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Rural Youth Capacity Building Model of the Chili Farming Community in Garut Regency West Java, Indonesia

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Abstract

Indonesia will experience farmer crisis if it is not followed by efforts to encourage youth’s interest to become a new generation of farmers. The survey research had been conducted in several districts in Garut Regency. The aims of this study were: (1) describe the level of youth capacity in chili farming, (2) find factors that influence the capacity of chili farming, and (3) find a capacity improvement model. Data were collected through direct observation and interviews with 233 youth from 1,367 people, samples were determined using Slovin formula. The instrument used was a closed-form questionnaire that had been tested for its validity and reliability. Data were analyzed descriptively followed by multiple linear regression. The results showed: (1) the majority of respondents were relatively young (26-30 years), had middle and high school education level (54.93%), had very low organizational experience, had high cosmopolitan level, (2) factors affecting farm capacity is; age, formal education level, and cosmopolitan. (3) Capacity building strategies must begin at an early age, have an adequate level of education, and have adequate insight.


Introduction

Agriculture is one of the employment sources to meet their daily needs for rural communities. There is so many job opportunities in the agricultural sector which rural youth can participate and at the same time becomes actor in agricultural sector development. However, in reality, young people in rural areas are less attracted to agriculture and more interested in working in the urban non-agricultural sector. Several reasons are lack of experience and technical knowledge in agriculture so they feel less confident (Effendy, L 2017). Around 54-63 percent of farmer children are not interested in helping their parents in agricultural activities (KRKP.2016). Furthermore Rusono (Bappenas, 2014) stated there several obstacles for young people to participate in the agricultural sector, especially cocoa, which are; limited access to land resources, lack of capital access, lack of access to markets, and poor information of new technologies thus make them reluctant to participate.

Currently, the interest of rural youth towards agricultural sector is declining, even from year to year the decline is getting sharper. Farmer’s household decreased as much as 31.232.184 or 55.7% from 56.041.000 to 26.135.469 or 40.81% from 64.041.200 (BPS 2013). In this case, it is necessary to take various efforts to needs to encourage the interest of the rural youth in agriculture to build a new generation of farmers. Apart from encouraging the interest of the younger generation, it can also be done through capacity building to assure they are capable and have adequate skills, thus they can participate and empowered in agriculture.

In terms of meeting food demand, several strategic commodities have not been able to be fulfilled from national production, therefore the best way is imported food, such as rice, soybeans, wheat flour, sugar, and meat. One of the important strategic commodities is chili, in which the demand always increase, and the price fluctuates following the unstable availability of production.
One of Chili production area in West Java is Garut Regency, according to the Head of the Agriculture Service (Kadistan) in the period May - June 2018 production of cayenne pepper in Banyuresmi and Sampireng Districts was 2,607 tons and 2,502 tons. Meanwhile, for large chilies were 8,319 tons and 9,095 tons, respectively. Based on this situation, Kadistan is optimistic that Garut Regency can supply 30-40 percent of chili demand in Jabodetabek areas. Several sub-districts as the main chili producers in Garut Regency are presented in the following table:

<table>
<thead>
<tr>
<th>No</th>
<th>Regency</th>
<th>Production (Ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cisewu</td>
<td>3 452</td>
</tr>
<tr>
<td>2</td>
<td>Cikajang</td>
<td>6 965</td>
</tr>
<tr>
<td>3</td>
<td>Cigedug</td>
<td>4 517</td>
</tr>
<tr>
<td>4</td>
<td>Cisurupan</td>
<td>7 743</td>
</tr>
<tr>
<td>5</td>
<td>Wanaraja</td>
<td>4 691</td>
</tr>
<tr>
<td>6</td>
<td>Sucinaraja</td>
<td>6 274</td>
</tr>
<tr>
<td>7</td>
<td>Banyuresmi</td>
<td>4 153</td>
</tr>
<tr>
<td>8</td>
<td>Leles</td>
<td>4 108</td>
</tr>
</tbody>
</table>

Previous studies have reported the relationship between efforts to regenerate farmers and the participation of youth in agriculture. Wardani and Anwarudin (2018) concluded that youth participation in agriculture is due to their parents who trained them to become the parents successor. Furthermore, Anwarudin and Haryanto (2018) recommended the important role of government and independent extension workers to involve youth in extension and agricultural activities, thus the gradual regeneration of farmers can be realized. Harniati and Anwarudin (2018) supported these reports and recommendations by proving that most of the young farmers who are currently engaged in agriculture are the result of informal education, namely their involvement in parental farming, being interested in and following successful examples of advanced farmers or independent extension workers and joining young farmer community.

