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# Capacity Building of Freshwater Fisheries Agribusiness Actors through Communication Behavior

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**Abstract:** This research aims to analyze the communication behavior of freshwater fisheries agribusiness actors to access information analyze the level of communication convergence in capacity building of freshwater fisheries agribusiness actors analyze the influence of communication behavior on capacity building of freshwater fisheries agribusiness actors. Data was collected by questionnaire and interview of group members on agribusiness. Data analyze was done by descriptive and inferential statistics with using SEM method. The result of descriptive statistics on 284 agribusiness members showed that: communication behavior of freshwater fisheries agribusiness actors in information access was in low category as shown by lack of contact with the outside community, the intensity of the use of the media in finding and disseminating information through interpersonal communication and mass media. The communication convergence of freshwater fisheries agribusiness actors in capacity building was in low category shown by lack of serviced information, social interaction, the level of participation and capability in agribusiness, despite quite good in the utilization of information. The communication convergence is significantly and positively influenced by the communication behavior of agribusiness actors in accessing information.

**Key words:** Communication behavior, communication convergence, capacity, agribusiness actors, SEM method

## INTRODUCTION

Freshwater fisheries agribusiness management and development in Padang City is still small scale with 500-5000 $m^2$ wide area owned by fish farmers in average, partially separated at several locations in Padang City. However, seeing the region's potential and availability of fish seed supported by Hatchery Fish Center or Balai Benih Ikan (BBI) Bungus then this activity is still likely to be developed. To achieve that there is the need for the management and development to be handled correctly both concerning technology, quality of parent and fry, post-harvest handling and the use of high quality feed in sufficient quantities and at reasonable prices and supported by valid data on the development this business in the community. With optimal and sustainable agribusiness management of freshwater fisheries is expected to boost the economy, improve people's income, expand employment, increase local income and is expected to have a multiplier effect for the development of other sectors in Padang.

Globalization has impacted community development due to population disparity and economic disparity (Smutka *et al*., 2014). The era of commodity market competition freshwater fisheries are more stringent thus agribusinesses need to have the ability to manage their business in order to grow. The ability is termed by Chaskin (2001) as capacity (capacity building) which is a process of improving or changing patterns of behavior of individuals, organizations and systems that exist in the community to achieve the desired objectives effectively and efficiently. Some studies about the importance of developing the capacity of individuals including: Kapucu *et al.* (2011) and Krawchenko (2014) said the importance of individual capacity building as well as the importance of institutional capacity building. Muljono (2014) stated the importance of enterprises based on local resources, resilient and strong cadres, information service centers, spirit of cooperation and self-reliance. Furthermore, Tenywa *et al.* (2011), Geith and Vignare (2013) and Anda (2014) examined the relationship between capacity building with community participation to develop learning approaches, the strengthening of the network and social capital in developing capacity.

Meanwhile, the diversity of communication behavior in searching and accessing information is influenced by

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several factors, including as conveyed by Wilson (1999) and Rogers (2003) communication behavior is associated with the information source and medium including active and passive information search as well as the benefits of using information as it also is influenced by the various type of information, social diversity and geographical background of the individual.

Some studies related to the importance of communication behavior in accessing information in building capacity include: Tiwari and Sharmistha (2008) and Pade-Khene *et al.* (2010) the importance of improving the quality of life of the community with the support of information access. Then, Purcell and Beck (2010) stated the importance of communication in the community development approach. Msibi and Penzhorn (2010) researched the principle of participatory communication for community development. Genilo (2010) and Hansen (2011) studied the role of media in the process of innovation communication in farmers. Nemoto *et al.* (2010), Tersoo (2014), Mugonola and Baliddawa (2015), Safa and Yaseen discussed the role of NGOs and agribusiness in the adoption of innovation in the development of agribusiness. Asiedu (2012) and Hoq (2015) viewed the importance of information technology in accessing information, problems and provision of information services in rural areas who need sustainability and the provision of information relevant to the needs of local communities.

