Analysis of Differences in Knowledge of Maize Farmers Who Are Given Training About Corn Marketing in Corn Production Centers in West Sumatra Province

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ABSTRACT

This research purposes to analyze differences and identify increased knowledge of corn farmers about marketing maize in corn production centers. The total sample is 90 maize farmers who have been given training and also those who have not been given training. Sampling was done by purposive sampling. Also, the primary data are collected by the application of a quasi-experimental design that will be used is the Non-Equivalent Control Group Design. The results of the study found that there were differences in the knowledge and understanding of corn farmers who were given training with the control group who were not given training on marketing of corn products through agricultural cooperatives; corn marketing model; an engineering model for corn marketing of maize farmers. However, there is no distinction in know-how between the two farmer groups regarding the marketing margins of maize commodities in the maize production center areas in West Sumatra Province.

Keywords: Different test, Experimental design, marketing knowledge

1. Introduction

Corn is one of the necessary goods for Indonesia. Corn is still the main food requirement of the community and its demand value is quite high. Currently, the government is also making corn, one of the main food commodities that are prioritized for development. This is because for many years Indonesia has continued to rely on imports of corn to meet the shortage of domestic maize production. Corn is an attraction for the growth of the upstream industry and a driving force for the growth of the downstream industry in the agribusiness system and business. The demand for maize in Indonesia continues to increase, both for food as a source of carbohydrates as well as a raw material for the food industry. Currently, the need for corn for feed has reached more than 50% of the national requirement. The increase in demand for corn is related to the growing development of livestock businesses, especially poultry. Meanwhile, domestic maize production has indeed increased but has not been able to meet all the needs, so the shortfall is met from imported corn.

The problem in developing agribusiness and agro-industry is the weak linkage between subsystems in agribusiness, namely distribution, and supply of production factors, agricultural production processes, processing, and marketing. The marketing process is an important factor in running a business. Good product quality must be supported by a good marketing strategy so that consumers know that the product being offered is suitable for consumption.

The small portion of values accepted by farmers from the values paid by purchasers is one of the obstacles in marketing agricultural products. One of the factors in this problem is the weak position of farmers in the market. This is very detrimental to farmers and also the consumer community. Low prices at the farmer level will cause a decrease in the interest of farmers to increase their production and high prices at the consumer level cause consumers to reduce consumption.

Farmers, collectors, middlemen / wholesalers, and retailers are marketing agencies that take a part in marketing horticultural agricultural goods. Marketing actions that have not run streamlinedly are questions that arise in the horticultural marketing method, which means that agricultural products have not been able to be distributed fairly from the on the whole value of the final consumer involved in the output and marketing process of agricultural goods. Righteous allocation in channel 3 is the division of remuneration for the marketing function based on the contribution of the respective roles of the marketing agency.

The development of food derivative products has a large market potential so that it can strengthen food and economic security. Therefore, farmers must first benefit from the corn they produce, especially in terms of the marketing chain. According to Ariusni and Ulfa (2018) research it is found that the results of marketing margin analysis on three marketing channels of maize in three districts in West Sumatra Province, namely West Pasaman Regency, Pesisir Selatan Regency, and Agam Regency. The average marketing margin in channel 1 (farmer-village cooperative-distributor-animal feed) is IDR 960. On channel 2 (Farmers-middlemen - animal feed) is Rp. 778, - and channel three (Farmer-Distributor-animal feed) is Rp. 1.213, - The bigger the marketing margin, the smaller the price received by the producer farmers or it indicates that the marketing is not very efficient. The margin of marketing in this research is counted from the selling value of maize shelled in the marketing channels in the three districts of West Sumatra Province. The most little marketing margin value is found in marketing channel II and marketing channel I with the final product to consumers in the form of dry shelled corn. Thus, it can be said that marketing channel II and marketing channel I with dry shelled corn final products are efficient marketing channels.