Previous research on farmer regeneration has reported that young farmers are mostly more interested in or pursuing horticultural crops, post-harvest, marketing, and farming with agricultural equipment and machines as well as agriculture that has not been cultivated by farmers in general (KRKP 2015, Wardani and Anwarudin 2018, Anwarudin and Haryanto 2018, Harniati and Anwarudin 2018). Government programs that emphasize chili agribusiness can be a bridge between the involvement of youth in agriculture and farmer regeneration. Of course, this program requires the support of various parties for the realization of farmer regeneration that determines the sustainability of agriculture.

Based on the description above, the focus of the problem is a crisis of the main actors and businessmen or in the other word is "farmer crisis". The reason is the young generation in rural areas is less interested in the farmer profession, while most of the existing farmers are elderly (>45 years), moreover, the effort to regenerate farmers is a must, therefore in-depth studies to accelerate the growth of new generations as farmer millennials are needed. Therefore, the problem formulation of this research were: (1) to what extent is the agricultural capacity of rural youth in chili farming communities in Garut Regency?; (2) what is the factors that influence the development of youth capacity in the chili farming community?; and (3) what are the models and strategies for increasing the capacity of rural youth?. Meanwhile, the aims were: (1) to describe the level of youth agricultural capacity in the chili farming community; (2) find the factors that influence the development of youth capacity in the chili farming community; (3) formulating models and strategies to increase the capacity of rural youth in chili farming communities in Garut Regency.
Theoretical review

1. Capacity Development Factor

Previous research indicates that individual internal factors or farmer characteristics affect a person’s ability and motivation. Individual characteristics are closely related to all aspects of life and their environment. Lionberger (1968) stated that individual factors or internal factors that need to be considered are: age, education, psychological characteristics. Included in this psychology are rationality, mental flexibility, dogmatic, orientation to farming as a business, and the ease of accepting innovation. Individual internal factors that should be considered to explain a person’s communication include age, gender, level of education, socioeconomic status, nation, religion, and others.

2. Individual Characteristics.

Hanafiah and Saefudin (1983) wrote that a person’s age is one of the characteristics of an individual which is growing over time, thus it affects the biological and psychological functions of the individual. Chronologically, age can provide clues to determine the level of individual development because it is relatively easy and accurate to determine. According to Mardikanto (2009), age will affect a person’s level of physical and emotional maturity which greatly determines readiness to learn. In this study, the age studied was the age of a farmer until now, from birth until now when he is still doing farming activities.

Education is an important factor in building the quality of human resources. Education is a conscious effort to prepare students through guidance and/or training for their role in the future. In essence, education can improve quality of life and human dignity, both individually and socially (Prijono and Pranaka. 1996). Mosher (1997) added that education is one of well-factors in agriculture, that can accelerate the change in the attitude of traditional humans to modern humans, or from traditional to commercial mentalism. The term education or pedagogies means guidance was given deliberately by an adult to the youth so they become an adult.

Non-formal education is an activity outside the formal education system and aims to change people’s behavior in a broader sense. Non-formal education is organized by the community to improve their abilities, apply the knowledge were obtained from formal education into the practical work community. The target of non-formal education includes all age groups and all sectors of society (Prijono and Pranarka 1996). Several forms of non-formal education are extension activity, training, courses, as well as other forms of technical skills aiming to increase the intelligence and skills of farmers (Supriatna 1997).

The experience is defined as something that has been experienced (lived, tasted, borne, and so on). An effort is an activity by exerting energy, mind, or body to achieve a purpose. So the business experience concerning farmers is something has been experienced, lived, felt, and borne by farmers through activities exerting energy, mind, or body, to achieve their farming goals, namely to obtain high production.

