types of vegetable commodities to be planted based on planting patterns are the strongest indicators ($\lambda=0.781$). Farmers' technical competence is followed by farmers' skills and knowledge in choosing types of vegetables based on land characteristics ($\lambda=0.517$). So far, farmers' technical competence has not been accompanied by the ability to choose plant types based on market demand. Farmers' knowledge and skills in responding to market demand and using it as a basis for selecting the commodities they plant need to be improved to boost their business performance. This needs to be done because it is considered a basic ability, competence can also be seen as a characteristic of a person when carrying out activities based on the skills, knowledge and behavior they have (Tjahyanti et al, 2021). Farmers who have good competence are considered to be better prepared to respond to challenges and face risks in business.

Farmers' decisions in choosing which commodities to plant are generally based on what they see from their farming experience. The types of vegetables grown by the majority of millennial farmers in the vegetable production center area of Bangka regency are mustard greens, kale, spinach, chilies, long beans, eggplant, cucumber, and basil. Skilled farmers determine the types of commodities to be planted using various planting patterns. The aim is to optimize land use, minimize the risk of loss and crop failure and increase business productivity. The technical competence possessed is not accompanied by the knowledge and skills to choose the types of commodities planted based on market demand to optimize profits. Millennial farmers do not yet have the ability to seize market opportunities, lack market information, so they are less willing to take risks by choosing different types of crops from the farmers around them.



Similar results were also presented by Haryanto et al. (2022) the decisions of millennial farmers in the Pantura region are based on experience and what they see around them. Technical competence related to cultivation is still considered lacking, one of the reasons is that it is not supported by an educational background in the agricultural sector. Farmers gain technical knowledge from experience which is also similar to various previous research results. Farmers experienced in cassava farming have good competence with high technical knowledge (Simamora and Luik, 2019). The technical knowledge possessed by women farmers in Wonua Village is also obtained from experience in processing and learning from various extension activities (Sidu et al. 2021).

Millennial farmers have the desire to continue to hone their skills (Haryanto et al 2022). Experience can also be interpreted as a person's sensitivity to responding to objects or events experienced (Rachmat, 2012). Experience does not always have to be obtained from a formal learning process. Events experienced and seen are believed to add to the experience. This condition shows that the technical competence of millennial farmers is not supported by their educational background in agriculture. This is not an obstacle to improving technical competency because, through various training experiences and internships that can be completed, competency can be increased. Knowledge and skills related to selecting the type of commodity planted based on market demand.

Managerial competency is the farmer's ability to plan and control the agricultural business they manage. Managerial competence is still weak in reflecting the characteristics of millennial farmers, compared to technical and social competence. The correlation coefficient value of the path parameter ($\gamma=0.325$), means that there is still a small role of managerial competence in shaping the characteristics of millennial farmers in the vegetable production center area of Bangka Regency. The managerial competence of millennial farmers in the research area is measured based on the ability to manage partnership networks, manage conflicts, manage businesses, and manage organizations. Based on the loading factor value (Figure 2), it is known that the managerial competence of millennial farmers is most strongly reflected by the farmer's ability to manage business ($\lambda=0.792$) and organization ($\lambda=0.720$). According to Haryanto et al (2022) millennial farmers have good leadership, even though they are the younger generation. The leadership abilities of millennial farmers in the research area in managing conflicts and networking with other partners are still lacking and need to continue to be honed. This is necessary because individuals who have good leadership skills will be reflected in their activities in running a business (Suyadi and Rimbawati, (2020); Rimbawati et al. (2018)). Millennial farmers in West Java rice centers have good leadership skills not only in managing their businesses but also in establishing partnerships that support their businesses (Haryanto et al 2022).