In relation to the cases and conditions in the coastal area of Padang, the study aims to analyze the communication behavior agribusiness freshwater fisheries in accessing information analyze the level of communication convergence in building the capacity of the agribusiness freshwater fisheries analyze the influence of the communication behavior on communication convergence capacity building agribusiness freshwater fisheries.

## MATERIALS AND METHODS

This research uses quantitative approach. The data was collected using survey method. Based on the information from Marine Affairs and Fisheries Service/Dinas Kelautan Perikanan (DKP) Kota Padang officials, two districts were used as samples, Kecamatan Koto Tangah and Kecamatan Kuranji. Both of them are the freshwater fisheries agribusiness development area in Padang. The number of samples was decided proportionally based on population distribution in research area while the samples were chosen purposively.

This research's population were freshwater fisheries agribusiness actors which include on-farm fish cultivator, cultivation business production input provider or agro industry input provider, breeder, output processor, distributor, supplier, seller, facilitator, group manager and off-farm information provider of freshwater fisheries agribusiness. This population was chosen based on agribusiness functions which include procurement and supply of production infrastructure, processing (agro industry) and marketing. The population consists of 837 agribusiness actors, 500 of them in Kecamatan Koto Tangah and 337 in Kecamatan Kuranji. The sample of this research was 284 people, 154 of them in Kecamatan Koto Tangah and 130 in Kecamatan Kuranji.

This research was done from February 2016 until March 2016. Primary data collection was done through interview to agribusiness actors and field observation, while secondary data was obtained from Dinas Kelautan Perikanan Propinsi Sumatera Barat, Dinas Kelautan Perikanan Kota Padang, Badan Pusat Statistik Propinsi Sumatera Barat and Balai Penyuluhan Pertanian/Perikanan in both sample districts. Data analysis was done through inferential and descriptive statistics by SEM (Structural equation model) analysis using Lisrel 8.7.

## RESULTS AND DISCUSSION

**Agribusiness actors communication behavior in accessing information:** Communication behavior is all the activities of the agribusiness of freshwater fisheries in dealing with a variety of resources in order to seek and obtain and disseminate information back to other parties who require such information.

Based on the study results (Fig. 1), it can be seen that the way agribusiness in getting information through mass media is lower on average (40.14%). This illustrates that the agribusiness fisheries in the coastal area of Padang still rarely used the media to obtain information. Also, in getting information through relation with external parties both government and other institutions are in the low average (42.96%). This means that access to information for the agribusiness to external parties such as government institutions and non-governmental less frequently performed than with access to information to all the players in agribusiness.

Furthermore, the frequency of agribusiness in the search for information through the mass media is at very low levels (44.01%). The scarcity of agribusiness using the media due to the lack of mass media that convey information about the agribusiness fisheries that they need as well as the limitations of the internet network.

