# THE ANALYSIS OF FACTORS AFFECTING FARMERS' ACCESSIBILITY TOWARDS MARKETS AND ITS RELATION TO FARMERS' BARGAINING POSITION

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**Abstract:** As the largest banana producing district in Central Kalimantan, currently most of the banana farmers in Seruyan Regency still rely on middleman to collect their crops. There are several factors that allegedly influence farmers in determining the choice of selling their crops to middleman rather than selling directly to the market. The purpose of this research is to analyze the factors that influence the accessibility of farmers to the market and to analyze the relationship between farmer's market accessibility and the bargaining position of farmers toward middleman. The respondents were farmers from the largest producer of banana kepok namely Seruyan Hilir and Seruyan Hilir Timur sub-districts. The method usedwas purposive sampling method and the data was collected in July 2017. The data were analyzed using partial structural equation model (PLS-SEM) with the main variablesare motivation, knowledge, ability to access infrastructure, bond with the middleman, involvement in farmer group, negotiation ability, market accessibility of farmers to the market. The bargaining position of farmers is significant effect on the accessibility of farmers to the market. The bargaining position of farmers is significantly influenced by the accessibility of farmers to the market.

Keywords: market, bargaining position, accessibility, middleman, PLS-SEM

Abstrak: Sebagai kebupaten penghasil pisang terbesar di Kalimantan Tengah, saat ini sebagian besar petani pisang di Kabupaten Seruyan masih mengandalkan pedagang pengumpul sebagai penampung hasil panen mereka. Terdapat beberapa faktor yang diduga mempengaruhi petani dalam menentukan pilihan menjual hasil panen mereka kepada pedagang pengumpul dibanding mereka jual sendiri ke pasar. Tujuan dari penelitian ini adalah untuk menganalisis faktor-faktor yang mempengaruhi aksesibilitas petani terhadap pasar dan untuk menganalisis hubungan antara aksesibilitas pasar dengan posisi tawar petani terhadap pedagang pengumpul. Sampel petani yang dijadikan responden diambil dari wilayah yang merupakan penghasil pisang kepok terbanyak yaitu kecamatan Seruyan Hilir dan Seruyan Hilir Timur menggunakan metode purposive sampling sebanyak 100 sampel an pengambilan data dilakukan pada Bulan Juli 2017. Analisis data menggunakan model persamaan structural parsial (PLS-SEM) dengan variable utama yaitu motivasi, pengetahuan, kemampuan akses sarana prasarana, ikatan dengan pedagang pengumpul, keterlibatan dalam kelompok tani, kemampuan negosiasi, aksesibilitas pasar, dan posisi tawar petani. Berdasarkan hasil analisis diketahui bahwa pengetahuan, akses sarana prasarana, motivasi dan ikatan dengan pedagang pengumpul berpengaruh signifikan terhadap aksesibilitas petani terhadap pasar. Adapun posisi tawar petani secara signifikan dipengaruhi oleh aksesibilitas petani terhadap pasar.

Kata kunci: pasar, posisi tawar, aksesibilitas, pedagang pengumpul, PLS-SEM

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# **INTRODUCTION**

Since the last few years, Seruyan Regency has been able to contribute as the largest banana production in Central Kalimantan compared to other districts. Based on data of Central Kalimantan fruit production in 2015, banana production contribution of Seruyan Regency is as much as 67,343 quintal. When compared to other districts, the largest production contribution is only 36,834 quintals given by Kotawaringin Barat Regency (Central Kalimantan BPS, 2016).

The high production of bananas in Seruyan Regency does not seem to be proportional to the amount of fruit demand by local consumers. Consequently, the bananas produced from this district are distributed almost mostly to markets outside the city. There are three main destination cities of banana distribution produced by Seruyan Regency; they are Sampit, Palangkaraya, and Banjarmasin.

The relatively long distance between the farmers' lands and the outside market area (closest distance + 170 km) makes most farmers unable to reach the market. This condition makes the farmers use intermediary traders as a bridge between farmers and consumers. Permadi (2017) shows that banana kepok farmers in Seruyan District mostly prefer to use distribution channel (Farmer- Middleman-Retailer- Consumers) rather than distribute them directly (Farmers-Consumers).

