

Factors Influencing the Entrepreneurial Capacity of Young Farmers for Farmer Succession



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Abstract: *The entrepreneurial capacity of young farmers is an important indicator for realizing farmer succession. The research aimed to analysis descriptively entrepreneurial capacity and the factors influencing the entrepreneurial capacity of young farmers. The study was conducted in Cianjur and Majalengka Regencies, West Java, Indonesia. The study population was young farmers in Cianjur and Majalengka Regencies. A sample of 220 people consisted of 110 farmers in Cianjur and 110 farmers in Majalengka. Samples were selected using a cluster random sampling technique. Data were collected by interview using a questionnaire. Research variables consisted of individual characteristics (X_1), access to information and communication technology (X_2), external support (X_3), the role of agricultural instructors (X_4), and entrepreneurial capacity (Y). Data analysis techniques used were descriptive statistical techniques and multiple regression. The results of the study concluded that youth entrepreneurship capacity mostly belonged medium classification. Majority of young farmers had junior and senior high school education, the average length time of business was 5.8 years, majority of farmers had never attended training, had high and easy access to information and communication technology, perceptions and motivations was mostly classified as medium. The entrepreneurial capacity of young farmers was influenced by education, motivation, access to information and communication technology, external factors and the role of agricultural extension agents.*

Keywords: *Entrepreneurial capacity, young farmers, community.*

I. INTRODUCTION

The condition of the main agricultural actors in recent years has slowed down in terms of succession. The number of farmer households in the past 10 (ten) years has decreased by 15 percent. This can be proven by comparing the results of the 2003 BPS census with the 2013 BPS census. The 2013 BPS census reported that farm households were 40.81 percent smaller than the 2003 BPS census of 55.73 percent.

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Based on the portion, young farmers are fewer than old farmers. The 2013 agricultural census data indicated that young agricultural actors (<35 years) were only 12.87 percent, very little compared to older agricultural actors (> 54 years) that is 32.76 percent and middle age (35-54 years) of 54.37 percent. The results of the analysis of the BPS data, if not taken seriously, it could be that the portion of farmers in Indonesia decreases.

Previous studies showed that farmer succession in Indonesia is and relatively low. The younger generation has a low interest to involve in agriculture activities. The interest of the younger generation which includes indicators of interest, ideals, and desire to become agricultural actors is low either in food crop commodities or horticulture. Likewise, parents' interest in their children to carry out activities in the agricultural sector indicated the same result which is relatively low. Most of the young generation stated that current condition of agriculture is of concern both in food crops and horticulture commodities [1]. The capacity of the younger generation in agriculture is quite limited. The younger generation does not have much experience, although of the majority of it is children of farmers, it is uncertain if they are involved in any agriculture activities in daily lives basis [2]. Therefore, effort to increase the capacity of young people to do agriculture related activities is still very much needed to. The succession of agricultural actors in Indonesia can be said to be slow and low. It is important to find a solution soon, given that Indonesia is known as an agricultural country. Majority of Indonesia's population work at agriculture sectors.

Based on the initial survey, it turns out that in the field there was found a group of young people who have been engaged in businesses in agriculture. Some of these groups formed communities such as IKAMAJA (Japanese Apprenticeship Association), KPMI (Indonesian Young Peasant Community), PATRA alumni (Youth Farmers Training) and HIDATA (Young Farmer Association). These young generation has grown into a young farmer who has high interest supported by entrepreneurial spirit and capacity [3]. Awakening of the soul and entrepreneurial capacity of young farmers can be a solution to the slowing problem of farmer succession. Thus young farmers can be alternative solution on the basis of entrepreneurship to arouse the interest of young people to become young farmers and then build their entrepreneurial capacity.

In connection with this description, research is needed to develop the entrepreneurial capacity of young farmers as an effort to accelerate farmer succession. The positive changes of the younger generation from the start of awakening motivation and entrepreneurial capacity can grow new agricultural actors.

The study must be balanced by analysing several factors that determine the entrepreneurial capacity of these young farmers.

Therefore the research aims to analysis descriptively the entrepreneurial capacity of young farmers and analysis the factors that determine the entrepreneurial capacity of young farmers.

II. RESEARCH METHOD

The study was conducted in West Java. The study sites covered 2 (two) districts, namely Cianjur and Majalengka Regencies. The research was conducted from April to September 2018. The population used were young farmers in Cianjur and Majalengka Regencies. Based on calculations using the Slovin formula obtained a sample of 220 people consisted of 110 people in Cianjur Regency and 110 in Majalengka Regency. Samples were selected using cluster random sampling technique.