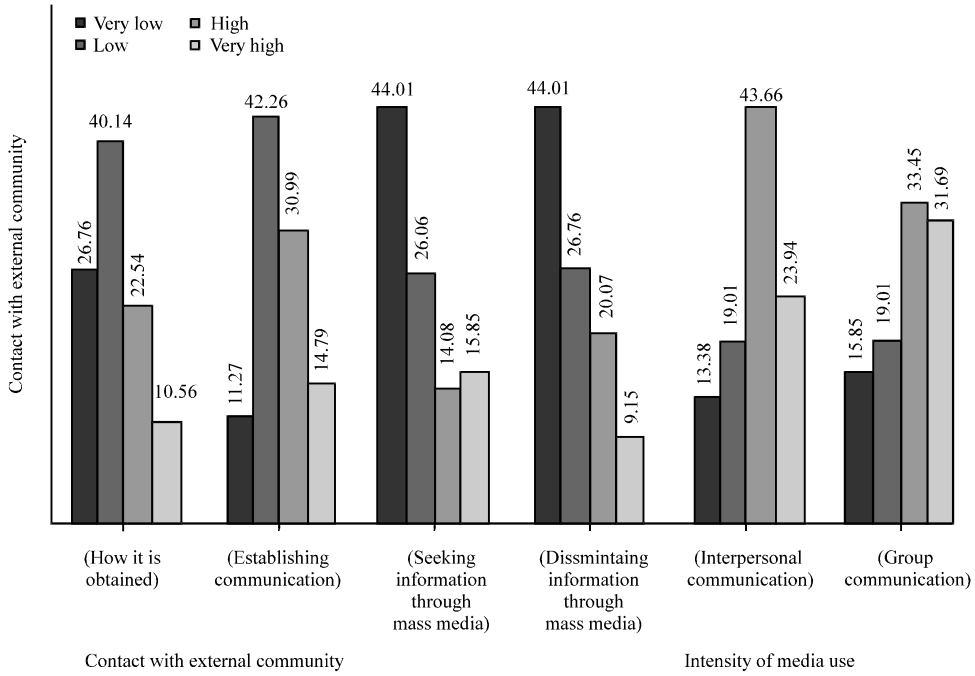


Fig. 1: Distribution of the percentage of respondents by category communication behavior

Whereas information and communication technology play a role in enhancing the ability to take decisions (Ale and Chib, 2011; Cunguara and Moder, 2011). In line with the research of Fatchiya (2010) that the difficulty of obtaining information about fish farming in the media due to the lack of information provided by the media and the price is relatively expensive. According to Aker (2011), Lapple and Rensburg (2011) difficulties in accessing information lead to low levels of adoption, because of the limited knowledge of a variety of information and technology. Furthermore, according to Chen *et al*. (2014) in order to obtain quality fisheries yield it requires the strengthening of capacity and function of market chain that is efficient and effective for catfish and shark catfish farmers.

The lack of information obtained through the mass media rarely resulted in agribusiness distribute or disseminate information through the mass media to other agribusiness players. The results showed that the aspect of information dissemination through the mass media is at very low levels (44.01%). In contrast to interpersonal communication which is at a high level (43.66%). These results indicate face-to-face communication is more often done by agribusiness freshwater fisheries either with a companion or with a group of fellow agribusiness. From interviews of respondents said preferred communication face to face because feedback can be seen directly, the information submitted is also to use language that is easily understood as well as the discussion in the group who can add knowledge agribusiness freshwater fisheries in solving the problem, supported by the results research, communications made in the group are at high levels (33.45%). In line with the study of Crocker *et al*. (2016) that information often comes from the leader's opinion, so it is more trusted by the training participants. Also in Sulaksana (2011) and Morgan (2016) that gave the group development change process is influenced by member's experience, group motivation factor and role of leader. Non-governmental organizations and other organizations focusing on development must realize their role in improving community capacity building skills to more participative in development. Meanwhile, Wambalaba *et al*. (2013) stated that the role of informal mentor such as new graduates has significant influence on business people in managing commercial agriculture projects. The role of these informal mentors also has positive implication in the sustainability and growth and used to expand networks, increase access to external finance sources and support the development of young entrepreneurs. Also stated by Muljono (2013a, b) that the important factors in community development programs are the examples set by the motivators and the facilitators.

**Communication convergence in capacity building of freshwater fisheries agribusiness actors:** The convergence of communication in the capacity building of the agribusiness freshwater fisheries is a maximum