There are some positive and negative impacts with the existence of marketing agency for farmers. In fact, marketing agencies can help farmers reach consumers especially at locations which are quite far from farmers. On the other hand, the involvement of marketing agencies, as intermediary traders or middlemen (as collectors and retailers traders), will reduce the share received by farmers because there are price differences between farmers and consumers. As Karthikeyan (2016) said that the length of chain from farmers to the consumers can take most of the share that should be accepted by the farmers. According to a research conducted by Permadi (2017), it shows that the consumer and farmer price margin in some distribution channels of banana kapok from Seruyan regency ranges from Rp1,723.2-Rp2,065.6 per kilogram.

Market access is no less important than production issues because a market is a place where the crop production from farmers can be converted into benefits and contributes to the obtained income and prosperity of the farmers' families. Therefore, the ability of farmers to access the market largely determines how much the share will be received by them.

According to Soekartawi (2002), one of the weaknesses of agricultural systems in developing countries, including Indonesia, is the lack of attention to the marketing field. Since farmers do not get market information clearly, it finally resulting in the economic opportunity which is quite difficult to achieve. Heinmen (2002) argues that the reason why most rural people cannot improve their lives is because they face difficulties in accessing the market. They can get agricultural input but they do not have the ability to sell to consumers. Magesa et al. (2014) says that due to poor access to agricultural markets, rural farmers have for long relied on traders and other middlemen to gain more profit.

Opening market access is one of the obligations, especially for the government as a stakeholder. So far, the inability of farmers to access the market is only considered as the inability of farmers in accessing transportation facilities. In fact, there are several other factors that may also have big roles in determining the ability of farmers to access markets. Understanding the factors which can influence market access is really important so that the policies taken can be targeted according to actual needs.

According to Gatare et al. (2015), the problem of market access can be considered based on the following three dimensions: physical access to markets; market structure; and lack of skills, information and producer organizations. Physical access in question includes the access to transportation infrastructure. The information included is the knowledge of price and competitors. In relation to producer organizations, Irianto (2008) also states that the formation of farmer groups is one strategy that can be done to help farmers access the market. Suryono et al. (2016) suggests that motivation also has an effect on increasing market access capability.

The ignorance and inability of farmers to reach the consumer market make farmers depends on intermediary traders. This also affects farmers who do not have a strong bargaining position against intermediary traders. Often, banana kapok farmers in Seruyan Regency cannot do much and take for granted the prices set by middlemen. Puspitasari (2015) states that one of the problems which farmers often face in Indonesia is that farmers still have a weak bargaining position in negotiating the selling price of their crops. The weak bargaining position of farmers is one of the obstacles in increasing farmers' income.

Based on the background above, the objectives of this research are: 1) to analyze the factors which influence the accessibility of banana Kepok farmers in Seruyan Regency to the market, and 2) to analyze the relationship between market accessibility and the bargaining position of the farmers to the collecting traders.

### **METHODS**

This research was conducted in Seruyan Regency, precisely in two sub-districts of biggest banana producers; they are Seruyan Hilir and Seruyan Hilir Timur Sub-district. The samples of farmers taken as respondents, were taken using purposive sampling method in accordance to the criteria of banana kepok farmers as many as 100 samples of farmers. The data collecting activity in respondents was conducted in July 2017.

The variables taken in this study were divided into two groups namely the main variables and characteristic variables. The main variables were the motivation, knowledge, and availability to infrastructure access, bonding with middlemen, activeness in farmer group, negotiation ability, market accessibility, and bargaining position of farmers. Meanwhile, the characteristic variables included were age, banana kapok farming experience, education, and number of family members.

 Table 1. The main research variables of the analysis factors which are affecting farmers' accessibility to market and its relation with farmers bargaining position to middlemen.

