The Effect of Communication Behavior on Communication Convergence Increasing the Capacity of Horticultural Farmers in Pekanbaru City

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ABSTRACT

The convergence era has pushed the process of telecommunications globalization and information services, which has made all forms of information possible. An understanding of the use of communication media and the factors of communication behavior needs to be done so that farmers can take advantage of access to information appropriately in increasing farmers self-capacity. This study aims to: (1) describe the elements of communication, communication behavior, and communication convergence to increase the capacity of horticultural farmers in Pekanbaru. (2) Analyzing the factors that influence the communication behavior of horticultural farmers. (3) Analyzing the effect of communication behavior on communication convergence towards increasing the capacity of horticultural farmers. The research data was collected using a questionnaire through interviews with 161 respondents of horticultural farmers who are members of farmer groups. Data analysis was carried out by descriptive analysis and inferential statistical analysis using SEM LISREL. The results of SEM analysis show the factors that influence communication behavior significantly and positively by external characteristics and communication media. Then communication behavior has a significant and positive effect on communication convergence to increase the capacity of horticultural farmers.

Keywords: Capacity building, Communication behavior, Convergence.

INTRODUCTION

The development of the agricultural sector which is accompanied by the development of the digital era has an important role in increasing and fulfilling national needs that provide convenience in accessing and using technology, communication and information. Horticulture is one of the sectors that makes a major contribution to social economic development to improve the welfare of farmers in Indonesia with production in 2018 of 435 thousand tons, an increase compared to 2017 of 394 thousand tons or an increase of 10.36% (Central Bureau of Statistics, 2018).

Pekanbaru is one of the regencies/cities that has received support for the development of horticultural crops, especially vegetables and fruits, with the ministry of government policy No. producing horticulture of 489,462 quintals in 2018 with a harvested area of 4,899 ha (Central Bureau of Statistics of Pekanbaru City, 2020). This is certainly a good potential considering that horticultural production is in the spotlight because availability tends to decrease due to declining production.

Farmers' need for information will determine their behavior in seeking information, starting from identifying information needs and using or transferring them back. Horticultural
farmers in Pekanbaru have different ways of cultivating and the commodities that are cultivated. Demanik and Tahitu (2019) stated that differences in commodities lead to different information needs for farmers in accessing information, technology and communication, so it is important that farmers do not always depend on extension workers or provide communication facilities and infrastructure to increase farmer capacity.

Barriers to accessing information are suspected to be low communication behavior or the existence of gaps between farmers and cause low technical skills, social skills and managerial skills for competitive human resources, namely the ability of farmers in agricultural cultivation techniques, building an entrepreneurial spirit in communication, cooperation and sensitivity to the environment (Wibowo, 2012). Communication behavior and the use of internet-based communication media are expected to increase access to information and increase the capacity of horticultural farmers in Pekanbaru City. According to Kurnia (2019), communication behavior is seen from knowledge, attitudes and skills. Based on this, it is necessary to increase the capacity of horticultural farmers in the digital era. The problems of this research are (1) How is the influence of the factors of communication behavior. (2) how is the influence of communication behavior on communication convergence to increase the capacity of horticultural farmers. Based on these problems, the purpose of this research (1) Describe the elements of communication, communication behavior and communication convergence to increase the capacity of horticultural farmers in Pekanbaru. (2) analyze the factors that influence communication behavior. (3) analyzing communication behavior towards communication convergence to increase the capacity of horticultural farmers.

**METHODS**

**Data and Data Sources**

Researchers used primary data from 161 farmers collected in the sub-districts of Marpoyan Damai and sub-districts of handsome, with a period of January 2020 - March 2021.

**Data Analysis Method**

Data were collected through the distribution of questionnaires and interviews with respondents. Researchers used a Likert scale with a range of 1-5 as a measurement scale which was then transformed into interval data using the MSI Method Of Successive Interval before being analyzed. Data analysis used SEM, namely CFA (Confirmatory Factor Analyst) analysis and complete structural equation analysis.