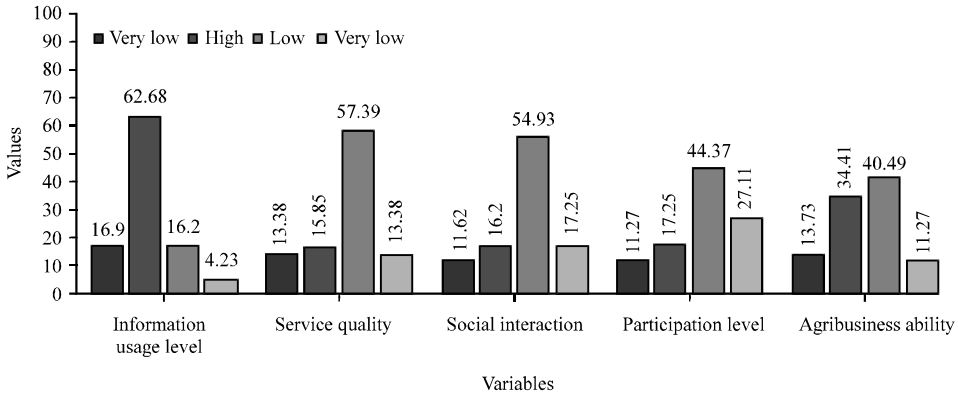


Fig. 2: Communication convergence level in agribusiness freshwater actor's capacity building

common understanding between agribusiness actors, the knowledge of agribusiness that comes from the (local/implicit) and knowledge of agribusiness that comes from outside (global/explicit) which is measured by the ability of communication effectiveness, improving quality of service information, social interaction, participation in the network and the ability of agribusiness. Figure 2 illustrates how the convergence level of communication in the capacity building of the agribusiness fisheries.

According to Mokhtar *et al.* (2015) and Moses *et al.* (2016) leadership qualities correlate with the achievement of market target, organizational performance and play a role in quality management it is imperative that a policy is formulated to support the flourishing of member's creativity. The development of science and information technology demands agribusiness actors to utilize science and technology for their business to progress, especially in the areas of product marketing, creativity post-harvest so they can have broader market channels thus the factor of science and technology use becomes a vital concern. The utilization rate of information for the agribusiness fisheries in the coastal area of Padang is at high level reached 62.68%. From the interviews that agribusiness is in desperate need of information, quite enthusiastic if there is information given in the form of government programs or information obtained from a printed media, radio and television utilized when appropriate to their needs, especially information related to the means of production, capital, market and processing. Although this very minimal availability of information meets their needs which is reflected in the low perception of the quality of information services (57.39%).

The availability level of facilities and infrastructure owned by agribusiness actors which mainly only utilise mobile phones and televisions. Mostly it is not mobile phone that has internet facilities, so it cannot reach the information widely. Although, almost all of the agribusiness actors have TV but it less helps agribusiness actors in improving access to information, due to the scarcity of television, newspapers and radio broadcast information about specific fisheries and in accordance with the needs of agribusiness freshwater fisheries. Nlerum and Onowu (2014) said that Information and Communication Technology (ICT) is vital, if used correctly and effectively can increase the agriculture transformation for the better. This is done with program development using adequate funding and capacity building of actors. This idea is strengthened by studies of Ramli *et al.* (2013) and Afonasova (2015) claiming that ICTs play a role in social change and regional economic restructuration. To gain positive feedback for users then the information given should fit their needs.

Low access to information caused by the limited availability of communication facilities and infrastructure, as well as the weakness of agribusiness institutional linkages with agribusiness freshwater fisheries. Agribusiness institutional has not been able to build a network and cooperation that can help agribusiness freshwater fisheries business development in the coastal area of Padang. In addition, local leaders may not be able to facilitate agribusiness in cooperation, help the problems that experienced by the agribusiness actors. Whereas according to Crocker *et al.* (2016) leader's opinions are usually more trusted in conveying information in training on capacity building (Fig. 2).

Furthermore, the ability of agribusiness actors interact with the surrounding environment is at a low level with a percentage of 54.93%. Low levels of social interaction illustrates that the agribusiness fisheries have not been able to build a network with others, cooperate and share information with other agribusiness actors such as from information centers or higher education institutions. As shown in the study of Sendegeya and Chiguvare (2016) education is important as the catalyst in capacity building and academic/higher education institutions act as the center of capacity building.

