

**PERCEPTION OF CASSAVA (*Manihot Esculenta*) FARMERS ON THE  
ROLE OF FIELD AGRICULTURAL EXTENSION OFFICER IN BUMI  
AGUNG VILLAGE OF TEGINENENG SUBDISTRICT OF PESAWARAN  
REGENCY**

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**ABSTRACT**

Cassava plants contribute greatly in the agricultural development. Cassava plants have many functions besides foodstuffs, such as industries and renewable energy materials. Cassava cultivation must be managed appropriately, because cassava plants are nutrient greedy plants. Good cassava cultivation requires the agricultural instructor involvement in providing information to farmers. The involvement of Instructor in the cassava cultivation is very important to deliver environmentally friendly innovation, considering cassava as one of the leading commodities in Lampung Province. Instructor will disengage the farmer perception and influence the insight way of the farmer against the instructor involvement. The cassava farmer perception against the instructor involvement can be one of barriers or enhancement for farmer involvement in agricultural guidance activities. The purposes of this study were to observe: (1) the characteristics of cassava farmers in Bumi Agung Village, Tegineneng District, Pesawaran Regency, (2) The cassava farmer perception against agricultural instructor involvement, and (3) factors related to the cassava farmer perception. Bumi Agung Village was chosen as the study location as it is the cassava center in Tegineneng District. Cassava farmer sample were taken as many as 36 people from the members of Farmer Group who actively participated in the counseling activities. This study was held in May – July 2018. The results found that the characteristics of cassava farmers belonged to the old category with narrow farming land and largely under educated. The farmer perception against the involvement of counselor to deliver environmentally friendly agriculture was in the medium category and the individual characteristics (age and education) related to the farmer perception.

**Keywords:** Cassava, counselor involvement, environmentally friendly agriculture, perception

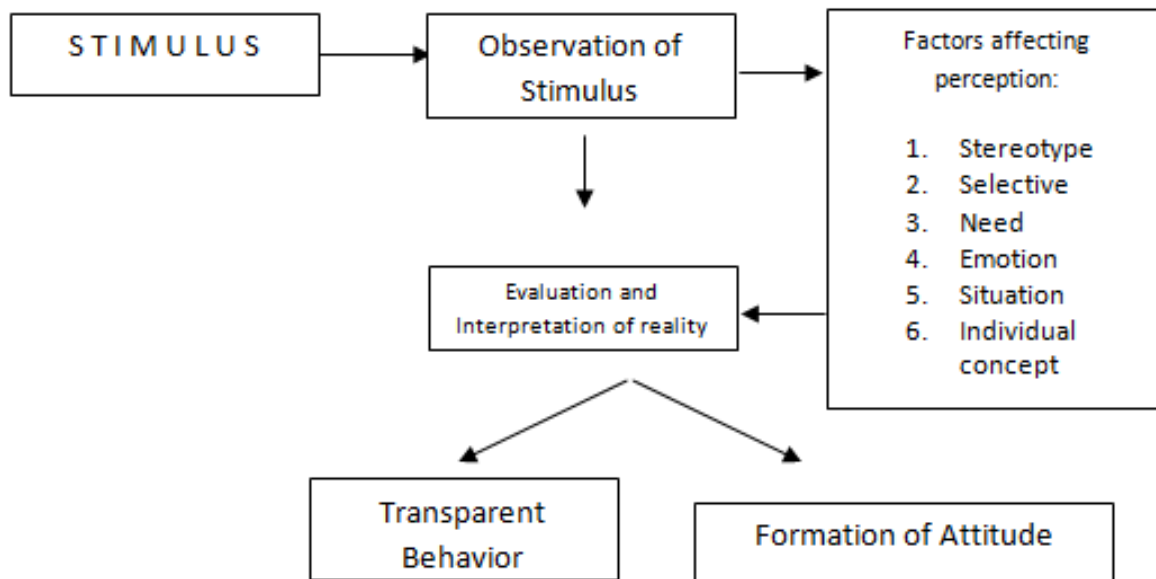
## **1. INTRODUCTION**

Indonesian people mostly work in the agricultural sector, hence agricultural sector plays the essential part in national economy. It is shown by the large number of people or labors who work in agricultural sector and national product originated from the agriculture (Mubyarto, 1989). Cassava is one of main commodities in Bumi Agung Village, thus intensive effort is required to increase cassava farmer income by maintaining the sustainability of natural environment. Cassava production in Indonesia may reach 40 to 60 ton per hectare. However, the highest cassava productivity in Bumi Agung Village only reaches 20 to 30 ton per hectare. Non-optimal cassava productivity in Bumi Agung Village of Tegineneng Subdistrict, Pesawaran Regency is caused by the low level of farmer's knowledge about conducting good and eco-friendly cassava farming practice. Farmers conduct cassava farming only based on experience and habit, and unapplied proper fertilization and plant maintenance. Farmers often harvest cassava before it reaches certain age to be harvested, thus declining cassava quality that will have impact on low price of cassava set by the factory.