The land is a manifestation or reflection of natural factors that are above and within the earth’s surface. The land functions as (1) a place for agricultural production activities such as farming and raising livestock or fish, and (2) a place for residential family farming. Hernanto (1993) stated that the area of farming land can be classified into three parts, namely (1) narrow with a land area of <0.5 ha, (2) medium with a land area of 0.5 to 2 ha, and (3) wide with an area of land > 2 ha. Tohir (1983) argued that a very narrow land area with traditional management methods can lead to (1) poverty, (2) inability to produce staple food, especially rice, (3) inequality in the use of technology, (4) an increase in the number of unemployment, and (5) inequality in the use of natural resources. The change of subsistence farmers from traditional to modern farming methods is considered the key to alleviating natural resource difficulties, lack of capital, lack of direct inputs, and technological backwardness (Penny 1990).
According to The Big Indonesian Dictionary (KBBI) (2001), cosmopolitan is defined as a person who has broad insight and knowledge, occurring from people or elements from various worlds. Cosmopolitan also means the level of a person’s relationship with the outside world outside his own social system which can be characterized by the distance he has traveled. For citizens who are relatively more cosmopolitan, the adoption of innovation can take place more quickly but for those who are more localite (closed, confined), the process of adopting innovation will take place very slowly because there are no desires to live a better life as can be enjoyed by people other people outside the social system (Mardikanto 2009).

3. Farmer Group Support

The farmer group is one of the farming institutions that exist in the community. These farming institutions were created by the community itself or formed by the government to support farming activities. Empirically, agricultural institutions can be distinguished, among others: (1) non-business social institutions which are focused on technology creation, technology delivery, the technology utilized, and mobilization of community participation, such as research institutions, extension workers, farmer groups, and so on, and (2) supporting business institutions which aim to make a profit, such as cooperatives, individual businesses, financial services businesses and so on (Hermanto and Subowo 2006).

The role of local CSOs in modern development management mechanisms must be organized hierarchically, thereby the updated current information can be woven in multidirectional manner, both vertically and horizontally. The role of community organizations in assisting the poor is varied, starting as an initiator, catalyst, and facilitator (Wikirannolo and Dwidjowijoto 2007). Ife (2002) argued that several types of strengths that are owned by the community and used to empower them, one of which is institutional strength. Empowerment is carried out by increasing people’s accessibility to educational, health, family, religious, social welfare systems, government structures, media, and so on.

According to MOA 67/2016, the strengthening of farmer groups is carried out through empowering farmers, with a combination of culture, norms, values, and local wisdom to improve farming and the ability of farmer groups to carry out their functions. The empowerment of farmers is carried out through training and extension activities with a group approach. Extension activities through a group approach to encourage the formation of a Farmer Institution that is able to build synergy between farmers and between farmer groups in an effort to achieve business efficiency.

4. Availability of Production Infrastructure

Production facilities refer to tools or equipment that can be used in achieving production goals or objectives. Production infrastructure is all of things that is main support for the implementation of the production process. Farming facilities include land, fertilizer, certified seeds, spray equipment, building materials, agricultural machinery, and production subsidies (Van den Ban and Hawkins 1999). Increasing agricultural production requires the use of materials and special production tools by farmers, including seeds, fertilizers, pesticides, food, and livestock medicine and tools (Mosher, 1997).

5. Institutional Support

According to Law Number 16 of 2006 concerning Agricultural, Fisheries, and Forestry Extension Systems, Article 1 paragraph 25 states that: extension institutions are government and/or community institutions that have the task and function of organizing extension. The farming institution is created by the community itself or formed by the government in supporting farming activities. Sumardjo (1999) stated that farming institutions affect the level of independence of farmers in doing business concerning the provision of production facilities, capital, provision of
physical facilities, information, as well as in the marketing of products. Institutions established by
the government include credit institutions through government banks or Village Unit Cooperatives
and market operations for rice commodities. The institutions seen as independent in farming are
the marketing system and the provision of capital by intermediary traders (middlemen) or through
farmer groups.

6. Information Source Support

Sources of information are an important tool that could influence the level of interest of
farmers. Agricultural Knowledge and Information System (AKIS) is really useful to analyze any
methods that improving farmer independence due to knowledge and information provided (Van
den Ben dan and Hawkins 1999). Farmers using different information to enrich knowledge in the
agricultural sector for managing their farms.

Information sources can come from government agencies including extension worker,
research institutes, massmedia, opinion leaders, and other farmers. To manage their farms
properly, farmers need knowledge and information on be various topics, such result research from
various disciplines of farm management and production technology, experiences of other farmers,
current situations, and developments that may occur in input and product markets, and
government policy. Soekartawi (1986) carried out that farmers will make a decision to avoid or
accept innovation, one of which is influenced by the information they have.