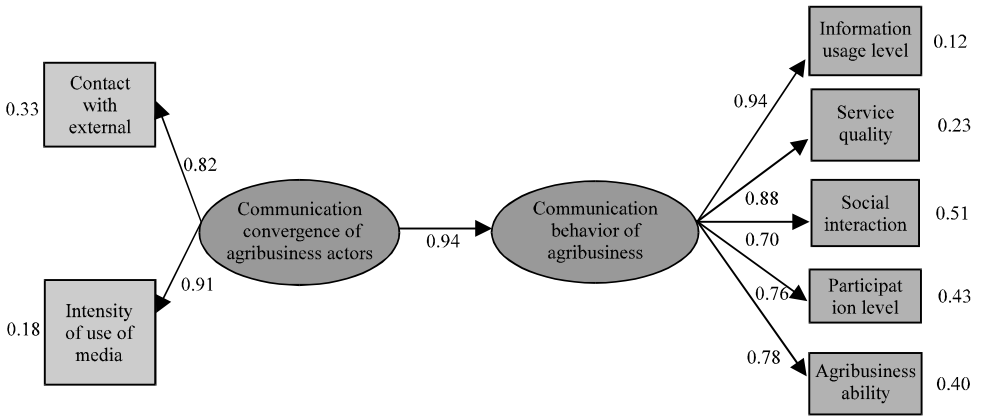


Fig. 3: Communication behavior influence ($Y_1$) toward converged communication in capacity development of agribusiness ($Y_2$) model

This results in lower levels of participation and business skills of agribusiness actors (44.37%). Agribusiness actors rarely participated in the transfer of knowledge and experience to others. Damisa *et al.* (2007) found that income level, perception, ownership rights and the participation rate of women had significant impact on agricultural production. Thus, the is need for training and strengthening the role of the group to improve the ability to interact, develop technology and information in accessing information. In accordance with the study of Chia (2014) and Tampere (2011) the Internet media and social media act as contributors to the overall community networks, both online and face-to-face has relevance in the development of social capital increasing opportunities for interaction and increase relational possibilities.

Capabilities for agribusiness actors are also at low levels (40.49%). This means that the ability of agribusiness in planning and financial management remains weak. Likewise in marketing still depends on the collector. Seeing this, it is needed to increase knowledge for agribusiness through training to perform post-harvest processing to enhance the competitiveness and the ability to market them online through the Internet. According to Zainal (2013) and Tersoo (2014) training is important to improve the ability to access information, enhance skills and knowledge as well as increase expertise and managerial competence.

**The influence of communication behavior on capacity building communication convergence:** The communication convergence in capacity building is positively and significantly influenced by contact with external parties of 0.82 or 82% and the media use intensity of 0.91 or 91% seen in Fig. 3.

From Fig. 3, we can conclude several structural equation model of the factors that influence communication convergence in capacity building which are:

$$Y_{2.1} = 0.94*Y_2, \text{Errorvar.} = 0.12, R^2 = 0.88$$
$$Y_{2.2} = 0.88*Y_2, \text{Errorvar.} = 0.23, R^2 = 0.78$$
$$Y_{2.3} = 0.70*Y_2, \text{Errorvar.} = 0.51, R^2 = 0.49$$
$$Y_{2.4} = 0.76*Y_2, \text{Errorvar.} = 0.43, R^2 = 0.58$$
$$Y_{2.5} = 0.78*Y_2, \text{Errorvar.} = 0.40, R^2 = 0.61$$
$$Y_{1.1} = 0.82*Y_1, \text{Errorvar.} = 0.33, R^2 = 0.67$$
$$Y_{1.2} = 0.91*Y_1, \text{Errorvar.} = 0.18, R^2 = 0.83$$
$$Y_2 = 0.94*Y_1, \text{Errorvar.} = 0.11, R^2 = 0.89$$

Collectively communication behavior has influence by 89% on the level of communication convergence in the capacity building of agribusiness freshwater fisheries, while the rest (11%) is the influence of other factors outside the model. Thus, the hypothesis "communication behavior of agribusiness actors significantly and positively infuence the communication convergence in the capacity building of the agribusiness freshwater fisheries" is accepted.