Perception is a process of giving meaning to the environment by individual. As each individual interprets stimulus in certain way, different individual will have different interpretation for the same object. Perception is a cognitive process applied by a person to perceive and understand the surrounding world (Gibson, 1989). Cassava farming with the lack of plant processing results in poor soil condition, thus the productivity of land intended for cassava farming continued to decrease for the last several years which led to declining yield, thus extension regarding cassava farming is urgently required. One of villages that regularly conducts cassava farming is Bumi Agung Village located in Tegineneng Subdistrict of Pesawaran Regency. Perception level of cassava farmer on agricultural extension officer in increasing productivity and income of cassava farming is a form and a way of how farmers consider whether implementation of the role of agricultural extension officer is beneficial for farmer or not. Therefore, perception level of cassava farmer on the role of extension officers in performing their job is closely related to the increasing productivity of cassava and eco-friendly farming to support farming sustainability. Perception level of farmer on the role of extension officer in increasing productivity and eco-friendly farming of cassava commodity is interesting to assess, and the problem in this study included: (1) How is the characteristic of cassava farmer in Bumi Agung Village of Tegineneng Subdistrict, Pesawaran Regency, (2) How is the perception level of cassava farmer on the role of extension officer, and (3) Which factors identified di Bumi Agung Village, Tegineneng Subdistrict of Pesawaran Regency, Lampung Province?

## **2. LITERATURE REVIEW**

Perception is an observational process done by individual which is derived from cognitive component. Perception is affected by experience factors obtained in learning process, horizon, and knowledge. Humans observe physiological object with their own way of view colored by their personality. This physiological object could be in the form of certain event, idea, or situation. Experience factors, learning process or socialization provide form and structure to what we see, while knowledge and horizon provide interpretation regarding the physiological object. Through this cognitive component, new idea will emerge followed by the concept of what has been observed (Mar'at, 1988). According to Gibson dkk (1990), perception is cognitive process applied by person to interpret and understand his surrounding world. Individual cognitive description depends on stimulus that will act as trigger. Further, Gibson dkk (1990) illustrate the process that forms individual perception in Figure 1.



**Figure 1: The flow of stimulus that affect individual perception**

Chaplin (1989) mentioned that perception depends on factors of stimulus, way of learning, device, mental state, and motivational factor, thus the meaning of an object or objective event is determined for stimulant condition and organic factor. Perception process is started by attention, that is through the process of selective observation. Important stimulating factor is change in intensity, replication, contrast, and motion, while the organic factors include interest, concern, and habit that has been learned. Wirawan (2014) stated that perception is a process of categorization where organism is stimulated by certain inputs (external objects, event, etc.) and organism responds this input as one of categories of object or event. This connecting process is an active process performed by individual who purposely looking for the right format. Hence,

perception also has inferential characteristic (drawing conclusion). According to Sarwono (1983), factors affecting individual perception are listed as follow:

- a. Attention, people normally do not perceive all stimuli, but only focus on one or two objects
- b. Expectation, when people expect something, stimulate will appear
- c. Need, both immediate and permanent needs of a person will affect his perception of an object
- d. Value system, that is a system of value applied in a society and affects individual perception
- e. Personality trait, also affects individual perception, and
- f. Mental disorder, may lead to wrong perception called hallucination.

Perception is a process that is preceded by the activity of sense organs, that is a process in which stimulus is received by individual through the receiver, i.e. sense organs. This process happens all the time, when individual receives stimulus through his sense organs. These sense organs are device that connect individual and his outside world (Branca, 1964; Woodworth and Marquis, 1957 in Walgito, 2010). Factors affecting perception are internal factor that is inner self that affects individual to perceive anything and external factor, namely factor of stimulus and environment when perception occurs.