**SEM Model**

The initial model that the researcher designed is:

![SEM Model](image)

*Figure 1. SEM Model in Research*
Hypothetical Framework

The hypothetical framework that describes the communication behavior model on communication convergence to increase horticultural capacity in Pekanbaru City is as follows:

$$\eta_1 = \gamma_1 \xi_1 + \gamma_2 \xi_2 + \gamma_3 \xi_3 + \gamma_4 \xi_4 + \gamma_5 \xi_5 + \delta_1$$

$$\eta_2 = \beta_1 \eta_1 + \delta_2$$

Where:

- $\xi_1$ = Farmer's Internal Characteristics / $X_1$
- $\xi_2$ = Farmer External Characteristics / $X_2$
- $\xi_3$ = Information Source / $X_3$
- $\xi_4$ = Communication Media / $X_4$
- $\xi_5$ = Program Communication / $X_5$
- $\delta_1$ = error 1
- $\delta_2$ = error 2
- $\eta_1$ = Farmer Behavior
- $\eta_2$ = Convergence of Communication in Capacity Building for Farmers
- $\beta_1$ = unit value of farmer behavior

SEM Basic Assumptions

Santoso (2011) explains that parameter estimation in SEM is generally based on the Maximum Likehood (ML) method. Estimation using the ML method requires assumptions that must be met, including: 1) The number of samples must be large (requires a sample of at least 5 times the number of indicators used). 2) The distribution of the observed normal variables is multivariate if the value of the criteria for z skewness and kurtosis <0.05, then the data is declared abnormal. 3) The hypothesized model must be valid. 4) Continuous variable measurement scale (interval).

RESULTS AND DISCUSSION

Horticultural Farmer Communication Elements

Describing the research variables aims to discuss the description of horticultural agribusiness communication behavior in increasing the capacity of horticultural farmers in Pekanbaru City. The area is explained by results of statistical analysis of the description as follows.

The internal characteristics of horticultural agribusiness farmers in Pekanbaru City are an initial description of the internal factors of agribusiness actors in running their business. The internal characteristics of horticultural agribusiness actors are presented in 7 sub-variables consisting of productive age of farmers ranging from 29-49 years (63.4%), most formal education at MTs SMP graduates, farmers' income level at most getting IDR 500,000-1,000,000/month. This is influenced by shared land ownership, land area ranging from 0.5 ha to 0.9 ha, then skills in using communication media as much as 60.9% (2-3 times) farmers participate in group meetings, cosmopolitan seen from the size or the small number of farmers in making contact with the environment in the community as much as 62.7% of farmers are categorized as good enough.

External factors include environmental factors where farmers work on farming that can influence farmers' decision making (Waldi, 2019). External factors in running horticultural farming are very important, both from the influence of high leadership, which is 33.5%, the support capacity of external institutions in building businesses and synergistic wide-stakeholder relationships of 33.5% and the accelerated environmental power, namely the
existence of local environmental forces that enable business actors or farmers to be able to take advantage of medium category information (34.8%).

Sources of information are very influential on the innovation adoption process. Sources of information can come from mass media (television, internet, etc.) and interpersonal channels such as fellow farmers, traders, extension workers or other information. Sources of information are divided into 3 sub-variables, namely farmers’ knowledge of information sources categorized as good enough (55.3%) farmers know the types of information sources, then the ease of accessing categorized information (54.0%) is quite good because the research location is close to the city center, and suitability of information with needs of 60.2% is quite appropriate.

Communication media is a medium used by horticultural farmers in communicating to get information in the form of mass media and interpersonal media that presents information on their farming. The communication media described into 4 sub-variables, namely the level of availability of ICT-based facilities of 41.0% is quite good for farmers to have social accounts such as FB and WhatsApp Furthermore, the level of information quality is quite good, namely 43.5% of farmers think that the information displayed in various communication media can be read. Furthermore, farmers' attitudes towards new media are 41.0% of farmers agree that internet media can provide wider opportunities in finding information. Then media ownership, farmers have at least one smartphone in one family.

Horticultural farming will be better if it is supported by programs that come from the government, private sector or self-help. Horticultural agribusiness program helps farmers to gain knowledge and increase farmers' income. Program characteristics are divided into 3 sub-variables, namely program sources originating from the private sector, government or self-help, 60.2% are categorized as moderate, the program implementation is quite appropriate, as many as 109 farmers or 67.7% participating farmers. and the benefit of the program for farmers of 52.2% is quite useful especially to increase their experience.

Horticultural Farmer Communication Behavior

According to Oktavia (2017) Communication behavior is all activities of horticultural farmers in making contact or contact with various sources of information aimed at seeking and obtaining information and disseminating information to any parties who need it. Farmers in Pekanbaru City have high knowledge of 34.8% with an average category of 3.45 (Enough). Then the attitude of farmers in the high category is 38.5% and the attitude of farmers in the low category is 17.4%. Furthermore, farmers' skills are in the medium category as much as 38.5% and in the high category at 33.5%.