Data collected in this study consisted of primary data and secondary data. Primary data collection was done by interview using a questionnaire. Secondary data was supporting data related to the focus of the study. Secondary data was collected through visual observations which were then recorded and documented. Secondary data needed in this study was the general condition of the research site, policies related to young farmers and other supporting data. The research instrument used in primary data collection consisted of questionnaires and interview guidance. The questionnaire consisted of a list of statements/closed questions. Interview guides were used for in-depth interviews.

Research variables consisted of the characteristics of young farmers (X_1), ICT Access (X_2), external support (X_3), the role of agricultural extension agents (X_4), and entrepreneurial capacity (Y). The characteristics of young farmers consisted of sub-variables of formal education, length time of business, length time of training, perception and motivation. ICT access had the indicator of online, website and telephone chat access preferences. The role of agricultural extension agents had indicators as facilitators, communicators, motivators and consultants. The entrepreneurial capacity of young farmers had indicators of adaptability, personal leadership, business management capabilities and the ability to collaborate. The research instrument had passed the instrument test with valid and reliable results.

The data analysis technique used in this study is descriptive and inferential statistical analysis techniques. Descriptive statistics are used to describe the central value and distribution of respondents in each variable. Second, inferential statistical analysis through multiple regression tests. The statistical model is as follows:

$$Y = k + aX_{11} + bX_{12} + cX_{13} + dX_{14} + eX_{15} + fX_{16} + gX_2 + hX_3 + hX_4$$

Description:

- Y : Entrepreneurial capacity of young farmers
- X_{11} : Age
- X_{12} : Formal education
- X_{13} : Length time of business
- X_{14} : Training
- X_{15} : Perception
- X_{16} : Motivation
- X_2 : ICT access
- X_3 : External factor

X_4 : Role of agriculture extension agents

III. RESULT AND DISSCUSSION

Young Farmer Description

The characteristics of young farmers are part of a person and are inherent in a person. These characteristics underlie a person's behaviour in work situations and other situations. Personal characteristics are described as individual characteristics. Individual or personal characteristics related to all aspects of life and the environment.

Table-I: Description of the Individual Characteristics of Young Farmers

Characteristics of Young Farmers	Classification	Total	Percentage (%)
Education	Elementary School	45	20.45
	Junior High School	71	32.27
	High School	71	32.27
	University	33	15.00
	Total	220	100
Modus : Junior High School and High School			
Length time of Business	Short (< 6 year)	118	53.64
	Medium (6 – 12 year)	92	41.82
	Long (> 12)	10	4.55
	Total	220	100
Average : 5.8 year			
Training	Never	128	58.13
	Short (\leq 7 day)	49	22.27
	Long (> 7)	43	19.55
	Total	220	100
Average : 3.65 day			
Perception	Low (< 24)	81	36.82
	Medium (24 – < 36)	97	44.09
	High (\geq 36)	72	19.09
	Total	220	100
Average : 28.66 (Medium)			
Motivation	Low (< 16)	76	34.55
	Medium (16 – < 24)	75	34.09
	High (\geq 24)	69	31.06
	Total	220	100
Average : 19.33 (Medium)			

All young farmers have received formal education with varying levels of education. Most young farmers have formal junior and high school education levels, but some attended elementary or university. Education is the main indicator of development and quality of human resources. Formal education is an educational activity that is taken formally in the sense of having a level, orderly and systematic. Basically, education functions to develop abilities, improve the quality of life and human dignity both individually and socially [4]. If examined further, the level of formal education of young farmers is better than the level of formal education of farmers in general. Previous studies reported the majority of farmers' education in general were elementary schools [5], [6], [7].



It is opposite of the condition found in the young farmers in this study whom majority received junior and high school education. This study supports previous research that young farmers have relatively better levels of education than older farmers [8], [3]. Formal education received by a young farmer is very important to develop their capacity. Education is a means of learning to improve knowledge, attitudes and skills possessed. Formal education in this study can affect the level of thinking and reasoning in making decisions and in acting. For a young farmer, knowledge, positive attitude and high skills can make them able to find solutions to farming problems faced, as well as being more adaptive to change and able to deal with problems well as well as capable to plan and evaluate them appropriately. The same thing has been stated by another researchers that the higher level of education of a person will affect the way of thinking, attitudes and behaviour towards a more rational way in accepting and understanding technological innovations obtained [9].