7. Youth capacity in the agricultural activities

Capacity refers to the ability, proficiency, existing capacity, therefore mostly capacity identical
for people who have capability or strength displayed in action (Yunita, 2011). According to the
Organization for Economic Co-operation (1996), capacity development is a description of an
individual or community's ability to solve their problems according to the eras. Sumardjo (1999)
defined capacity as the ability to mobilize and invest various resources owned. In the context of
business success in agriculture sector, capacity is main element in achieving success because it is
related to farmer's ability to identify potential, utilize opportunities, problems fixing and maintain
the sustainability of the resources used in the business

Farmer’s capacity as an actor in farming is responsible for meeting daily life needs and their
family needs. Those descriptions above provides that farmer's capacity or rural communities can be
influenced by individual characteristics, location of residence, technology access, and information
sources.

Research Framework

Based upon theoretical framework explained above, factors strongly expected to affect youth
capacity building included: (1) Individual Characteristics, consisted of: age, level of formal
education, level of non-formal education, farming experience, family support, farming area, and
cosmopolitan level, (2) External factors, contained: farmer group support, availability of facility and
infrastructure, policy support, ease of access to the source of information, extension activity, and
availability of production market. Schematically, the framework of research hypothesis is presented
in figure below:

Figure 1. Hypothetical Framework of Research Variables
Research methods

This research was conducted in three sub-district areas of chili production center in Garut Regency. The location was purposively selected by considering two factors, namely the center area of horticulture, particularly for chili farming and a relatively large number of young people. This quantitative research was carried out for three months (June-August 2019). Research methods applied were survey and direct observation in the field through structured interview using questionnaire (Sugiyono. 2014).

Population of this study included young farmer at age between 15–40 years old, lived in chili farming community, namely in Banyuresmi, Wanaraja, and Cikajang Sub-districts. From the total population of 1,376 people, samples were determined using Slovin formula as follows:

\[
    n = \frac{N}{1 + N(e)^2}
\]

*Description:*

- \(N\) = size of population
- \(n\) = size of sample
- \(e\) = percentage of error tolerance (6%)

Based on the formula above, a total of 233 people were selected as sample. Furthermore, number of sample in each village was proportionally determined as listed in Table 2.

**Table 2. Number of sample in each village**

<table>
<thead>
<tr>
<th>No</th>
<th>Subdistrict</th>
<th>Village</th>
<th>Population (people)</th>
<th>Sample (people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Banyuresmi</td>
<td>1. Dangdeur</td>
<td>148</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Karyasari</td>
<td>160</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Sukakarya</td>
<td>156</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>464</strong></td>
<td><strong>79</strong></td>
</tr>
<tr>
<td>2</td>
<td>Wanaraja</td>
<td>1. Sindang Prabu</td>
<td>129</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Sukamenak</td>
<td>161</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Sindang Mekar</td>
<td>130</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>420</strong></td>
<td><strong>72</strong></td>
</tr>
<tr>
<td>3</td>
<td>Cikajang</td>
<td>1. Mekarsari</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Padasuka</td>
<td>80</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Cikajang</td>
<td>362</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>492</strong></td>
<td><strong>83</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Grand Total</strong></td>
<td><strong>1,367</strong></td>
<td><strong>233</strong></td>
</tr>
</tbody>
</table>

The tool used for collecting data was questionnaire consisted of close-ended questions and statements with available options of answer. The scope of questionnaire which included parameter, indicator, and measurement of each research variable is presented in Table 3.
Table 3. Indicators and parameters of research variables