Latent variables	Code	Indicators
Motivation: is the driving force within the farmer that		Encouragement because they do not want to bother
insists the action to sell the crop to the middlemen	MO2	Encouragement to get income quickly
		Encouragement to get income easily
Knowledge: is all of the information owned by farmers	PE1	Knowledge about market target
about anything related to selling their crops	PE2	Knowledge about market price
	PE3	Knowledge about entering market
		Knowledge about transaction method
Ability to access infrastructure: is related to the ability	AK1	Ability to access transportation
of access to transportation facilities, communications, and information facilities that support marketing activities	AK2	Ability to access communication facility
	AK3	Ability to access information
Relation with middlemen: is about the mutually binding relationship between farmers and collecting traders	IK1	Availability of agreement with middlemen
	IK2	Availability of loan from middlemen
or middlemen that are one-sided or two-sided which can hinder the farmers' movement in marketing their agricultural products.		Availability of pressure from middlemen
Activity in farmer groups: is the involvement and livelihood of farmers in farmer organizations from the	KL1	Active in the organization of farmer groups
	KL2	Active in the marketing organization
lowest level to the highest level	KL3	Active in embracing farmers
Negotiation ability: is the ability of farmers in the bargaining process by negotiating to reach agreement of	NG1	Ability to bargain
	NG2	Ability to communicate
both parties	NG3	Ability to influence middlemen
Market accessibility: is the ability of farmers to access	AS1	Ease in entering the market
markets and all things related that can facilitate farmers	AS2	Ease in reaching the market
to sell their crops	AS3	Ease in getting market information
	AS4	Ease in distributing production to market
The bargaining position of farmers: is the ability of	PO1	Participating in price determination
farmers to dominate the decision-making process of the	PO2	Participating in the determination of purchase method
crops sale and the ability for not to be easily influenced and or suppressed by others		Strength in facing the pressure of middlemen

Data was collected using questionnaires and analyzed using Structural Equation Modeling (SEM) with alternative method of Partial Least Square (PLS) using SmartPLS 3.0 software application. According to Gultom et al. (2015), Abdillah and Jogiyanto (2015), one of the advantages of PLS was its reliability in testing predictive models without basing on assumptions, could be used to predict models with weak grounded theories, and could be used for small sized samples. This study had a framework of model analysis that aimed to facilitate researchers in understanding the purpose of research. Indicators available in any exogenous and endogenous latent variables that were analyzed with reflective indicators as a whole they are presented in Figure 1.

The hypothesis proposed was: H1: motivation had Influenced the market accessibility; H2: knowledge had influenced the market accessibility; H3: Infrastructure access ability had influenced the market accessibility; H4: relation with middlemen had influenced the market accessibility; H5: liveliness in farmer groups had influenced the market accessibility; H6: negotiating ability had influenced the market accessibility; H7: market accessibility had influenced the bargaining position of farmers.

# RESULTS

#### The Characteristics of Respondents

Based on the research results on the respondents characteristics who were, still in the range of productive ages, despite there were about 28.00% of farmers whose aged were more than 50 years. The level of farmers' education was mostly low and there were even 12.00% of banana kapok farmers who did not complete elementary school (SD). The number of dependents of respondents mostly was more than 2 members in one family. Observing most of the respondent's ages, it was reasonable that the respondents had more than 2 family members despite there were some respondents who only had one or two dependents. Viewed from the experience, farmers apparently had enough experience in banana kapok farming in which there were 62.00% of farmers had experience more than 10 years.

#### Farmers' Accessibility toward Market

Based on the results of the measurement model test using SmartPLS3 application as shown in Figure 2, it shows that there are 2 indicator variables (IK3, and PO3) which have less than 0.6. Loading factor value According to Ghozali and Latan (2015) a tolerable loading factor value for explanatory research must be between 0.6–0.7, so variable with loading factor less than 0.6 should be eliminated from the model to be able to perform hypothesis testing.

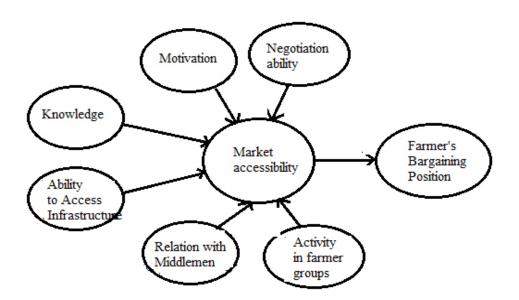


Figure 1. Research framework

Characteristic	Number (people)	Percentage (%)	Characteristic	Number (people)	Percentage (%)	
Ages			Experience			
19–24	8	8.00	< 5	12	12.00	
25–35	27	27.00	5 - < 10	26	26.00	
36–50	37	37.00	10 - < 15	45	45.00	
51-65	25	25.00	15 - < 20	11	11.00	
>65	3	3.00	> 20	6	6.00	
Education			Number of Family Member			
No School	12	12.00	1	1	1.00	
SD	43	43.00	2	17	17.00	
SMP	17	17.00	3	24	24.00	
SMA	24	24.00	4	35	35.00	
РТ	4	4.00	> 5	23	23.00	