Length time of business is an experience that has been through, lived, felt and borne by farmers in carrying out farming activities by exerting energy, mind, or body to achieve farming goals, namely obtaining income for the needs of farmers and their families. Young farmers have an average of 5.8 years length time of business with most of them less than 6 years. When compared with farmers in general, the length time of business of young farmers is considerably less [10], [11]. This finding is understandable because young farmers usually just open or run their farming businesses [12]. The business running by young farmers are very diverse, ranging from cultivation to product marketing. In the field of cultivation, young farmers tend to pursue horticultural crops.

Training is non-formal education. Young farmers who were respondents of this study, only few of them ever had attended the training. The training attended varied both in the time and the topic covered. Some of the training time was carried out 3 days, a week and 3 weeks. Based on the topic, the training was technical and entrepreneurial. Technical training topics are cultivation and post-harvest. However, the majority of young farmers have never attended training. Training activities in the context of farmer succession carried out by training centres of the ministry of agriculture and local government have not been able to reach the majority of young farmers. In fact, training is still a foundation in spreading agricultural technological innovation. The results of this study support previous research that young farmers need training [13], [14], [15].

Young farmers who are respondents of this research have a pretty good perception in agriculture. This is indicated by the average and the majority of young farmers have moderate level perception. This condition shows that young farmers who are members of the Indonesian Young Farmers Community (KPMI) have better perceptions than young farmers in general. However, among them there are still those who have a bad perception of agriculture even though they have been carrying out agricultural activities. Some of the reasons raised include the difficulty of finding work in other fields and being disappointed with agricultural products, especially low prices when the harvest arrives. A small percentage of them also have high perception. They are young farmers who remain positive that working as an agricultural actor is not an outdated job, is a decent job, has the opportunity to become an agribusiness entrepreneur is a noble job. This study is in line with previous findings [16], [3].

Young farmers have varying degrees of motivation to work as agricultural actors, namely low, medium and high with almost balanced composition. Table-I shows that the average motivation of young farmers belongs medium classification. However, there are also young farmer whose motivation is in the low and high categories. This condition is better than that of young farmers in general that the interest of young farmers in agriculture is of concern [1]. Young farmers in this study are farmers who are members of the community, namely KPMI. Some of them are also Japanese internship alumni. Thus it is appropriate that among them (31%) have a high motivation in agriculture. Those who have joined the community tend to motivate each other and share solutions [17].

Table-II: Description of ICT Access for Young Farmers

Classification	Total	Percentage (%)
Low (< 14 times/week)	52	23.64
Medium (14 – 28 times/week)	61	27.73
High (> 28 times/week)	107	48.64
Total	220	100
Average : 23.06 times		

Young farmers mostly have high agricultural access to ICTs (Table-II). The ICTs in this study include chat via short messages and whatsapp, telephone and browsing on internet channels. The most frequently accessed media channel is whatsapp, both private and group. Contents of agricultural-related chat that often appear include information on land, products needed, product prices and marketing. In the whatsapp group, a number of discussions were also held on technical cultivation of the agricultural community by presenting speakers. The results of this study support research [18], [19].

Table-III: Description of External Factors for Young Farmers

Classification	Total	Percentage (%)
Low (< 34)	74	33.64
Medium (34 – < 51)	104	47.27
High (≥ 51)	42	19.09
Total	220	100
Average : 41,67 (Medium)		

Majority and average young farmers consider that external support for their agricultural activities is at a medium level. Some young farmers said that government support can be felt such as the existence of both technical and entrepreneurial training, apprenticeship facilitation and tool assistance, but not yet optimal and equitable. Government support is considered by the young farmer communities to give extra attention to the older generation, namely those who are members of farmer groups and farmer groups combined, with the majority of members being adult farmers. However, some government alignments that have been initiated and have been running for quite a long time targeting young people should be able to affect the entrepreneurial capacity of young farmers.

Activities such as entrepreneurship and technical training are non-formal education and internships are informal education that can increase entrepreneurial capacity [20]. Likewise, the assistance of venture capital and infrastructure facilities can be a stimulus for the recipient to be able to develop their business [21].

The succession of agricultural actors can actually start from the family. The findings in the field are cause for concern, because it turns out that although most of them are children of farmers, most of their parents feel happier if their children work in other fields. Among them there were indeed who were taught agriculture directly by their parents. Among them also worked on the land owned by their parents. It already reflects the succession of family farming actors, which means the management of agricultural businesses is passed on from parents to children. Parents should have a role in transforming the younger generation into successors to agricultural actors. The role of parents includes socialization and inheritance of agricultural businesses [22].