<table>
<thead>
<tr>
<th>No</th>
<th>Variables</th>
<th>Indicators</th>
<th>Parameters</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Individual Characteristics (X_{1})</td>
<td>Age (X_{11})</td>
<td>1.1.1. Age of respondent (years old) during the interview</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Formal Education (X_{12})</td>
<td></td>
<td>1.2.1. Number of years of education completed</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Organization (X_{13})</td>
<td></td>
<td>1.3.1 Number of participation in organization</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Non-formal Education (X_{14})</td>
<td></td>
<td>1.4.1 Number of weeks of training attended</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Cosmopolitan Level (X_{15})</td>
<td></td>
<td>1.5.1. Interaction with business players 1.5.2. Interaction on the source of innovation</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>2</td>
<td>External Characteristics (X_{2})</td>
<td>Group Support (X_{21})</td>
<td>2.1.1. The existence of material and/or non-material support from farmer group</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Availability of facility and infrastructure (X_{22})</td>
<td></td>
<td>2.2.1. Availability level of facility and infrastructure for farming continuity</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Policy support (X_{23})</td>
<td></td>
<td>2.3.1. The existence of pro-youth policy support</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Ease of access to information (X_{24})</td>
<td></td>
<td>2.4.1. Ease to access information</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Extension activity (X_{25})</td>
<td></td>
<td>2.5.1. Extension activity to encourage young people into farming</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Support from Public Figures (X_{26})</td>
<td></td>
<td>2.6.1. The existence of material and/or non-material support from public figures</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Availability of production market (X_{27})</td>
<td></td>
<td>2.7.1. The existence of market to sell farming production</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>3</td>
<td>Youth Capacity (Y)</td>
<td>Agricultural innovation capability (Y_{1})</td>
<td>1.1. Agricultural innovation capability level</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Technical skill in chili farming (Y_{2})</td>
<td></td>
<td>2.1. Level of technical skill in chili farming</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
<td>Ability to establish cooperation network (Y_{3})</td>
<td></td>
<td>3.1. Number of parties involved in the cooperation</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

Data collection process was done by conducting direct interview with respondents using a compiled questionnaire that has been tested for its validity and reliability. Reliability test resulted in Cronbach’s Alpha 0.771 - 0.899. According to Sugiyono (2011), if Cronbach’s Alpha $>0.7$, the instrument is declared to be stable and reliable, thus it is suitable for data collection. To support primary data directly obtained from respondents, secondary data were collected from report and documentation available in local institution (Office of BP3K, Village, and Subdistrict Office).
Moreover, to obtain a more focused and specific information, deep discussion was conducted through FGD. The process of data collection was helped by several extension workers from BP3K who played role as enumerator. These extension agents were previously received adequate training and direction from researchers concerning the technical aspect to fill out questionnaire. The data successfully collected were further analyzed in two method, namely descriptive analysis to describe the level of youth capacity in agricultural sector and analysis of multiple linear regression to determine factors affecting the capacity.

Results and Discussion
1. Description of Research Variables

Individual characteristic is a part of an individual and attached to a young farmer. Individual characteristic of young farmer in this study consisted of age, level of formal education, participation in farmer organization/institution, non-formal education, and cosmopolitan level. Description of individual characteristics of young farmer is depicted in figures 3 bellow:

Figure 3. Performance of Individual Characteristics
The age of respondents varied at average of 31.47 years old. Several respondents have started performing farming activity since the age of 16 years old by helping parents in the rice field and plantation. Some other young farmers started farming after getting married and having their own family. Finding in the field showed that young married farmers were given responsibility to independently manage their farm land.

All respondents were found to have completed formal education at different level of education. Respondents mostly completed elementary school (SD) or equivalent, yet there were also participant who had graduated from middle school (SMP), high school (SMA), and higher education. Education is the main indicator for human resource development and quality. Formal education is a formal learning activity which is orderly and systematically delivered in various level. Basically, education has function to develop the ability and improve life quality and dignity of both individual and social (Prijono dan Pranarka 1996). Even though the majority of young farmer only completed elementary school, the composition of education level of young farmer was found to be better than the composition of education level of farmers in general. About 80% farmers completed elementary school, while the percentage of young farmer who only completed elementary school was 38%. Result of this study was in line with Wardani dan Anwarudin (2018), Anwarudin dan Haryanto (2018), Nazaruddin dan Anwarudin (2019), but the percentage was still ower than the study conducted by Harniati dan Anwarudin (2018) and Anwarudin et al. (2019) who reported that the majority of young farmer who participated in the community had completed middle school and high school. This difference is understandable since the study performed by Harniati dan Anwarudin (2018) and Anwarudin et al. (2019) was based on young farmers who involved in a community, while respondents in this study were young farmers normally found in rural area.

Most respondents were not yet accommodated in an organization or farmer institution, particularly young farmer institution. Based on information obtained in the field, there was only one young farmer institution existed. There was only a small part of young farmers who participated in farmer institution in general, namely the group of adult farmers. This implicates to suggestion that young people should be involved in farmer group through the development of farmer group with ability to accommodate young farmers or optimize farmer groups as recommended by Anwarudin dan Maryani (2017), Maryani et al. (2017), Anwarudin dan Dayat (2019).