In a farmer's share that compares the price earned by the farmer with the value paid by the consumer. The greater the farmer's share, the better and more efficient the marketing system, judging from the average farmer's share in channel 1 is 81.23 percent, meaning that the share received by corn farmers is 81.23 percent of the price paid by consumers where the consumer is animal feed because the corn produced is high-quality corn for animal feed. From marketing efficiency, it can be determined through the distribution of margins in the marketing channel that the marketing channel in the districts of West Sumatra Province, namely the channel that has the smallest margin value is marketing channel 2, namely Rp.834, - which is considered the most streamlined channel is marketing channel II because it has the most minor margin value among the three channels and the greatest farmer's share contrast to other marketing channels. The marketing margin value influences the value of the farmer's share and marketing efficiency. The smaller the margins of marketing, the greater farmer's share value causethe slighter marketing efficiency value. This corn is generally marketed to six regencies/cities in West Sumatra Province, namely Fifty Cities Regency, West Pasaman Regency, Agam Regency, Pesisir Selatan Regency, Bukittinggi City, and Padang City. Market access ranges from farmers distributing corn yields to traders to various markets. Collector traders already have subscriptions for animal feed businesses so they can easily access the market. The resources used in marketing this corn are farmers and traders.

In corn marketing, the institutions involved in corn marketing are farmers, Village Unit Cooperatives (KUD), collectors or, middlemen traders, distributors, and animal feed

businesses retailers. Based on the analysis of marketing margins, farmer's share, and marketing efficiency, channel II is the most efficient as an institution in marketing corn products. Besides, it is also seen from the internal potential faced in marketing corn in the central area of corn in the form of strength to the central area of maize in the three districts in West Sumatra Province. It shows that farmers do not have the power to market their maize.

Marketing institutions as business entities or individuals who carry out marketing, distribute services and commodities from natural producers, this is corn farmers to final consumers such as animal feed businesses and have relationships with other business entities or individuals. Marketing institutions include various business organizations built to carry out marketing. Intermediary traders are individuals or entrepreneurs who carry out various marketing functions involved in buying and selling of goods because they participate in moving goods from producers to consumers. They carry out activities as proprietors (owners), partnerships (partners) or cooperative / non-cooperative companies.

Based on the study of marketing margins, farmer's share, and marketing efficiency, the idea of an appropriate corn marketing institution is Farmers - Collector traders or middlemen - retailers or animal feed. The appropriate institutions for the development and marketing of maize are as follows:
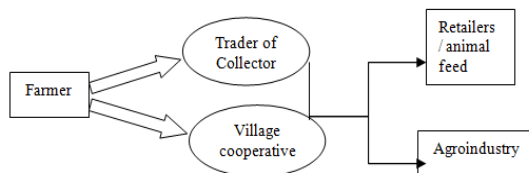

Figure 1: Corn marketing institutions
Source: Ariusni& Sentosa, S.U, 2017

Figure 1 shows an appropriate marketing channel for maize farmers in central maize in West Sumatra Province because it provides a small marketing margin, which indicates that corn marketing is increasingly efficient. A high Farmer's share value means the marketing system is getting better and more efficient with the smallest marketing efficiency value.

Agricultural extension is an effort to help create a conducive learning climate for farmers and their families as well as agricultural business actors. One method to increase the capacity of corn farmers in marketing their products is to conduct training or extension activities managed by universities for farmers as agricultural entrepreneurs. The empowerment of farmers is a strategic key for agricultural development to create a dynamic and capable society to improve and improve their standard of living. In realizing farmer empowerment, it is necessary to improve the corn marketing chain and proper corn marketing institutions so that farmers are benefited by the corn production marketing agency. so far, corn farmers have always been disadvantaged by existing marketing channels or marketing agencies.

Therefore, the engineering development of the maize market needs to be applied through a local government policy so that farmers benefit from their income so that corn production can grow rapidly. Farmers 'knowledge is also improved so that farmers' knowledge in understanding existing marketing institutions and also developing and improving the quality of corn production will have high added value. Besides that, the productivity of corn farmers needs to be increased so that farmers become literate with agricultural science and the rapid modernization of today's marketing institutions. This study aims to observe farmers' understanding of the marketing of maize production before and after training on marketing maize in West Sumatra. No one has conducted training research for maize farmers in West Sumatra, therefore it is interesting to study.