### **3. RESEARCH METHODS**

Research location was purposively selected in Bumi Agung Village of Tegineneng Subdistrict, Pesawaran Regency. Tegineneng Subdistrict is an area focused by Pesawaran Regent as the center area for maize and cassava farming, while Bumi Agung is the center area for cassava farming. This study was conducted from May–July 2018, with respondent of farmer group member actively participated in extension activity. Population taken was from the member of farmer group amounted to 367 cassava farmers. According to Arikunto (2006), if population is less than 100, the number of total population will be used as sample. Yet, if the number of population is more than 100, about 10-15% or 20-25% of total population is selected as sample. Based on this consideration, 36 respondents were selected as sample in this study. The data collected in this study included primary and secondary data. Primary data collection in this research was done using questionnaire to obtain information relevant to the objective of study and to obtain information that has both high validity and reliability.

Data were further processed through editing, coding, tabulation, and resulted in interval for each measurement. The data obtained were processed and analyzed both quantitatively and qualitatively. To measure the first objective, the descriptive analysis was performed by providing detailed explanation of of cassava farmer perception level on the role of extension officer, while analysis using Rank Spearman correlation test at  $\alpha = 0.05$  or  $\alpha = 0.01$  was done to answer the second objective. Hypothesis test was conducted using the analysis of Rank

Spearman correlation test at  $\alpha = 0.05$  or  $\alpha = 0.01$  (Siegel 1994). To ease data processing, SPSS (Statistical Package for the Social Science) version 20 was applied.

#### **4. RESULT AND DISCUSSION**

##### **a. Age of farmer**

Most cassava farmers in Bumi Agung Village were included in age group of 15-64 years at percentage of 91.66%, while the age of 8.43% (3 respondents) of cassava farmers were higher than 65 years old. It showed that most farmers in this area were at productive age in term of economy, where farmers had the potential to perform farming activity. Economically productive age means the age group where farmers have higher level of willingness, enthusiasm, and ability to develop farming. They also have great responsibility for business inside and outside agriculture sector. The average age obtained considered productive was 49.02 years old. Based on the result of study, the age of cassava farmers who participated extension activity of cassava farming was included in the productive age group. Economically productive age is grouped into three classifications, namely age group of 0-14 years old that is not yet economically productive, age group of 15-64 years old that is productive, and age group of higher than 65 years old that is no longer productive (Rusli, 2012). Age of a person tends to determine difference made by individual. Age could affect the way someone perceives his surrounding environment (Thoha, 2008). Moreover, perception depends on someone's experience, such as broad culture experience, habit of conducting general perception, different practices as well as learning tools or guidance, and manipulation of physiological finding. Expansion of perception determines basic assumption related to individual experience and environment. Differences among individual perceptions caused by cultural differences.

##### **b. Cultivated area**

Land area is the area owned and utilized by farmers to perform cassava farming. Land area owned by farmers will affect production quantity and farmer income. Classification of land area divides farmers in three categories, namely subsistence farmers for farming area with 0.10-0.50 hectare, small farmer with 0.51-1.00 hectare, and large farmer with more than 1.00 hectare (Sastratmadja, 2010). In average, cassava in Bumi Agung Village, Tegineneng Subdistrict in 2018 was cultivated in area of 0.75 ha. Thus, they were classified as small farmers. This cultivated area is one of challenges to take such opportunity or chance as an effort to increase the productivity of cassava farming. Large cultivated land will increase the production and income of cassava farming. Based on the result, average cultivated land was found to be 0.75 ha, thus farmers in this study were classified as small farmer. Increased cassava farming area will increase cassava production that will eventually increase the farmer income, thus increasing

purchasing power of farmer and create impact on the increasing food availability for farmer household which means an increase in cassava farmer household food security (Murniati et al., 2019) .

### **c. Level of formal education**

The level of formal education of respondent is the level of education completed by respondent, which is classified into Elementary School (SD), Middle School (SMP), High School (SMA), Vocational School (DIII), and University Undergraduate (S1). Based on the result of study on 36 respondents, most respondents (45%) or 16 cassava farmers completed Elementary School. Education level of respondent is expected to be related to perception level on the role of extension officer. People behavior is shaped through many things including learning. People with higher education level are considered to have broader knowledge compared to those with lower education level (Robbins, 2003). Education level of cassava farmers was found to be low due to their old age that is related to low awareness of education. One of factors affecting low level of farmer education is motivation to immediately work in order to help parents and generate income faster. According to Musoleha (2014), education level significantly affected knowledge level of PKBL. Higher level of education results in broader knowledge obtained and more critical to information.