Table 2. The characteristic of banana kepok respondents

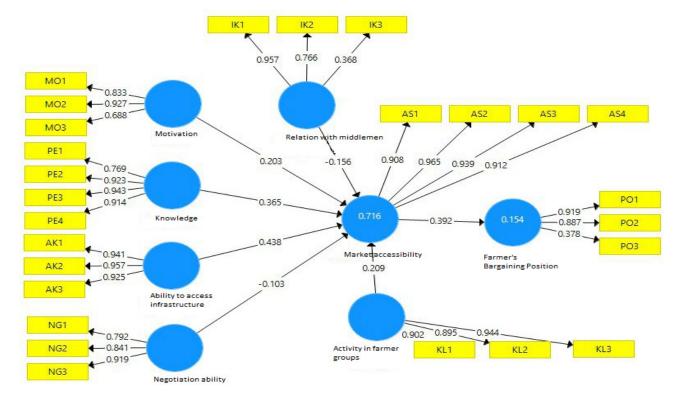


Figure 2. The test result of measurement model

In addition to the loading factor value, convergent validity can also be seen from the Average Variance Extracted (AVE). In this study, the AVE value of each construct is above 0.5. Therefore, there is no problem of convergent validity in the model being tested. The reliability value using both Cronbachs Alpha and Composite Reliability of each construct exceeds 0.7 so it can be said reliable. Table 3 shows the validity and reliability values for each of the test criteria.

The evaluation of the next structural model was to see the estimated value of the path coefficient including the real effect of a latent construct with other latent constructs. This evaluation would observe the output of SmartPLS 3.0 on bootstrapping to evaluate the direct effect, the T-Statistic value used as the basis for assessing the significant effect of a construct.

After conducted the hypothesis test using Bootstrapping method in SmartPLS 3 application, it was known that the bonding variables with middlemen, motivation, knowledge, ability of infrastructure access had significant impact on farmer accessibility to banana kepok market in Seruyan Regency. Negotiation capability had no significant impact on the farmers ability to access the market. This could be seen from the value of T count of 1.670 < the t value on the table on  $\alpha 0.05$  is 1.96. Similarly, for the variable of liveliness in farmer groups also did not show significant influence or role because the value of t count was only 1.480.

Farmers with narrow land who had less capital entrusted their agricultural production continuity to middlemen / traders. This resulted that during the post-harvest time of small-scale farmers were unable to determine freely where the farmers might sell their crops (Mahmudah and Harianto, 2014). The descriptive analysis showed that 25% of banana farmers in Seruyan District were connected to collecting traders or middlemen because of the agreement among them, despite it was not in the form of a written agreement but it became a scourge and fear for the farmers. They worried that in the future the middlemen would no longer take their crops. On the other hand, 14% of the farmers were also tied to capital loans with collecting traders or middlemen, so farmers also had to sell their crops to them, even though they knew there was a relatively large price difference on the market. The results showed that the relation to middlemen had a significant impact on market accessibility for farmers.

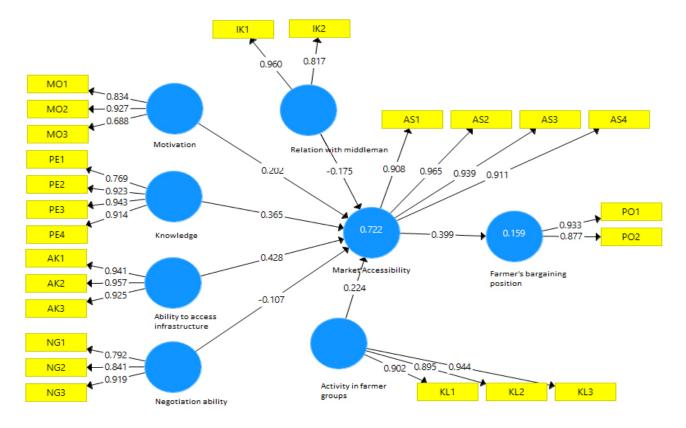


Figure 3. The test result of improved measurement model

Table 3	The analysis	s result from	some criterions	of test measur	ement model
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Variables	Cronbachs alpha	Composite realiability	AVE	Root AVE
Motivation	0.804	0.860	0.676	0.822
Knowledge	0.911	0.938	0.792	0.890
Ability to access infrastructures and facilities	0.936	0.959	0.886	0.941
Relation with middlemen	0.767	0.885	0.794	0.891
Activity in farming group	0.901	0.938	0.835	0.914
Ability to negotiate	0.816	0.888	0.726	0.852
Market accessibility	0.949	0.963	0.867	0.931
Bargaining position of farmers	0.784	0.901	0.819	0.905