Social competence is the ability of farmers to involve themselves in community activities. The correlation coefficient value of the path parameters of the influence of social competence on the characteristics of millennial farmers ($\gamma=0.362$), there is an important role of social competence in forming farmer characteristics. The social competency studied is the involvement of farmers in community development in the aspects of education, economics, organization, and agricultural development. Based on the loading factor value (Figure 2), it is known that millennial farmers in the vegetable production center area of Bangka Regency are heavily involved in community development in aspects of agricultural development ($\lambda=0.935$) and organizations ($\lambda=0.866$). These two indicators most strongly reflect the social competence of millennial farmers.

The majority of millennial farmers in this region are beginners. Farmers continue to hone their abilities to be actively involved in farmer institutional activities and organize with fellow farmers. Social competence is believed to be social capital. Millennial farmers have relatively high social capital (Yuniarti et al. (2020); Setiawan et al, (2015). The social competence of millennial farmers is still weak. Social capital is believed to be a source of social ability for millennial farmers to be able to mobilize or become an example for society (Haryanto et al. 2022). Farmers in the research area still need to receive training and mentoring to become examples for other younger generations. The ability to share



knowledge and skills with other farmers or the motivation to invite and empower the younger generation around them to get involved in business in the agricultural sector is still lacking.

Individual characteristics are internal factors inherent in an individual. Individual characteristic factors have the weakest influence in forming the characteristics of millennial farmers in the research area ($\gamma=0.181$). The resulting positive and significant influence shows that individual characteristic factors still have a role in shaping the characteristics of millennial farmers. The same results were found for millennial farmers in West Java rice centers, where individual characteristics had a direct positive and significant influence in forming the characteristics of millennial farmers. The majority of farmers have a relatively high level of education and quite good farming experience (Haryanto et al 2022). The characteristics of farmers are slightly different in the research area; the majority have good experience and are young, while the level of education does not reflect the characteristics of individual farmers. Based on the loading factor value (Figure 2), it is known that the dominant experience most strongly reflects the individual characteristics of millennial farmers in the research location ($\lambda=0.897$). The young age of millennial farmers is also an individual characteristic that influences the formation of characteristics of millennial farmers with a loading factor value ($\lambda=0.652$).

Millennial farmers in the research location have diverse educational backgrounds, not all farmers have an educational background in agriculture. 37.04% or 20 farmers interviewed had a high school education, 20.36% or 11 farmers had a bachelor's and diploma education, and 42.59% or 23 millennial farmers had a low level of education, namely elementary school to junior high school. The technical abilities possessed were obtained through non-formal education, both training from instructors and independent learning efforts to dig up information from various sources on social media. Farmers have good technical skills and experience; few millennial farmers come from farming families. 100% of millennial farmers in the research location have an age range of 19 to 39 years, with 5-10 years of experience, 51.85% less than 5 years, 25.93% and others in the range of more than 10 years.

Individual attitudes towards behavior include beliefs about behavior and evaluation of the results of the behavior (Sulistomo, 2012). Attitude is defined as a form of evaluation or feeling reaction, namely feelings of support or non-support for an object that is seen or experienced throughout an individual's development (Sartika, 2020). Planned Behavior theory provides the view that attitude or attitude toward the behavior is one of the prerequisites for the formation of behavior, or a precursor to the occurrence of behavior. The attitudes of millennial farmers in this study were found to be positively and significantly influenced by the variables of belief in behavioral consequences ($\gamma=0.230$) and evaluation of behavioral consequences ($\gamma=0.570$). These results show that the contribution of belief variables to behavioral consequences is smaller in forming farmers' attitudes. This means that millennial farmers have a good ability to evaluate the consequences of the behavior they will carry out. Confidence in the consequences of behavior is still lacking. So far, farmers' attitudes towards entrepreneurial behavior as millennial farmers have been formed based on their ability to evaluate the consequences of the actions or behavior they will carry out.