Training, internship, and course are included in non-formal education. It was found that few respondents had attended non-formal education. Training, internship, and course were conducted in various time and topics. Training, for example, is sometimes held for 3 days, or even more than 3 days. However, the majority of respondents had never attended any trainings, internships, and courses. Result of this study was in line with Anwarudn et al. (2019) who reported that only a few young farmers attended training, internship, and course with topics of technical aspect and entrepreneurship, farming and post-harvest technique. Training activity to regenerate farmers held by training center of the Ministry of Agriculture and local government has not yet reached most young farmers despite the fact that distribution of the innovation of agricultural technology still relies on training.

Both value of average and mode of cosmopolitan level of respondent were categorized as high. This achievement should be appreciated since respondents have the potential to search and find information outside their place. Cosmopolitan level is the level of relationship between a person and the world outside his social system, characterized by the distance he had traveled. For respondent who have a relatively higher cosmopolitan level, faster adoption of innovation is possible. Conversely, the adoption of innovation will take longer time for those who are localite(reserved person), imprisoned within their social system due to the absence of new desire to have better life as enjoyed by other people outside their social system (Mardikanto 2009).
Most respondents perceived that external support in agricultural activity was at moderate level. Some farmers have already benefited from government support in the form of training for both technical aspect and entrepreneurship, facility for internship and equipment, even though it was not yet optimal and evenly distributed. Government support was perceived by young farmer community to give more attention to elder generation, i.e. those mature farmers. One of external factors considerably felt by young farmers was the existence of market information support such as information of selling price, information of commodity demand volume, and information regarding buyer/consumer.

Other external factor was the role of extension workers. Extension workers have basically played their role well, yet extension workers who specifically assisted young farmers were rarely found. Agricultural extension workers frequently assisted farmer group with members come from different age, from young farmer to elderly. When the study was conducted in Garut Regency, there was only one young farmer group existed. However, several young people have participated in the existing farmer group. The role of extension worker is expected to be played properly since it could affect the behavior of a person (Amanah dan Sadono 2015), (Maryani, Haryanto, dan Anwarudin 2017), (Anwarudin dan Haryanto 2018), and increase farming capacity (Fatchiya dan Hernanda 2015).
According to respondents, business capacity was mostly classified as moderate (64.81%). Yet, some young farmers also considered that business capacity belonged to the low (8.15%) and high (27.04%) category. Concerning this achievement, business capacity of young farmer should be appreciated considering that training and assistance for young farmers was still rarely done and sometimes carried out in a relatively short time, for about two years. However, increase in business capacity should be continuously done as recommended by Horton (2003) that business capacity development should be done at all time to improve the capability.

Factors Affecting Young Farmer Capacity

This study contained one dependent variable, i.e. acceleration of farmer regeneration and two independent variables, namely individual characteristics and external factor. Individual characteristics included age, formal education, organization, non-formal education, and cosmopolitan level. Result of regression analysis is listed in table below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Beta</th>
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<th>Sig.</th>
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<tr>
<td>(Constant)</td>
<td>13.307</td>
<td>.045</td>
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<tr>
<td>Age ($X_{11}$)</td>
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<td>.011</td>
<td>.031</td>
</tr>
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<td>Education ($X_{12}$)</td>
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<td>.775</td>
<td>.057</td>
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<td>.079</td>
<td>.879</td>
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<td>Course</td>
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<td>.419</td>
<td>.252</td>
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<td>.184</td>
<td>.000</td>
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<td>External Factor ($X_{2}$)</td>
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<td>.761</td>
<td>.000</td>
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<tr>
<td>Capacity ($Y$)</td>
<td>.112</td>
<td>.865</td>
<td>.045</td>
</tr>
</tbody>
</table>

Table 7 depicts factors that significantly affected (p<0.005) capacity building, namely age (0.269), formal education (0.511), cosmopolitan level (0.514), and external factors (0.213), with equation of regression $Y = 13.307 + 0.269X_{11} + 0.511X_{12} + 0.514X_{17} + 0.213X_{2}$, while $R-square = 0.447$. The value of $R-square$ indicated that 44.7 percent of research variables contributed to the finding of this study, while the rest 55.3 percent was from other factors outside the study.