### **Perception of farmer on the role of extension officer**

Perception is a process that is preceded by the activity of sense organs, that is a process in which stimulus is received by individual through the receiver, i.e. sense organs. This process happens all the time, when individual receives stimulus through his sense organs. These sense organs are device that connect individual and his outside world (Branca, 1964; Woodworth and Marquis, 1957 in Walgito, 1999). Factors affecting perception are internal factor that is inner self that affects individual to perceive anything and external factor, namely factor of stimulus and environment when perception occurs.

Farmer participation in extension activity will have impact on cassava farming activity. Perception level of farmer on the role of extension officers in performing their job was as follows: 26 respondents (72%) showed excellent perception level; 8.3% of respondents showed fairly good perception, while the rest showed poor perception level. This finding indicated the extension officer played their role well. However, good perception is not enough, thus extension officer should increase their role in performing extension activity to increase the perception level to excellent level. According to Listiana et al (2018), the capacity level of extension officer is significantly correlated to the farmer satisfaction on the extension activity. The role of extension as a pillar in increasing farmer capacity has also experienced a shift. Implementation of

extension in an era before Indonesian law establishment No. 16 in 2006 shows that agricultural extension officers have strategic role in supporting and guarding the program in order to achieve four points of successful agricultural development, namely: (1) self-sufficiency and sustainable self-sufficiency; (2) food diversification; (3) increased added value, competitiveness and exports; and (4) increased farmer's capacity. However, after the implementation of Indonesian law No. 16/2006, extension officers are required to have high capacity to identify the needs of the main actors while searching for information to provide information as alternative problem solutions for farmers.

### **Factors related to the perception of cassava farmer on the role of agricultural extension officer**

According to Robbins (2003), factors affecting perception include: (1) Perception comprised attitude, needs, interest, experience, and expectation. People behavior is shaped through many things including learning. People with higher education level are considered to have broader knowledge compared to those with lower education level. Broad insight helps a person to be responsive to accept new object. Needs or unfulfilled motives stimulate a person to use a strong influence on his perception. Needs can affect the formation of high perception to quickly accepted concepts. Experience tends to perceive someone about things where he is related or interested. People's interests are quite different as someone records in certain situation can be different from what is perceived by others. (2) Factors related to situation, such as time, condition or place, and social condition. Elements in surrounding environment also affect individual perception. Time is where an object or event observed cannot affect attention, similar to location and any number of situational factor. (3) Factors concerning target, namely new things, motion, sound, size, background, and closeness. The characteristics observed may affect what will be perceived. New things could draw more attention compared to the old one. Close objects tends to be perceived together and not separated. Correlation between variable of age, cultivated area, and education level and perception of farmer on the role of extension officer was measured using Rank Spearman correlation test. Statistical result of factors expected correlated with the perception of farmer on the role of extension officer is presented in Table 1.



**Table 1: Correlation between individual characteristic and perception of cassava farmer on the role of extension officer**

No	Individual characteristic	Coefficient of correlation Of perception of cassava farmer
1	Cassava farming experience	-0.042
2	Age of farmer	-0.488*
3	Cassava farming area	0.241
4	Education level of cassava farmer	0.573**

Note:

\* Significantly correlated at  $\alpha = 0.05$

\*\* Significantly correlated  $\alpha = 0.01$

Based on the result of the correlation test between independent and dependent variable presented in Table 1, two factors that were found to have correlation with the perception level of cassava farmer on agricultural extension officer role were age and education level. Factors significantly related to perception level of cassava farmer on the role of agricultural extension officer includes respondent age and level of formal education. Correlation between the two independent variables and perception level of cassava farmer on the role of agricultural extension officers in performing their job is described in this section.

Experience of respondent in conducting cassava farming was found negative but significantly correlated to the perception of farmer on the role of extension officer in an effort to motivate farmer to apply new technology (eco-friendly) in cassava farming. It means that longer farming experience results in lower implementation of new innovation. This result is in line with the study conducted by Listiana (2017) which showed the possibility that farming experience is received over generations (tradition) thus it is difficult to change farmer behavior to control plant-disturbing organisms in an integrated way. The role of extension officers is seen from their activeness in performing the basic tasks and functions according to the Law No. 16/2006 about agricultural extension system to increase farmer's capacity in performing eco-friendly cassava farming.

Perception of farmer on the role of extension officers in performing their job was assessed by action conducted by extension officer by helping farmers to analyze problems found in their cassava farming area and providing motivation for farmers to continuously conduct ecofriendly farming. Result of analysis shows correlation of -0.488\* between age and perception of farmer on the role of extension officer which indicates that younger farmers show better perception on the extension activity. Age of a person could affect the way he perceives the environment (Thoha, 1986).