The farmers' motivation was also a variable that has a significant influence on market accessibility. There were as many as 79% of respondents who did not want to be bothered in selling their own crops outside the region. They thought that it was better to use their time to take care of their farms or other necessities rather than to sell their crops out of the area that took a long time because the location was quite far. It was in line with the evidence found by Makura et al. (2004) in Mukwevho and Anim (2014) that there was a negative correlation between farmland distance and market accessed by farmers.

Not all of the farmers had facilities to market their crops including the transportation, communication, or information. A very vital factor was the transportation in which usually only those who had their own vehicle (a pickup van or truck) that could sell their bananas out of the region. Farmers who did not have vehicles or farmers who could not access transportation easily, usually preferred to sell their bananas to collecting traders or middlemen. The result of descriptive analysis showed that 68% of farmers had difficulties in accessing transportation facilities.

In the modern era where information is widely open, it is actually not too difficult for farmers to access all information related to the market. The Internet network coverage which has been reaching countryside areas can actually be really helpful for farmers to access various information including the market information. The problem that occurred recently was that there were only several farmers who were willing and able to use the available infrastructure facilities in accessing the information to support their farming activities. It could be seen from the respondents where there were only 22% of respondents who were able to access the available information facilities. Whereas, the ability to access the facilities was not only about accessing transportation facility, but communication and information were also two factors that played a big role in improving market accessibility. The research results by Urquieta and Nadezda (2009) indicated that farmers with cell phones would have better access to market information, which would influence their decisions on the site and price of selling their products. Mobile phones also allowed the farmers to make transactions easily so that the product marketing would be more efficient.

Another variable that also affected the market accessibility was the knowledge variable. The role of knowledge factor was very significant (P-value 0.002) than other influential factors. This was in line with Njeru statement (2015) that the limited knowledge of the market would make it difficult to access the market itself. Farmers who had knowledge of potential buyers, prices, transaction methods, competitors, and how to enter the market would have more easy access to the market than farmers who did not have knowledge about some of those things. Farmers who had no knowledge usually would get difficulties and would usually fail to access the market. Syahza (2003) one of the main problems faced in the marketing of agricultural products was the low quality of human resources (especially farmers). Farmers' guidance tended to cultivation practices and did not lead to marketing practices. This caused the farmer's knowledge about marketing was still low, so the subsystem marketing became very weak and it seemed that the agribusiness system should be well built. Table 4 and Figure 2 show the results of the structural model testing that have been made.

#### Farmers' Bargaining Position Against Middlemen

Farmers' bargaining position in this study was the ability of farmers to dominate the decision-making process on the sale of crops and the ability not to be easily influenced and or suppressed by other parties in this case collecting traders or middlemen. Based on the results of the descriptive analysis, there were about 42% of respondents who said that they were not involved in determining the price of their banana Kepok to middlemen. It meant that farmers just followed the price set by middlemen without bargaining. In the case of determining the method of payment, whether it should be paid directly or paid in the future, there were about 48% of the farmers who let the middlemen determine the payment method.

If it was seen from how strong the respondents got the influence or pressure from the middlemen, it showed that there were 23% of farmers who were afraid of the threat from the middlemen and worried if the middlemen would not buy their bananas again in the future. According to Ranjan (2017), one condition that could weaken the bargaining position of farmers was the condition where the intermediary traders or middlemen might leave the farmers to look for other areas that they considered more profitable.