The support felt by young farmers who are members of the KPMP community is the existence of the community itself and the support of market information. Through this community they seem to have friends who have same goals and put efforts in their business. They can exchange information between members of the community. They feel that the community provides knowledge, skills, motivation and information such as variety, land, technical cultivation, pest and disease control, post-harvest and marketing. Market information support that helps young farmers is selling price information, commodity demand volume information and buyer/consumer information. The availability of markets can open up opportunities for young farmers. Entrepreneurship has a strong relationship with market orientation [23]. The widening market has an impact on the potential for entrepreneurship and even sustainable entrepreneurship [24], [25]. Communities become innovative in identifying opportunities [26], [27] to create and develop new businesses [28], [29], [30].

Table-IV: Description of the Role of Agricultural Extension Agents

Classification	Total	Percentage (%)
Low (< 10)	74	33.64
Medium (10 – < 15)	104	47.27
High (≥ 15)	42	19.09
Total	220	100
Average : 11.98 (Medium)		

Majority of and average young farmers consider that the role of agricultural extension agents is in the medium classification. Some young farmers argued that the role of agricultural agents actually already exists but rarely specifically develop young farmers. More agricultural extension agents assist farmer groups whose members vary from young farmers to old age. When this research was conducted in Cianjur and Majalengka Regencies, the formation of farmer groups specifically for young farmers had not yet been carried out. However, young farmers are part of existing farmer groups. Agricultural extension agents are expected to play an important role because they can influence one's behaviour [31], [32], [17], and increase the capacity of farmers [33], [34], [35].

Entrepreneurship is defined as the process of applying creativity, and innovation in solving problems and finding opportunities to improve life / business opportunities. Entrepreneurship also means an effort to create added value by combining resources through new and different ways to win the competition. Entrepreneurial capacity is examined in this study through descriptive analysis in Table-V.

Table-V: Description of Entrepreneurial Capacity of Young Farmers

Classification	Total	Percentage (%)
Low (< 42)	83	37.73
Medium (42 – < 63)	108	49.09
High (≥ 63)	29	13.18
Total	220	100
Average : 49.77 (Medium)		

Most respondents' assessment of entrepreneurial capacity (49.09%) is in the medium classification. However, there are also young farmers who rate to be classified as low (37.73%), and high (13.18%) (Table-V). This condition gives hope that young farmers can have the potential to become entrepreneurs because the entrepreneurial spirit is the initial capital to build an independent business [36]. Likewise growth and development can be achieved with programs that foster entrepreneurial capacity [37]. Entrepreneurship has a close relationship with the characteristics of human resources, markets, innovation and customers [24].

Determinants of Entrepreneurial Capacity of Young Farmers

To see the factors that influence the entrepreneurial capacity of young farmers, a multiple regression statistical analysis was performed. These factors include the level of education, length time of business, training, the access to ICT, perception, motivation, external factors and the role of extension agents. The results of the analysis are presented in Table-VI.

Table-VI: Factors that Influence the Entrepreneurial Capacity of Young Farmers

Variable	Score	Sign.	Description
R ²	0.967		
Constant	1.222	0.172	
Education (X ₁₁)	0.360	0.100	Significant
Length time of business (X ₁₂)	-0.008	0.900	
Training (X ₁₃)	-0.036	0.255	
Perception (X ₁₄)	0.008	0.842	
Motivation (X ₁₅)	1.811	0.000	Significant
The access of ICT (X ₂)	0.508	0.055	Significant
External factor (X ₃)	0.153	0.000	Significant
Role of extension agents (X ₄)	0.315	0.004	Significant

Based on Table-VI, it is known that the factors influencing the entrepreneurial capacity of young farmers are education, ICT access, motivation, external factors and the role of extension agents. Several factors did not affect the entrepreneurial capacity, namely length time of business, training and perception.