2. Literature Review

2.1. Knowledge development of farmers

The literature related to agricultural knowledge has grown rapidly. Moreover, understanding to farmers' knowledge and learning process is the main purpose in achieving sustainable agricultural practices. Because of this, there is now growing research of social science that searches to show the trait and complexity of farmers' know-how, both concerning how they comprehend their agricultural environment and the conflicts of potential knowledge that could emerge when farmers make connection with another atmospheric knowledge that focuses on conservation (Reed et al., 2010; Riley, 2010). and what barriers have occurred in the history of agriculture and earlier farmer relations in hindering the stimulation of this development (Riley, Sangster, Smith, Chiverrell, & Boyle, 2018).

While the study has recognized the importance of encouraging wider-scale interactions among farmer needs and encouraging farmers to study from and consider the knowledge of other farmers in their area, there is small empirical study into how these efforts can be played into practice. According to Stock, Forney, Emery, and Wittman (2014) noting the urgent necessity to give "greater attention to micro /macro relationships between actors across different scales".

The formation of farmer knowledge is a difficulty and multifaceted way, some of which are closely related to location (Wójcik, Jeziorska-Biel, and Czapiewski, 2019). This form of developing local knowledge in certain contexts and specific characteristics of an area is then notified by diverse resources and formed by the culture and economy of the region. The importance of places for understanding knowledge production and distributing and serving social settings as well as sites where new information is exchanged in knowledge development (Agnew & Livingstone, 2011). Thus, Wójcik et al. (2019) acknowledges this, discusses the importance of room for knowledge development, notes how farmers "sprout" into the section of an area, generates some knowledge emerging from years of cooperation between a individual and room, and the socialization and next life experiences in that chamber.

Understanding knowledge in a deficient dualistic structure development, Raymond et al. (2010) examine how knowledge can be located on dissimilar continuum: 1) in a particular context or of a local nature; 2) the extent to which that knowledge is formalized; 3) whether it is show-stratum skills; 4) articulated whether knowledge is accessible to others (i.e. whether it is more closed (more subjective, not articulated and private) or explicit (documented, general and structured) (Wojcik et al., 2019);5).whether it is basic in cultural regulations or norms and in dialog with ecological conditions in detail. Regarding this structure, Raymond et al. (2010) recommend that 'local knowledge' can point to lay, closed and private knowledge - but can include professional understanding; 'Scientifically knowledge' can cover that obtained through more scientific classifications with a concentrate on validity and reliability.

Knowledge is a main concept in the fruitfulness of various organizations and businesses (Charband & Jafari Navimipour, 2018; Jafari Navimipour & Fouladi, 2017; Arbabi, Zomorrodi, Nezhad, & Abasaltin, 2016). In this regard, knowledge farmers have the skills to take advantage of agricultural experiences and how sophisticated technologies are to increase productivity, skills of management, consciousness of cultivating time, make changes with the support of innovation, manage profits and protect the environment. Farmers, via farming knowledge, can influence the demand and supply of the economy (Sharma, Chandna, & Bhardwaj, 2017).

Farmers' knowledge plays a key role in cultivating environmentally friendly agricultural land (Liu and Luo, 2018). If farmers have low knowledge, it will be hard for them to change their ordinary farming workouts (Liu & Zhou, 2018). There is a connection among low farmer knowledge points about fertilizers and the effectiveness of public health interventions, such as hazard awareness drives (Muleme, Kankya, Ssempebwa, Mazeri, & Muwonge, 2017). Knowledge, attitudes, and behavior or training play a key role in the mode of human evolution (Smit & Wandel, 2006). Alterations in the level of individual knowledge cause to alterations in their stances, behaviors, and application in their environment (Blackmore, 2007).

Social cognitive theory emphasizes the actor of personal knowledge and manner also outer social and environmental elements in behavior alteration (Laland & Rendell, 2019; Bandura, 2001). Knowledge generally refers to 'bodily explanation that is owned by an individu or, by extension, by a cluster of people or culture' (Reber, 1995). 'The cognition of information which is awareness, the perception of non-symbolic meanings' is called knowledge (Wessman, 2006). The meaning of being a concious understanding (feeling) of truth and realness is a purpose of perception. According to the classical epistemology knowledge is defined as justified trust, truth is the product of individual wish supported by our social network. Thus, knowledge is local, socially agreed upon, and part of the state (O'Toole, 2011). Their knowledge is built from what they get, experience, practice, and interpret from their personal experiences, others, and their surroundings (Geoghegan & Leyson, 2012).