The attitude toward the behavior of millennial farmers is formed through changes in beliefs and evaluations and is also indirectly influenced by background factors, which encourage changes in beliefs and evaluations in forming the attitudes of millennial farmers. Sartika (2020) defines background factors as a trait within an individual, included in the category of organismal aspects in Kurt Lewin's model, these background factors consist of personal, social and informational variables (Ajzen 2005). This study uses the latent characteristics of millennial farmers as a background factor that has a driving force in forming Attitude toward the behavior. The results of the study found that there was an indirect and significant influence of 26.9 from the characteristics of mineral farmers on the formation of Attitude toward the behavior. The results found show that technical competence has the most dominant influence of 11.4 in shaping the attitudes of millennial farmers. Technical competence has the greatest contribution in shaping the characteristics of millennial farmers. In the end, technical competence also has the greatest indirect influence in forming farmers' attitudes.



The formation of Attitude toward the dominant behavior is strongly determined by the influence of farmer characteristics through evaluating the consequences of the behavior given, while the influence of farmer characteristics through changing beliefs regarding behavioral consequences is small and insignificant. So far, farmers have realized that if they are serious and have an entrepreneurial attitude, they can run their businesses confidently and work hard. They are able to survive as millennial farmers and entrepreneurial farmers, but their confidence in the consequences of their behavior is still relatively low. Changes in individual beliefs about the results obtained from a behavior carried out will encourage the formation of attitudes; on the other hand, the formation of attitudes is also weighed by the evaluation of the results (Montano & Kasprzyk, 2015). This means that even though farmers have a positive attitude towards the millennial farming profession, in fact the desire to behave entrepreneurially in carrying out this profession is still based on considerations of evaluating the results they will obtain. This condition shows that they are actually not yet sure about pursuing this profession.

Millennial farmers are united in one forum to run the Millennial Farmer program, to get various support facilities, and opportunities to receive training and coaching. The characteristics that millennial farmers have so far make them able to evaluate the consequences of behavior and produce a positive attitude towards the millennial farmer profession. This means that the characteristics of millennial farmers contribute to the formation of positive attitudes towards the millennial farming profession. The results of previous research found various impacts of the characteristics that millennial farmers have on the formation of new agropreneurs, the resulting influence is strong and positive (Haryanto et al 2022). The tenacious and exemplary characteristics of advanced farmers as part of the community can become role models and direct or indirect encouragement to the younger generation to carry out similar efforts in the agricultural sector (Haryanto et al 2018, Kiptot and Franzel, 2014, Yuliani and Sulaeman 2012). The government's role is still needed in efforts to assist millennial farmers, increasing confidence in the consequences of the behavior that farmers carry out so that millennial farmers are more confident in carrying out their profession as millennial farmers. Farmers' confidence in the millennial farming profession and its potential to supply new entrepreneurs in Bangka Regency can be increased by strengthening the characteristics of millennial farmers. The most dominant technical competencies that shape the character of millennial farmers need to be improved, not only in terms of cultivation but also marketing, especially in creating new markets through the use of information technology. Forming the character of millennial farmers from the aspect of social and managerial competence is also very necessary to increase farmers' confidence which leads to the formation of an entrepreneurial attitude in carrying out their profession as millennial farmers. These two competencies still have a relatively small contribution in forming farmer characteristics.

CONCLUSION

Based on the results obtained, it can be concluded that the characteristics of millennial farmers in the vegetable production center area of Bangka Regency are that they have technical competence, managerial competence, and social competence, as well as having the characteristics of young individuals, namely 19 to 39 years old and experienced. The formation of characteristics of millennial farmers is significantly and positively influenced by technical competence, managerial competence, social competence and individual characteristics. The dominant characteristics of millennial farmers are most strongly shaped by technical competence, while individual characteristics are the weakest factor in forming farmer characteristics. The characteristics of millennial farmers have a positive and significant influence on their attitude towards carrying out the profession as millennial farmers, the influence is given indirectly, namely through variable evaluation of the consequences of behavior. The characteristics of millennial farmers do not significantly influence their attitudes through changing beliefs about the consequences of behavior.



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