The R^2 value of 0.967 means that the diversity of entrepreneurial capacity is influenced by the diversity of variables in this study while the rest is determined if other variables are not found in the study. Thus, the equation can be stated as follows.

$$Y = 0.360X11 + 1.811X15 + 0.508X2 + 0.153X3 + 0.315X4$$

This research found that education has a positive effect on entrepreneurial capacity. The higher the level of education, the greater the entrepreneurial capacity of young farmers. Each increase in education duration of 1 (one) point can increase the entrepreneurial capacity of young farmers by 0.36 points. This research explicitly indicates that the level of education of young farmers can improve their adaptability, personal leadership, business management skills and the ability to collaborate. Although it is found that not all young farmers have background education in agriculture, but to run an agricultural business, technical ability is not the only one that must be possessed. Moreover, not all of the agricultural businesses occupied by young farmers are in the technical/cultivation sector. The character of the entrepreneur is reflected in several common characteristics and other personalities [38]. Some of these general characteristics include (1) high achievement motivation, (2) future perspectives, (3) high creativity, (4) high innovation behaviour, (5) commitment to work, (6) responsibility, (7) independency, (8) dare to take risks and (9) always look for opportunities. Other personalities found on the person with entrepreneurial spirit are proactive, tolerant of stress, openness to experience and friendliness [38], [29].

This study also found that ICT access has a positive effect on entrepreneurial capacity. The easier a young farmer has access to ICT, the higher the entrepreneurial capacity. The ICT access is very suitable to increase the capacity of young farmers, including entrepreneurial capacity. The main characteristics of the younger generation are very close to the use of information technology [18], [19]. The use of information and communication technology has aroused the interest of farmers, particularly the younger generation, towards agricultural content [3], [12]. The young generation that was targeted by this prospect was the Y generation born around 1981-1994, and the Z generation born in 1995-2010. This generation is the generation that is much interested in information technology and social media [17]. This condition can support market trends that currently use social media rapidly [39].

Motivation can encourage young farmers to increase their entrepreneurial capacity. This research proves that the higher the motivation of young farmers to pursue agricultural business can increase entrepreneurial capacity. When young farmers are interested in agriculture, have the desire to try to do agribusiness, aspire to be a successful farmer, work in agriculture field can provide them freedom to regulate their own business, it can be due to it can realize ideas and working in the agriculture field contribute to others, young farmers will seek to increase their adaptive capacity, personal leadership, business management skills and the ability to collaborate. The results of this study are consistent with reports that motivation can encourage young farmers to improve their abilities [40], [3]. The motivation of young farmers can come from self-help extension agents as an example of success [17]. The motivation of young farmers can come from government

extension agents through institutional development of farmers where young farmers are accommodated [8].

External factors which include support from the government, family, community and market support to increase the entrepreneurial capacity of young farmers. Government support to increase the entrepreneurial capacity of young farmers in recent years has begun. Several programs of the Ministry of Agriculture have been held such as training and provision of venture capital. The training has been carried out at training centre and the Agricultural Development Polytechnic. Likewise, the provision of venture capital through the Agricultural Youth Entrepreneurship Development Program (PWMP) has been distributed to young farmers. As a result of those government programs the success of business run by young farmers has already shown. Thus, this study supports previous research that to increase the entrepreneurial capacity of young farmers, government support must be improved and be better [41], [42].

The next external factor is family support. Families often do not support their children to continue the family farming business. However, when the family supports their children working in the agricultural field, it can be seen that their children's farming business appears better. The results of this study support research that recommends family support for their children [41], [22]. Besides family, community support has an impact on increasing the capacity of young farmers. Young farmers are very close to their peers and can share information about anything including agricultural business [43], [44].

Another external factor is market support. Agricultural business is inseparable from market conditions. Therefore, certainty of commodity prices, the number of requests and the state of consumers must be obtained quickly and valid information as recommended by previous studies [45]. Young people are more likely to be part of successful businesses, more interested in more profitable, modern businesses that are characterized by high efficiency and the latest innovations for increased production and economic value [46]. The younger generation often identifies themselves as entrepreneurs [47], oriented towards business diversification and agricultural profitability [48].

The role of agricultural agents influences the entrepreneurial capacity of young farmers. Findings in the field, extension conducted by government extension agents currently targeting adult farmers. Often young farmers receive less attention. The role of agricultural agents displayed by their role as facilitators, communicators, dynamists and consultants [49] can provide better attention to young farmers as the next generation in agriculture. Efforts to form a special group of young farmers can be a solution for coaching young farmers. The results of observations in the field found that many self-help agents became role models for young farmers. Self-help agents can be a source of knowledge because of their experience and examples of success in farming. This result supports the extension of self-help can be a good coach for young farmers [17].

IV. CONCLUSION

The results of the study can be concluded that the majority of youth entrepreneurial capacity are in the medium classification. Young farmers mostly have junior and senior high school education, the average length time of business is 5.8 years, most have never attended training, perception and motivation are mostly in the medium classification and have high ICT access. The entrepreneurial capacity of young farmers is influenced by education, motivation, ICT access, external factors and the role of agricultural extension agents.

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