The regression equation above shows the condition if age ($X_{11}$), formal education ($X_{12}$), cosmopolitan level ($X_{17}$), and external factor ($X_{2}$) equal zero, youth capacity ($Y$) will increase by 13.307. Moreover, coefficient $b_1$ was 0.269, indicating the relationship between external factor ($X_{11}$) and youth capacity ($Y$). Thus, if education ($X_{12}$), cosmopolitan level ($X_{17}$), and external factor ($X_{2}$) remain unchanged, for every increase of age ($X_{11}$) by one unit will increase youth capacity ($Y$) by 0.269 unit. Coefficient $b_2$ of 0.511 reflects the relationship between education level ($X_{12}$) and youth capacity ($Y$), hence if age ($X_{11}$), cosmopolitan level ($X_{17}$), and external factor ($X_{2}$) remain unchanged, increase in education level ($X_{12}$) by one unit will increase youth capacity ($Y$) by 0.511 unit. Later, coefficient $b_3$ of 0.514 reveals the relationship between cosmopolitan level ($X_{17}$) and youth capacity ($Y$), therefore if age ($X_{11}$), education level ($X_{12}$), and external factor ($X_{2}$) remain unchanged, for every increase in cosmopolitan level ($X_{17}$) by one unit will increase youth capacity ($Y$) by 0.514 unit. Finally, coefficient $b_4$ of 0.213 depicts the relationship between external factor ($X_{2}$) and youth capacity ($Y$), displaying that if age ($X_{11}$), education level ($X_{12}$), and cosmopolitan level ($X_{17}$) remain unchanged, every increase in external factor ($X_{2}$) by one unit will increase youth capacity ($Y$) by 0.213 unit.
Discussion

1. Effect of Age on Youth Capacity

Age positively affected capacity building (0.269), showing that capacity building will be easier to be applied as young farmers get older, *vice versa*, by taking the optimal age limit into consideration. This situation is understandable concerning the theory that young people are less experienced in certain aspects, but increasing age means more experience and ability to further contribute to their capacity building. Age of a person is also related to physical ability. In fact, when someone is getting older, his motor skill is developed to reach the maximum phase. This statement is accordance with Helfreid Lombo (2016) who mentioned that age affected the motor skill of a person. Study result of Effendy dan Badri (2020) also mentioned that farmer characteristics which included age, formal education, non-formal education, farm area, and cosmopolitan level influenced farmer capacity related to the implementation of balanced fertilization in rice field in Sindangkasih Subdistrict of Ciamis. This result was also in accordance with the conclusion of research conducted by Effendy (2020) in Majalengka Sub-district regarding the role of institution and innovation attribute, that individual characteristics significantly affected the implementation of integrated crop management technology (PTT).

2. Effect of Education on Youth Capacity

Capacity building was also affected by the level of formal education (0.511), hence higher level of education of young people will result in easier implementation of capacity building. This situation was in accordance with the theory that higher level of education obtained by a person equals more knowledge and experience he obtained, thus it is easier for people with higher level of education to develop their capacity. Similarly, Helfreid Lombo (2016) mentioned that intellectual ability is strongly affected by the amount of knowledge mastered by a person, and education is highly required to strengthen intellectuality of a person. This result was also confirmed by the study result of Effendy, Pradiana W, and Rahmawati R (2020) that formal education of young people influenced their independence in performing chili farming in Sindangkasih Subdistrict of Ciamis. Also, Effendy *et all.* (2020) found that formal education significantly affected youth capacity in accelerating farmer regeneration. This finding was also supported the outcome of study by Effendy L, Pradiana W, Haryanto Y and Harischandra T (2020) that formal education of farmer had significant effect on transformation of farmer behavior in performing tomato farming in Mega Mendung Sub-district of Bogor.

3. Effect of Cosmopolitan Level on Youth Capacity

Another individual characteristic that influenced capacity building was cosmopolitan level or the extent of broad knowledge mastered by a person (0.514). This means that higher cosmopolitan level of a person will lead to broader knowledge mastered, thus capacity of cosmopolitan person is easier to be developed. This result confirmed Effendy and Dinia (2020) that cosmopolitan level affected farmer interest to implement the innovation of *ajar legowo* planting system. This finding was similar to the study result found by Effendy dan Badri (2020) that cosmopolitan level influenced farmer capacity. Other similar result was also obtained by Effendy (2020) in Majalengka Regency related to the role of institution and innovation attribute, that individual characteristics in general, and cosmopolitan level in particular, significantly affected the implementation of integrated crop management technology (PTT).