SEM Model of the influence of communication behavior ($Y_1$) on communication convergence ($Y_2$) at $\alpha = 0.05$ is seen that the value of RMR (Root $m^2$) of 0015 which is smaller than the standard value matches at $\alpha = 0.05$. This suggests the model is fit to describe the influence of communication behavior on communication convergence. Likewise, the value of RMSEA (Root Mean Square Error of Approximation) of 0.058≤0:08 at $\alpha = 0.05$ shows the fit models that describe the influence of the communication behavior on communication convergence of respondents. Criteria for determining the fit models can be seen in Table 1.

Table 1: Results of SEM model fit criteria

| Goodness-of-fit | Standard fit indices | Results | Conclusion |
|---|---|---|---|
| RMR (Root Mean square Residual) | ≤0.10 | 0.015 | Good fit |
| RMSEA (Root Mean Square Error of Approximation) | ≤0.08 | 0.058 | Good fit |
| AGFI (Adjusted Goodness of Fit Index) | ≥0.90 | 0.95 | Good fit |
| CFI (Comparative Fit Index) | ≥0.95 | 1.00 | Good fit |

Indicators that shape communication behavior variables are contact with external community and the intensity of communication media use. The intensity of media use indicator is the strongest factor that influences the communication convergence as reflected by information seeking and disseminating through the mass media, interpersonal communication and group communication. This means that the higher the intensity of media use by agribusiness freshwater fisheries, the higher the capacity building communication convergence.

The indicator contact with external community influence the communication convergence is reflected by obtaining information the frequency spread information with parties outside the community. This means that the higher the contact with the outside community who do agribusiness freshwater fisheries, the higher the capacity building of the communication convergence. As Leeuwis (2009) and Nonaka and Hirotaka (2005) stated the need for interaction in the interactive approach among stakeholders in this case between the freshwater fisheries agribusiness actors, since interaction paves the way for dialogue, sharing knowledge and building sufficient learning capacity, access to networks and resources that are relevant and building effective relationships to produce the expected involvement. This is also in line with the study of Ika and Donnelly (2017) who found that high commitment from multi-stakeholders, collaboration, harmony and adaptation is needed in order for capacity building projects to successfully increase the actor's ability to push development through better understanding.

Likewise the opinion of Chen *et al.* (2013) and Moradi *et al.* (2015) who saw the role of capacity building to prevent conflicts in the groups. Through typology og individual action and social interaction it can be found the factors that influence social interactions between people in the environment. As stated by Sidorenkov *et al.* (2016) conflict is based on the characteristics of each individual group members. Meanwhile, Gadzirayi *et al.* (2014) said that farmers can solve the problem of agriculture by themselves innnovation is self-initiated so that farmers are expected to encourage sustainable agriculturel researchers i to further develop meaningful knowledge, instead of just information transfer.

Furthermore, Sulaksana (2011) stated that rural agricultural development in Indonesia requires the collaboration of a farmer groups to build a comprehensive development program. When farmers come together in groups they gain a stronger bargaining position in relation to other agribusiness stakeholders.

Thus, communication convergence of agribusiness actors in capacity building needs to be improved by strengthening contacts with external parties and strengthening the intensity of communication media usage through training by enhancing the role of the leader in a group in line with Asiedu (2012) and Hoq (2015), it is important to address the issue of access to information, services and provision of information in the rural areas sustainably and relevant to the needs of local communities by taking into account the social, organizational and information technology in achieving the communication convergence.

## CONCLUSION

Communication behavior of freshwater fisheries agribusiness actors in accessing information is generally in low category as shown by the limited contacts with other parties to look for information and also the low intensity of media usage in searching and spreading information through interpersonal communication or mass media.

The overall communication convergence of freshwater fisheries agribusiness actors in capacity building are generally are in low category, as shown by the low quality of information service, social interaction, participation level and ability to conduct agribusiness while also show some positive in information implementation. Therefore, it shows some possibilities for improvement.

Communication convergence is positively and significantly influenced by communication behavior of agribusiness actor in accessing information. The more the actor of freshwater fisheries agribusiness makes contact with outside parties and the higher the intensity of mass media usage in searching and spreading agribusiness information the higher the communication convergence in agribusiness capacity building.

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