CFA Analysis

The initial SEM model is built from several constructs which are then carried out by factor analysis (CFA) which results in goodness of fit (GOF) as follows:

<table>
<thead>
<tr>
<th>Goodness Of Fit Index</th>
<th>Cut-Off Value</th>
<th>Results</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2-Chi-Square (df=270, 0.05)</td>
<td>&lt; 320.74</td>
<td>296.79</td>
<td>Fit</td>
</tr>
<tr>
<td>Sign. Probability</td>
<td>0.05</td>
<td>0.13</td>
<td>Fit</td>
</tr>
<tr>
<td>df</td>
<td>0</td>
<td>270</td>
<td>Fit</td>
</tr>
<tr>
<td>GFI</td>
<td>0.90</td>
<td>0.88</td>
<td>Marginal Fit</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.90</td>
<td>0.84</td>
<td>Marginal Fit</td>
</tr>
<tr>
<td>TLI/NNFI</td>
<td>0.90</td>
<td>0.99</td>
<td>Fit</td>
</tr>
<tr>
<td>NFI</td>
<td>0.90</td>
<td>0.94</td>
<td>Fit</td>
</tr>
<tr>
<td>IFI</td>
<td>0.90</td>
<td>0.99</td>
<td>Fit</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.08</td>
<td>0.025</td>
<td>Fit</td>
</tr>
<tr>
<td>RMR</td>
<td>0.05</td>
<td>0.047</td>
<td>Fit</td>
</tr>
</tbody>
</table>

Source: Primary Processed Data, 2020.
According to Wijanto (2008) the estimation stage produces a solution that contains the final value of the estimated parameters. The fit test criteria are divided into three parts, namely absolute fit measure, incremental fit measure, and parsimonious fit measure.

**Absolute Fit Index**

The chi-square fit test measures how close the covariance matrix of the model prediction results and the covariance matrix of the model’s prediction results to the data covariance matrix. The p-value of Chi squared is greater than > 0.05, indicating that the actual and predicted input matrix are not statistically different (identical), or the empirical data has conformity with the theory or model that has been built through SEM and this condition is expected by the researcher.

**Incremental Fit Measure**

AGFI (Adjusted Goodness Fit Of Index) is a development of GFI that has been adjusted to the ratio or degree of freedom with the AGFI value above 0.90, the greater the AGFI the better the fit of the model.

**Parsimonious Fit Measure**

The suitability of the parsimony model, among others, is seen from the PNFI and PGFI values which are used to compare the better fit on the alternative models. The larger the PNFI and PGFI, the better the model fit.
Figure 2. Model Estimation Results

Figure 3. Results of the T-value in the Model

PLS Analysis

Structural model measurement analysis is to make regression coefficient analysis, hypothesis testing and path analysis so that it can provide policy implications and recommendations from researchers by looking at the results of the structural equation of LISREL output.

\[ Y_1 = -0.016 \times X_1 + 0.12 \times X_2 + 0.044 \times X_3 + 0.36 \times X_4 - 0.054 \times X_5, \quad R^2 = 0.46 \quad \text{............... (1)} \]

These variables can be explained as follows.

Internal Characteristics of Farmers Negative and Significant Influence on Communication Behavior

The internal characteristics of farmers (X1) have a negative relationship to the communication behavior of farmers with a coefficient of influence of -0.27 or only 2% has a negative and not significant effect on communication behavior (Y1) with a coefficient of determination (R2) of 0.46 this means that only 46 % in the structural equation indicates or explains the X1 variable in communication behavior. Every time there is an increase in internal characteristics of 1 unit, it will reduce the communication behavior of farmers by 0.27 units. This is relevant to what is in the field that the length of farming has a low relationship to communication behavior because the length of farming farmers in Pekanbaru City is classified as moderate, only 4 to 9 years and farmers have not maximally utilized communication media in farming. some of them still do it traditionally and manage their farming only as a side job so they are not too focused on managing it productively. This is
contrary to Pratiwi’s research, which according to Pratiwi and Sudraja (2012) states that the length of farming will have a real influence on the behavior of farmers in managing their agricultural land, the longer farming, the higher the level of experience of farmers.

**External Characteristics of Farmers Have a Positive and Significant Influence on Communication Behavior**

Horticultural farmers have external characteristics that can improve communication behavior. Every time there is an increase in external characteristics by 1 unit, it will increase the communication behavior of farmers by 0.12 units. That is, there is a positive change in the communication behavior of farmers caused by the external characteristics of the farmers.

Based on the reality in the field, farmers generally get support from supporting institutions for farming, both government and private, the assistance can be in the form of subsidized fertilizers, capital assistance and production input assistance. The government’s support in the form of extension and training institutions has been felt by farmers, one of which is training in the manufacture of organic fertilizers that can help farmers improve the ability of farmers.