Trust and capital are very important for sharing knowledge, farmers are more possible to use knowledge if it derives a reliable source based on observations (Fisher, 2013), as noted by Riley et al. (2018), to observe this status related to the capital status of farmers and convenience for other farmers. Although some use slightly different terminology, Tsouvalis, Seymour, and Watkins (2000) and Riley (2010) have noted a identical theme in their discussion of a ' culture of knowledge'-this is the term they use to judge how knowledge is a relational accomplishment in which different groups can contend and harmonize when articulating the social meanings of things. Thus, culture of knowledge is related to how discourse is arranged and knowledge is considered valid.

Knowledge is a general draft that nesessary to be elaborated to become a tool of beneficial analysis. Dissimilar perspectives and attach different meanings to the construct of knowledge, this has been developed by scholars in various fields. Knowledge is a aggregation of information, as an action or as a potential that is in the user to help him adapt his attitude to changing circumstances (Stevens & Churchman, 1975). Based on an interpretive view, Davenport and Prusakin (1998) claim knowledge as "a fluid mixture of experience, value and contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information." Knowledge comes from and what is applied by humans, according to this perspective.

Farmers who produce cloth in Burkian Faso have poor knowledge of the concept of biotechnology (Sanou, Gheysen, Koulibaly, Roelofs, & Speelman, 2018). The results showed that the knowledge of fertilizer management of supervised farmers increased by nearly 40% in China after agricultural training (Pan & Zhang, 2018).

2.2. Training Approach

The training provided by farmers, some are in formal and informal forms. Formal training is usually provided by institutions such as government, universities, and private and non-governmental organizations, while informal training comes from small groups of people in the community. There are several approaches to training of agriculture in China, including

courses, training and come to see, field tutoring, and field schools for farmers (Jia, Huang, Xiang, & Powlson, 2015). The field guidance approaches are a). farmers are trained based on the curriculum, b). Farmers receive field guidance, c). exposed farmer as seen in figure 1 (Pan & Zhang, 2018). Workshop counseling can have a positive impact on the competence (knowledge) of farmers (Hashemi, Hosseini, & Damalas, 2009).
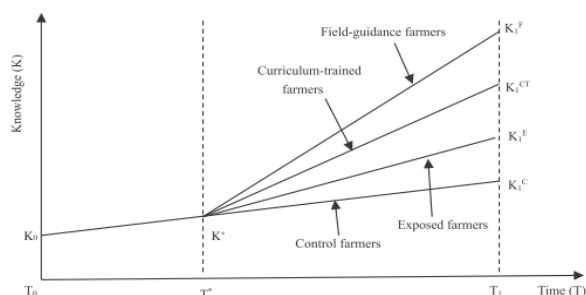

Figure 1: The process of knowledge growth
Source: Pan. D, Zhang. N, 2018

There are three indicators to indicate the types of training: training experience, sources of knowledge, and trust in technicians of agricultural training. Farmers who have more experience of training have more knowledge about the use of agricultural tools (Pan & Zhang, 2018). With increasing time, the training will provide increased knowledge for farmers in increasing their agricultural production. The training given to wheat farmers in China found that knowledge training had a heterogeneous treatment impact. Estimation results from a sample of wheat farmers in China supply evidence that the traditional one-time training approach has a little effect on reduced fertilizer use intension (only 4% on common), whereas the field guide approach has a greater effect on decreasing the intension of fertilizer use (average 17%) (Pan, Kong, Zhang, & Ying, 2017). Another approach from the Farmer field school is to use a learning-discovery approach. this method provides a significant increase in farmers' knowledge (Yang et al, 2008).

