Factors Influencing Agricultural Extension Competence at Samosir Island Agritourism, Lake Toba

Helena Tatcher Pakpahan, Ravik Karsidi, Sugihardjo and Sapja Anantayu
Sebelas Maret University, Surakarta, Indonesia

Keywords: Extensions, Competence, Agritourism, Samosir Island, Lake Toba.

Abstract: This study aimed to determine what factors affected agricultural extensions' competence in the agritourism region of Samosir Island, Lake Toba. The research method is quantitative that uses a survey technique. The data collection technique was questionnaires distributed to 44 agricultural extensions in Lake Toba's Samosir island. The data analysis tool used is multiple linear regression with SPSS version 25. The results of the study concluded that factors affecting the competence of the extensions were age, work experiences, number of dependents, total income, number of fostered farmers, education and training, achievement motivation, technology, and government policies. The level of education and the number of assisted villages were the factors that did not affect the competence of agricultural extensions in the region of agritourism of Samosir Island, Lake Toba.

1 INTRODUCTION

Lake Toba is the largest caldera lake globally, located in North Sumatra Province. In the middle of Lake Toba, there is an island called Samosir Island. The enormous contributions to the regencies' economy in the region of Lake Toba were agriculture, plantations, farming/ livestock, fisheries, trade, hotel, and restaurant sectors (tourism sectors). Agricultural potential is developed as an agritourism product/ attraction in each regency of the region of Lake Toba. Agrotourism in the region of Lake Toba will highlight the local culture in utilizing its agricultural land so that it is expected to increase farmers' income while conserving natural resources (Anonimous, 2017). According to Knowd (2006), the primary motivation to engage in agricultural tourism is economic sustainability. The primary motivation for agritourism in Sweden is social contact and cultural exchange; the presence of tourists is seen as favorable by farmers (Gössling and Mattsson, 2002). According to Barbieri and Mahoney (2009), agritourism is due to economic motives and the need to generate additional income in agriculture, namely the sustainability of agriculture and the improvement of the quality of family life. Mahaliyanaarachchi's (2016) research result in Sri Lanka shows that agricultural extension is significant in promoting and developing agritourism. The Lake Toba regency has a strategic position in national agricultural development, so its existence needs to be supported by human resources, especially by the agricultural extensions which are competent in carrying out their duties. Responding to the changes in the strategic environment, such as agritourism, and the demands of the community's needs for economic sustainability, it is necessary to have the competence of the agricultural extensions under this development.

The collaboration of farming communities and agricultural extension services can build agritourism both in the existing agricultural and new agricultural ones. Extension activities are essential to invite others to be interested in agritourism. The agricultural extensions must be competent and encourage farmers and the community to acquire new knowledge (Živković at. al., 2009). The competence of agricultural extension is needed to carry out extension activities with the goals that have been set (Pakpahan, 2017). The extensions' low competence results in the extensions' low performance, which will ultimately have an impact on the services provided to farmers (Pakpahan, 2018). Conditions in the field illustrate that the competence of the agricultural extensions is still not as expected by farmers. The factors causing the low competence of the extensions need to be identified

Pakpahan, H., Karsidi, R., Sugihardjo, . and Anantayu, S.
Factors Influencing Agricultural Extension Competence at Samosir Island Agritourism, Lake Toba.
DOI: 10.5220/0010805600003348
In *Proceedings of the 3rd Annual International Conference on Social Sciences and Humanities (AICOSH 2021)*, pages 119-124
ISBN: 978-989-758-603-3; ISSN: 2685-273X

and solutions sought. This research will answer the factors that affect the competence of the extensions. This paper aims to determine the factors that affect the competence of agricultural extensions in the region of agritourism of Samosir Island, Lake Toba.