The analysis result shows rs value at 0.573\*\*, indicating significant correlation between the education level of cassava farmers and their perception on the role of extension officer in performing eco-friendly cassava farming. Through education, cassava farmers in Bumi Agung Village, Tegineneng Subdistrict were found to have good perception on the role of extension officer. Education level of cassava farmer will affect the thinking process and reasoning of individual towards an object. Along with the sufficient knowledge and reasoning ability, someone will be able to analyze, assess, and further make decision for a good action. Based on analysis result, average education level completed by respondent was elementary school, thus they have the ability to form positive perception pattern concerning the role of extension officer.

## **5. CONCLUSION**

Most cassava farmers in Bumi Agung Village were included in age group of 15-64 years at percentage of 91.66%, while the age of 8.43% (3 respondents) of cassava farmers were higher than 65 years old. The average age obtained considered productive was 49.02 years old. Land area is farming area owned by farmers to conduct cassava farming. Land area owned by farmers will affect production quantity and farmer income. In average, cassava in Bumi Agung Village of Tegineneng Subdistrict in 2018 was cultivated in area of 0.75 ha. Thus, they were classified as smallholder farmers. Education level of cassava farmers was found to be low due to their old age related to low education awareness. One factors affecting low level of farmer education is motivation to immediately work in order to help parents and generate faster income. Perception level of farmer on the role of extension officers in performing their job was quite good proved as the extension officers had played their role well. Factors affecting perception of extension officer included the age and education level of cassava farmer.

## **REFERENCES**

- [1] Mubyarto. 1997. *Pengantar Ekonomi Pertanian*. Jakarta: LP3S. 245 Hlm.
- [2] Gibson, et al. 1989. *Organisasi (Perilaku, Struktur, Proses) Edisi Kedelapan*. Jakarta: Bina Aksara ,
- [3] Mar'at. 1988. *Sikap Manusia, Perubahan Serta Pengukurannya*. Ghalian. Bandung.
- [4] Chaplin JP. 1989. *Kamus Lengkap Psikologi*. Terj. Dr Kartono dan Kartini. Jakarta. Pt. Raja Grafindo Persada.
- [5] Wirawan. 2014. *Kepemimpinan, Teori, Psikologi, Perilaku Organisasi, Aplikasi dan penelitian: Contoh Aplikasi untuk Kepemimpinan Wanita, Organisasi Bisnis, Pendidikan dan Militer*. Rajapindo Persada. Jakarta

- [6] Sarwono SW. 1983. Pengantar Umum Psikologi. Bulan Bintang. Jakarta
- [7] Walgito B. 2010. Pengantar Psikologi Umum. Yogyakarta: Penerbit Andi.
- [8] Arikunto S. 2006. *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: Rienka cipta. 376 Hlm
- [9] Siegel, S. 1994. *Metode Statistika Non-Parametris*. Jakarta: PT Gramedia Pustaka
- [10] Rusli S. 2012. Pengantar Ilmu Kependudukan. LP3ES. Jakarta.
- [11] Thoah, M. 2008. Perilaku Organisasi; Konsep Dasar dan Aplikasinya. Ed ke-18. Jakarta (ID): PT Raja Grafindo Persada.
- [12] Sasraatmadja E. 2010. Penyuluh Pertanian, Falsafah, Masalah dan Strategi. Bandung. Alumni
- [13] Murniati K, Widjaya S, Rabiatal A, Listiana I. 2019. Climate Change Adaptation Strategy for Sustainability and Food Security of Cassava Farming Households in Lampung, Indonesia. *Jurnal of Agriculture Extension* 23(2):138-146
- [14] Robbins SP. 2003. Perilaku Organisasi. Index. Jakarta.
- [15] Musoleha T, Hasanuddin T, Listiana I. 2014. Persepsi Masyarakat terhadap Program Kemitraan dan Bina Lingkungan (PKBL) PTPN VII Unit Usaha Rejosari Kecamatan Natar Kabupaten Lampung Selatan. *JIAA* 2(4):390-398
- [16] Listiana I, Sumardjo, Sadono D, Tjiptopranoto P. 2018. Hubungan Kapasitas Penyuluh dengan Kepuasan Petani dalam kegiatan penyuluhan. *Jurnal Penyuluhan* 12 (2):244- 256
- [18] Listiana, I. 2017. Kapasitas Petani dalam Penerapan teknologi Pengendalian Hama Terpadu (PHT) padi sawah di Kelurahan Situ Gede Kota Bogor. *Agrica Ekstensia* 11(1)