Preceding literature verifying the effects of knowledge training has often clarified the number of training sessions offered or the number of participants in an area is defined broadly as knowledge training. Huang, Huang, Jia, Hu, and Xiang (2015) note that this certainty measure has not yet determined to cacth the true effects of knowledge training. A comprehension of the impact of different training approaches (e.g., one-time training vs. Field Guides) can assis model future extension programs that push farmers to pick up sustainable agricultural technologies in China and other developing countries. Knowledge training has an effective impact n increasing agricultural production in China (Pan, Kong, Zhang, & Ying, 2017; Prudent, Loko, Deybe, & Vaissayre, 2007; Norvell & Hammig, 1999). There was a significant increase in knowledge about natural enemies, vegetable pests, disease ecology and insect. Management of Tand pest among farmers who received farmer field school (FFS), but there was no significant increase in knowledge among conventional trained farmers in Yunnan Province, China.

It is estimated that the impact of training of agriculture has big practical interest for the model of agricultural training programs that are more cost-effective, and useful in decreasing the burden of finance on the government concerned with government-financed extension systems in China. By the late 1980s, China's reformed agricultural extension system had become financially free (HU, YANG, KELLY, & HUANG, 2009). In modern China, systems of agricultural extension face major defiances in presenting suitable knowledge to the number of farmers due to finited expenditures, low accountability, and incentives of bad performance

for technicians of extension (Jin, Bluemling, & Mol, 2015).

Agricultural training is a potentially powerful way to spread closely sophisticated technologies to rise productivity and decrease poverty rate in rural area of Sub-Saharan Africa (SSA). There was a gap initially widening midst trained farmers and trained non-ordinary farmers. However, over time, technology spread gradually from main farmers and intermediaries to ordinary farmers. As a result, the rice yielded by the main farmers enhanced rapidly from 3.1 tonnes per hectare to 5.3 tonnes per hectare, while common farmers clearly increased from 2.6 tonnes per hectare to 3.7 tonnes per hectare with the time lag. This shows that community groups benefit from improving the performance of common farmers to be significant (Nakano, Tsusaka, Aida, & Pede, 2018).

3. Research Methodology

The pseudo-Experimental Plan that will be used is the Non Equivalent Control Group Plan as follows:

	Pretest	Treatment	Posttest
Experiment Group	01	X	02
Control group	01		02

This design was chosen because it is very good for the evaluation of educational programs or other training. In this design, the grouping of sample members in the experimental group and the control group is not done randomly or randomly.

The population of this study was three central areas of maize production, namely West Pasaman Regency, Pesisir Selatan Regency, Agam Regency. Primary sampling was done by collecting data with purposive sampling. The number of samples of farmers conducted by the education or training evaluation program was 90 people. The sample area taken was Pasaman Regency because the largest number of maize farmers was in the area. The characteristics of the sample were corn farmers who were in the people's business category. has an interest in socializing the maize market development model, such as the office for food crop agriculture at the provincial level, the office for industry and trade, the regional development planning agency for the province of West Sumatra, the chamber of commerce and the economic division at the provincial level. corn. The number of samples for the 2 research groups were: 1). The experimental group as many as 45 people. 2). The control group as many as 45 people.

The data in this study consisted of secondary data and primary data. Secondary data were obtained from related institutions. Primary data were collected using questions (tests) and questionnaires or questionnaires. Before the test instruments and questionnaires are used in data collection, test instruments and questionnaires are tested first so that the test instruments and questionnaires are valid and reliable. Valid is that the instrument as a measuring tool measures what it wants to measure. Reliability is an instrument as a measuring tool to obtain a consistent measurement result.

The data were analyzed using the difference between the two average parameters, namely using a 2 sample analysis that was not homogeneous (heterogeneous). The difference test between the means of the experimental and control groups was carried out using the t-test statistic.