4. Effect of External Factor on Youth Capacity

External factors significantly affected youth capacity with coefficient of 0.213, indicating that external factors which included: farmer group support, availability of production facility and infrastructure, policy support or support from government program, ease of access to information,
extension activity, and availability of production market had significant effect (p<0.005) on youth capacity. This result is in accordance with Effendy dan Badri (2020) who concluded that factor of external factor support, particularly support from government program significantly influenced farmer capacity in implementing an innovation. Similarly, result of previous study conducted by Effendy dan Sudiro, Effendy dan Gumelar (2020) found that environmental factor and external factor significantly affected farmer ability to excellently perform agricultural activity.

Model and Strategy for Youth Capacity Building

Based upon the description above, especially the result of descriptive and regression analysis, a model or strategy to improve youth capacity in performing chili farming in Garut Regency is formulated. The strategy necessarily applied is started by optimizing the support of external factors which included: farmer group support, availability of production facility and infrastructure, government support program, ease of access to information, extension activity, and availability of local production market, as presented in Figure 2 below:

![Figure 2. Model of Youth Capacity Building](Produksi)

...Figure 2. Model of Youth Capacity Building...

Based on the figure above, capacity building strategy for young farmer in chili farming community in Garut Regency included: (1) Young farmer capacity building is intended to young generation since early age, denoting that the study result recommends farmer regeneration accelerates at younger age; (2) Later, the strategy should be implemented by young people with adequate education and broad knowledge (cosmopolite); (3) At last, capacity building should be supported by external factor, such as: farmer group support, availability of facility and infrastructure, policy support, ease of access to information, extension activity, and availability of production market.

Conclusion

Based on the result and discussion above, it is concluded that: (1) Most respondents were relatively young at age between 26–30 years old, education level of Middle School (SMP) and High School (SMA) (54.93%), had low organizational experience but high cosmopolitan level, had adequate level of external support and agricultural capacity level; (2) Factors affecting youth capacity building in chili farming community included: cosmopolitan level, formal education, age, and external support factor; (3) Strategy of capacity building for young farmer is intended for young generation, starting through the determination of potential participants since early age, who have adequate education, broad knowledge, and adequate external support.

Remarks

This study allows further research specifically related to research conclusion, those are: (1) Local extension workers necessarily initiate for the establishment of young farmer groups or encourage rural youth to join existing farmer groups; (2) Extension workers and other stakeholders should provide the rural youth such activity or program of agricultural introduction as early as possible.

Acknowledgement

As for the completion of this study, the authors would like to express gratitude particularly to fellow lecturers of the Study Program of Sustainable Agricultural Extension for support and assistance, hence this study was possible to be completed. The author would also like to thank the
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References


Appendix 1

Result of Regression and Path Analysis

Model 1. Factors affecting X3 (Capacity)

### Model Summary

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
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<td>.442</td>
<td>.432</td>
<td>13.691</td>
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a. Predictors: (Constant), External Factor, Education, Age, Organization, Cosmopolitan level, Course

### ANOVA

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<th>Sum of Squares</th>
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<th>Mean Square</th>
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<td>5711.104</td>
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<td>187.455</td>
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<td>Total</td>
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<td>232</td>
<td></td>
<td></td>
<td></td>
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</table>

a. Predictors: (Constant), External Factor, Education, Age, Organization, Cosmopolitan level, Course

b. Dependent Variable: Capacity

### Coefficients

<table>
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<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
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<th>Sig.</th>
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<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
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<td></td>
<td>Age</td>
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<td>Education</td>
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<td>.095</td>
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<td></td>
<td>Organization</td>
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<td>2.071</td>
<td>-.009</td>
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<td>Course</td>
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<tr>
<td></td>
<td>Cosmopolitan level</td>
<td>.514</td>
<td>.054</td>
<td>.522</td>
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<tr>
<td></td>
<td>External factor</td>
<td>213</td>
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<td>.198</td>
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</table>

a. Dependent Variable: Capacity

Appendix 2.

### Reliability Assessment Result

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<th>Reliability Statistics of Individual Characteristics (X1)</th>
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<tr>
<td>Cronbach’s Alpha</td>
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   - **For Journal** - Surname of the Author » Name of the Author » Year within bracket » Name of the journal » Name of the Topic » Page no.
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