Latent variable	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistic (IO/STDEVI)	P Value
H3 : Access to Infrastructures $\rightarrow$ Market Accessibility	0.428	0.363	0.184	2.321*	0.021
H4 : The Relation with Middlemen $\rightarrow$ Market Accessibility	-0.175	-0.167	0.074	2.366*	0.018
H5 : Activity in Farming Group $\rightarrow$ Market Accessibility	0.224	0.234	0.154	1.457	0.146
H6 : Negotiation Ability $\rightarrow$ Market Accessibility	-0.107	-0.089	0.064	1.680	0.094
H1 : Motivation $\rightarrow$ Market Accessibility	0.202	0.162	0.100	2.014*	0.045
H2 : Knowledge $\rightarrow$ Market Accessibility	0.365	0.386	0.118	3.085**	0.002
Square correlation (R2)					
Market Accessibility= 0,722					

Table 4. The result of bootstrapping on the structural model between market accessibility and the affecting factors

Referring to the data shown in Figure 2, it could be concluded that the bargaining position of the respondent farmers i.e. banana kapok farmers in Seruyan Regency was relatively still weak. It was considered weak because there were still many farmers who just took for granted on what the middlemen determined.in terms of pricing and payment methods. On the other hand, although the number was not too significant, it could indicate the weak bargaining position of farmers.

# The Influence of Accessibility on Farmers' Bargaining Position

The accessibility of farmers toward the market had a very real influence on the bargaining position of farmers with the middlemen with P-value 0.000 (Look at Table 5). If farmers had to sell their crops to middlemen, farmers with high market accessibility would have dominance in pricing and payment method decision with the middlemen. On the otherhand, farmers with low market accessibility would easily be controlled or influenced especially those who were already dependent on middlemen. Danau et al. (2011) suggested that farmers could use several strategies to increase their market power, either using collective strategies or individual strategies. One of the individual strategies that could increase the market power of farmers was by increasing direct production access to consumers. This was in line with the research conducted by Svensson and Yanagizawa (2009) and Shimamoto et al. (2014) who found that better access to market information could improve bargaining position of farmers, so farmers could sell their products at higher prices. Similarly, Yovo (2017) also found that the opening of market access, especially access to price information could improve the bargaining position of farmers.

# **Managerial implications**

The inability of farmers to access the market was not only caused by the existence of bonds or relation between the farmers and the middlemen or the inability of farmers to access transportation facilities, but there were also other factors that could influence farmers' decision to sell their crops to the middlemen.

The expected managerial implication of this research is that there must be an understanding of marketing management, both on farmers and related stakeholders, so that farmers can enjoy a reasonable part of their farming activities. If it is seen from the factors that have big impacts on the accessibility of farmers to the market, the government or related stakeholders have to pay attention to the steps in order to improve farmers' knowledge on all good information about target market objectives, price, competitors, transaction method and all things related to market.

In addition, in improving farmers' knowledge of the market, it is also important to increase farmers' access to markets by increasing farmers' ability to access existing infrastructure. The availability of transportation, communication, and information infrastructure will not be useful and even become useless if the farmers do not know how to use it.

Training on farmers is not only focusing on improving cultivation skills, but they must also be directed to improve the ability in utilizing the means or facilities to support marketing activities so the farmers can access the market easily. If the farmers have access to large markets, they will have great bargaining power, so they will not be easily deceived and suppressed by the middlemen. Although the farmers still use middlemen to market their crops, the dominance of pricing and payment methods is still in their hands, ultimately there will be a reasonable sharing of the benefits from the products produced.

#### **CONCLUSIONS AND RECOMMENDATIONS**

#### Conclusions

Based on the objectives and the results of the discussion in this study, it can be concluded that the knowledge variables, access to infrastructure, motivation, and bonding with middlemen have a significant impact on the accessibility of farmers to the market. Meanwhile, the variable of negotiation ability and activeness in farmer group do not have an influence to farmer ability in accessing market. From all influential variables, knowledge variable has the most significant influence toward the market accessibility. Market accessibility has a relation and is a factor that significantly influences the bargaining position of farmers against middlemen. The higher market accessibility by farmers will further strengthen the bargaining position against the middlemen.

#### Recommendations

Government as a stakeholder can help farmers improve their market knowledge by providing marketing training and improving access to transportation, communication and information. The easy access to capital is also one of the important things so that the farmers are not bound to the middlemen and it gives the opportunities to the farmers to freely choose where to sell their crops. Further research can be conducted to look at other factors besides market accessibility which may also affect the bargaining position of farmers against collecting traders or middlemen.

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