4. Results and Discussion

4.1. Results

4.1.1. Different Test Results Based on Product Marketing Criteria through Agricultural Cooperatives

Based on the results of different tests carried out by the two-sample test method that is not related to the criteria for product marketing through agricultural cooperatives, the results and the results of the Independent Sample T-Test have been obtained. The results of the F test and t-test are obtained for the criteria for product marketing through agricultural cooperatives as in the table the following:

Based on the Equal Variance Assumed method, the probability value of t is 0.000 which is small from $\alpha = 0.05$. In other words, the different test results based on the criteria for product marketing through agricultural cooperatives reject Ho, which means that there is a significant difference between understanding of product marketing through agricultural cooperatives in the experimental group and the control group. In other words, farmers who are given training on product marketing through agricultural cooperatives have either increased or different knowledge.

Table 1.
F testand T Independent Sample T-Test
Product Marketing Criteria through Agricultural Cooperatives

Value	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	T	Sig. (2-tailed)
Equal variances assumed	.628	.430	-3.715	.000
Equal variances not assumed			-3.609	.001

Source: SPSS data processing 16

Based on the Equal Variance Assumed method, the probability value of t is 0.000 which is small from $\alpha = 0.05$. In other words, the different test results based on the criteria for product marketing through agricultural cooperatives reject Ho, which means that there is a significant difference between understanding of product marketing through agricultural cooperatives in the experimental group and the control group. In other words, farmers who are given training on product marketing through agricultural cooperatives have either increased or different knowledge.

4.1.2. Different Test Results Based on Corn Marketing Model

Based on the results of different tests carried out by the two-sample test method that is not related to the marketing criteria of corn, the results of the Independent Sample T-Test have been obtained and the results of the Independent Sample T-Test are obtained, the results of the F test and the t-test for the marketing model criteria are in the following table:

Table2.
F test and T Independent Sample T-Test

Value	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	T	Sig. (2-tailed)
Equal variances assumed	13.852	.000	7.021	.000
Equal variances not assumed			6.550	.000

Source: SPSS data processing 16

Based on the Equal Variance Assumed method, the probability value of t is 0.000 which is small from $\alpha = 0.05$. In other words, the different test results based on the engineering criteria of the maize marketing model reject Ho, which means that there is a significant difference in understanding between the maize marketing model in the experimental group and the control group of maize farmers in West Sumatra Province. Therefore, it can be said that corn marketing model training is very useful for farmers. This condition is evident from the average value of farmers who are given training in the marketing model of maize is higher and significant than the average value of farmers who are not given training in the marketing model of corn.

4.1.3. Different Test Results Based on Traditional Corn Marketing Model Engineering in Corn Central Area

Based on the results of different tests carried out by the two-sample test method that is not related to the engineering criteria of the maize marketing model and the results of the Independent Sample T-Test, the results of the F test and t-test for the engineering criteria of the corn marketing model are obtained as in the following table:

Table 3.
F Test and T Independent Sample T-Test

Value	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	T	Sig. (2-tailed)
Equal variances assumed	.778	.380	5.130	.000
Equal variances not assumed			5.012	.000

Source: SPSS data processing 16

Based on the Equal Variance Assumed method, the probability value of t is 0.000 which is small from $\alpha = 0.05$. In other words, the different test results based on the engineering criteria for this corn marketing model reject Ho, which means that there is a significant difference in understanding between the engineering marketing model of corn in the experimental group and the control group. Therefore, it can be said that training and coaching engineering of the marketing model of corn is very useful for farmers. This condition is evident from the average value of farmers who were given training in the engineering marketing model for maize is higher and significant than the average value of farmers who were not given training in the engineering marketing model for corn.

4.1.4. Different Test Results Based on Corn Commodity Marketing Margins

Based on the results of different tests carried out by the two-sample test method that is not related to the corn marketing margin criteria, the results have been obtained and the outcome of the Independent Sample T-Test results obtained from the F test and t-test for the marketing margin criteria as in the following table:

Table 4.
F testand T Independent Sample T-Test

Nilai	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	T	Sig. (2-tailed)
Equal variances assumed	25.792	.000	1.139	.258
Equal variances not assumed			1.017	.315

Source: SPSS data processing 16

Based on the Equal Variance Not Assumed method, the probability value of t is 0.315 which is large from α = 0.05. In other words, the different test results based on the marketing margin criteria for this corn accept Ho, which means that there is no significant difference in understanding between the marketing margin of corn in the experimental group and the control group. Therefore, it can be said that training and fostering marketing margin for maize is not beneficial for farmers. This condition is evident from the average value of farmers who were given training in marketing margin for maize, which is not significantly different from the average value of farmers who are not given training in marketing margin for corn.