**Sources of Information Have a Positive and Significant Influence on Communication Behavior**

Farmers' sources of information have a positive and insignificant effect on communication behavior because the T-value is smaller than the T-table, namely 1.18 < 1.65, meaning that if the farmer's information sources have increased, it does not necessarily increase the behavior of farmers in the future. The information source coefficient is 0.04 which means that every time there is an increase in information sources by 1 unit, it will increase the communication behavior of farmers by 0.04 units.

Sources of information are not significant due to the ease of accessing information sources at the research site, which is quite easy, it can be seen that Pekanbaru is the center of government and trade. The information given by the extension workers is only general so that they do not take advantage of the information provided because they do not believe and trust their farming experience more than the innovations that have been provided. This is also related to the different commodities of farmers and if farmers want to get more information, farmers must take the initiative to come or contact extension workers directly.

**Communication Media Has a Positive and Significant Influence on Communication Behavior**

Communication media has a positive and significant effect on communication behavior that has a T-value greater than 1.65, which is 4.80 significant at the 5% level. If there is an increase in communication media, it will encourage an increase in communication behavior. This means that communication media can improve communication behavior with every communication media occurring by 1 unit, it will increase farmer communication behavior by 0.36 units so that there is a positive change in farmer communication behavior caused by the communication media.

Ownership of horticultural farmers’ media such as the use of communication channels (interpersonal and mass media) and communication tools that are widely used are smartphones, internet media and farmer's affordability (cost and distance factors) the research location is close to the city center (availability of various internet networks) so that farmers are motivated to seek agricultural information. Farmers also think that internet media provides an opportunity to seek wider information. This is in line with research by Gultom (2016) which states that the quality of information is very necessary in improving the ability of farmers to run their farms.
Program Communication Has a Negative and Significant Effect on Communication Behavior

Horticultural agribusiness program communication (X5) has a negative relationship to the communication behavior of farmers with an influence coefficient value of -0.052 or only 0.5% has an insignificant negative effect on communication behavior (Y1) because the T-value is smaller than the T table, namely -1.10 < 1.65, meaning that if the agribusiness program has increased, it is not necessarily that this will result in a decrease in communication behavior in the future. This can be seen in the field that the programs obtained by farmers are not all farmer groups and farmers can get programs from the government or private parties due to limited program costs so that they take the initiative to form farmer groups and make program proposals so that other parties can help each other.

The Effect of Communication Behavior on Convergence Communication in Capacity Building for Horticultural Farmers

Communication behavior is the main factor and has a direct effect on communication convergence in increasing the capacity of horticultural agribusiness farmers. The communication behavior of horticultural farmers (Y1) is measured by the level of knowledge (Y1.1), attitudes (Y1.2) and skills or abilities of farmers in communicating (Y1.3). Meanwhile, communication convergence (Y2) in increasing the capacity of horticultural farmers is measured based on technical skills (Y2.1), social skills (Y2.2), and managerial skills (Y2.3).

\[ Y2 = 1.80 \times Y1, \text{ Error var.} = 0.51, R^2 = 0.29 \]  

Technical skills It can be seen that good information will increase the ability of farmers in cultivating, such as Pekanbaru City farmers who have narrow lands, they can use home gardens as farming land. This information was obtained from farmers when they received training from the extension workers. So that the good behavior of farmers in obtaining information will have a good impact on increasing the capacity of farmers starting from the technical, social and managerial abilities of farmers. According to Herawati et al. (2018) it is very important for farmers to have high capacity in managing their farms in order to be able to produce highly competitive products.

Social skills and managerial skills in farmers also affect the convergence of communication in increasing farmer capacity. This can be seen from farmers in Pekanbaru City being able to collaborate and communicate in groups through social media such as...
WhatsApp groups and when marketing farmers' products using communication media such as social media so that they get more and wider target buyers. Andriyati et al (2011) stated that the information most needed by farmers is related to production technology, followed by marketing and post-harvest.

Increasing the convergence of communication on the capacity of farmers will have a positive impact, one of which is that farmers can optimize the use of information and use information media so that the information obtained can improve farmers' skills in managing farming which will ultimately increase farmers' income as farming actors.

CONCLUSION

The communication elements of horticultural farmers in Pekanbaru City show that overall internal characteristics are in the moderate category (good enough), external characteristics are in the moderate category (enough), the information sources are in the medium category (good enough), the communication media is in the medium category. (good enough), and the communication of the horticultural farming program is in the medium category (quite appropriate). While the communication behavior of horticultural farmers and communication convergence in increasing the capacity of horticultural farmers in Pekanbaru City as a whole are in the fairly good category.

Factors that affect communication behavior significantly and positively are external characteristics and communication media and communication behavior has a real and positive effect on communication convergence to increase the capacity of horticultural farmers as seen from technical skills, social skills and managerial skills.

REFERENCES