4.2. Discussion

4.2.1. Difference Test Based on Product Marketing Criteria through Agricultural Cooperatives

From the results of different tests based on table 1 using the Equal Variance Assumed method, it can be seen that the probability value of t is 0.000 which is smaller than α = 0.05. With the meaning of the word, different test results based on the criteria for Product Marketing Through Agricultural Cooperatives (KUD), there is a significant difference between the training model for Product Marketing through Agricultural Cooperatives in the experimental group with the control group Marketing Products Through Agricultural Cooperatives in West Sumatra. From this condition, it can be concluded that the training on Product Marketing through Agricultural Cooperatives has a good influence and impact on maize farmers in West Sumatra Province. This means that there are differences in knowledge and skills between corn farmers who are given training and farmers who are not given training.

The results of the above research were partly due to the training on Product Marketing through Agricultural Cooperatives (KUD) which could be applied directly to the activities of corn farmers in marketing corn production. Corn farmers can directly market their maize through agricultural cooperatives as a means of accommodating agricultural products, one of which is the corn commodity. So that farmers can benefit from direct sales to agricultural cooperatives. Farmers as well as being a member of the cooperative benefit a lot, especially related to income Cooperative members earn income from sales and buying activities carried out in the cooperative.

By doing business such as marketing the corn products that have been produced, each member can increase their income. For the remaining business income obtained by the cooperative, it will be returned to its members according to their services and activities in the cooperative. Having a cooperative will make its members more independent. Members can earn their own money by doing business without having to rely on other people's income. The cooperative in the production sector will train its members to be able to use the income they have to use it effectively. Members are required to be able to live frugally. For members who have financial difficulties, cooperatives can provide capital loans easily without convoluted conditions. Within the cooperative will be divided into groups. These groups will make it easier for corn farmers who, as members, will be able to sell corn products easily in the cooperative.

The findings of this study are different from those of tomato and banana farmers in the Frailesca and Soconusco areas, showing that farming experience increases their knowledge of the safety of pesticide use.They were also given extension training that had little impact on the management of their farm (Ríos-González, Jansen, & Sánchez-Pérez, 2013).

4.2.2. Difference Test Based on the Traditional Corn Marketing Model in the Central Area of Corn

From the results of different tests based on table 2 using the Equal Variance Assumed method, it can be seen that the probability value of t is 0.00 which is smaller than α = 0.05. With the meaning of the word, the results of the bed test based on the criteria for this corn marketing model, there is a significant difference between the training in the corn marketing model in the experimental group and the control group for the maize marketing model in West Sumatra. From this condition, it can be concluded that the training on the marketing model of maize has a good influence and impact on maize farmers in West Sumatra Province. This means that there are differences in knowledge and skills between maize farmers who are given training and farmers who are not given training. Farmers understand the current maize marketing model after being given training. With this training, the understanding of corn farmers about the maize marketing model that occurs with the marketing chain is many are handled by the existence of middlemen, which in general is detrimental to maize farmers. This is because the farmers accept the low-price set by the middlemen. Middlemen provide initial capital assistance to farmers such as urea fertilizer assistance. seed assistance, organic fertilizer assistance, pesticide and herbicide assistance, and cash loans. So that the selling price of corn after harvesting is determined by the middlemen at a low price. So the farmers do not have the power to determine the price. This training provides a meaningful understanding for corn farmers in the current marketing model of maize. Farmers realize that they have suffered losses by the existence of this m in this maize marketing model. This is because there are no options for corn farmers to market their products due to limited knowledge in marketing corn.

Research on mannual training was provided to small farmers in semi-arid tropical areas on the dynamics of value chain changes caused by the rapid development of markets as well as innovations in how to minimize costs in the value chain.training was also provided on increasing the added value of agricultural products to these farmers so that their value was increased (Reddy, 2013).

4.2.3. Difference Test Based on Traditional Corn Marketing Model Engineering in Corn Central Area

From the results of different tests based on table 3 using the Equal Variance Assumed method, it can be seen that the probability value of t is 0.00 which is smaller than α = 0.05. With the meaning of the word, the different test results based on the criteria for the engineering model of corn marketing, there is a significant difference between the training in the engineering marketing model of maize in the experimental group and the control group for the engineering model for marketing corn in West Sumatra. From this condition, it can be concluded that the training in corn marketing model engineering has a good impact and impact on maize farmers in West Sumatra Province. This means that there are differences in knowledge and skills between corn farmers who are given training and farmers who are not given training on the engineering of the maize marketing model. Farmers know and realize that a good marketing model for maize is village cooperatives. The importance of farmer groups as support for the existence of village unit cooperatives or agricultural cooperatives. Corn farmers realize the importance of forming farmer groups to sell corn collectively to cooperatives. After that, the cooperative sells directly to corn retailers or sells to chicken breeders or corn agro-industrial companies. Another way is that corn farmers are aware and know that to shorten the marketing chain, corn is sold to middlemen, then middlemen can sell directly to corn retailers or agro-industrial companies or corn breeders.

Thus, maize farmers realize that their income will be high if they sell maize to village union

cooperatives with short chains directly to maize retailers or agro-industrial companies or in animal feed businesses. Village unit cooperatives are an engineering marketing model that benefits maize farmers because of the short marketing channels. Corn farmers will prosper with the income they deserve. Mano, Iddrisu, Yoshino, & Sonobe, (2012) found that basic level management training could improve the performance of small and micro enterprises in Ghana.

4.2.4. Different Test Results Based on Corn Commodity Marketing Margins

From the results of different tests based on table 4 using the Equal Variance Assumed method, it can be seen that the probability value of t is 0.315 which is greater than $\alpha = 0.05$. With the meaning of the word, the results of the bed test based on the Corn Commodity Marketing Margin criterion, there is no significant difference between the Corn Commodity Marketing Margin training in the experimental group and the Corn Commodity Marketing Margin control group in West Sumatra. From this condition, it can be concluded that the Corn Commodity Marketing Margin training does not have a good impact and impact on maize farmers in West Sumatra Province. This means that there is no difference in knowledge and skills between corn farmers who are given training and farmers who are not given training on the Marketing Margin of Corn Commodities.

The understanding of marketing margins for corn farmers is not easy for corn farmers to understand because it is based on the observation that the average farmer's education in junior high school or junior high school. The training provided by the research team did not affect the marketing margin for corn commodity, the calculation of corn marketing costs, types of marketing costs for corn, marketing efficiency, marketing profits, and marketing margins which are a function of marketing service costs. To understand the concept of marketing margins, marketing efficiency to produce even smaller marketing costs, and greater profits for farmers, the minimum education for farmers is a senior high school (SLTA). Therefore, the understanding of marketing margins is very low. so that training on marketing margins for corn commodity is useless and has no effect on maize farmers in West Sumatra Province.

This research was conducted by Schreinemachers, Wu, Uddin, Ahmad, & Hanson (2016) found that there was an increase in household income of vegetable farmers after these farmers received training in Southwest India by about 48%. Farmers who no longer use technology also get a significant increase in income from the training.

5. Conclusion

Based on the research results in the previous chapter it can be concluded that: (1) Corn farmers in West Sumatra Province who are given training on arketing of maize products through agricultural cooperatives have higher knowledge and skills than corn farmers who are not given training in corn (control group); (2). Training on the traditional maize marketing model in corn production centers has higher knowledge and skills than corn farmers who are not provided with corn training; (3). Training on the engineering of traditional maize marketing models in maize production centers has higher knowledge and skills than maize farmers who are not provided with corn training. (4). Corn commodity marketing margin training has no different knowledge and skills compared to corn farmers who are not given corn training.

6. Suggestions

Farmers' knowledge needs to be improved so that it needs the role of government agencies and universities to provide training or counseling so that farmer productivity and income

increase. The opportunities for farmers to upgrade their knowledge through training are very limited, especially for corn farmers, their existence is far from urban areas.

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