2 METHOD

This research is located in Samosir Island, the Province of North Sumatra. The research uses quantitative research, namely survey research. The data collection method used questionnaires distributed to respondents as the research samples. The populations in this study were all agricultural extension workers in Samosir regencies. The method of determining the sample in this study is the census. The sample consisted of 44 respondents. This study used the ordinal scale data, the scale given as an object. The measurement scale used was a Likert scale. The data that had been collected was then measured and scored. The technique of analyzing data used was multiple linear regression. This research involved eleven independent variables (X1) the age (years), (X2) the education level (years), (X3) the work experience (years), (X4) the number of dependents (life/ person), (X5) the total income (rupiahs), (X6) the number of assisted villages (villages), (X7) the number of fostered farmers (souls/person), (X8) the education and training, (X9) the achievement motivation, (X10) the technology and (X11) the policies. The competency of the extensions as a dependent variable.

3 RESULT AND DISCUSSION

A simultaneous test compares the F-count with the F-table: Obtained F-count was 388.350, and F-table was 2.09. F-count were significantly lower than F-table ($p < .05$). It means that the independent variables (i.e., age, education, work experiences, number of dependents, total income, number of assisted villages, number of assisted farmers, education and training, achievement motivation, technology, and government policy) simultaneously have a significant effect on the dependent variable (the competence of agritourism extensions).

Determination coefficient analysis was intended to determine how much influence given by variable X to variable Y. N use values of R^2 of 0.993 (99.3 %), which mean that the variation of the dependent variable (the competence of the agritourism extensions) could be explained by independent variables namely, age, education level, work experience, number of dependents, total income, number of assisted villages, number of fostered farmers, education and training, achievement motivation, technology, and government policies while the remaining 0.7 % was explained by other variables that were not included in this estimation model.

a. Age (X_1) had an influence on the competence of the extensions with the regression coefficient of -14.984. It means that the age variable had an influence on competence of the extension, if the age increased by 1 year, the competency would decrease by 14,984 and vice versa. Partial test by comparing t-count and t-table was obtained for the age t-count = - 25,363 > t-table = 2.036 with a significant value of 0.00 <0.05. It showed that partially the age had a significant effect on the competence. The age was one of the factors that affected a person's physical ability to be able to accept the latest ideas or innovations, as well as affected the way of thinking and the competitiveness of everyone at work. The results of this study were strengthened by Padmowihardjo (2011), which stated that one's age was strongly suspected to affect his ability, both physical ability and thinking ability (intelligence). The older one's age the less his ability or it could be said that it would decrease his ability.
b. Level of education (X_2) had an influence on the competence, with a regression coefficient of 0.556. It means that the education level variable had an influence on the competence, if the education variable increased by 1 year, the competency would increase by 0.556 and vice versa. Partial test by comparing t-count and t-table was obtained for the education level t-count = 1.395 < t-table = 2.036 with a significant value of 0.173 > 0.05. It showed that partially the level of education has no real effect on the competence. The education played an important role as a determinant of the quality of human resources. The education was something that could educate and help the development of a human being completely, having knowledge, having great character, being independent, and having a strong personality. One's ability was influenced by the level of education that had been taken. The highly educated people were relatively faster in receiving an update occured. The higher the level of education would enable one's to think better in dealing with the situation.

c. Work experience (X_3) had an influence on the competence, with a regression coefficient of - 3.397. It means that the work experience variable had an influence on the competence, if the work experience variable increased by 1 year, the competency 1 would decrease by 3.397 and vice versa. Partial test by comparing t-count and t-tables was obtained for the work experience t-count = -6.225 > t-table = 2.036 with a significant value of 0.00 <0.05. It showed that partially the working experience had a significant effect on the competence.
d. Number of dependents (X_4) had an influence on the competence with a regression coefficient of - 5,390. It means that the variable number of dependents had an influence on the competence, if the variable number of dependents increased by 1 unit, the competency would decrease by 5,390 and vice versa. Partial test by comparing t-count and t-table was obtained for the number of dependents t-count = - 12,537 > t-table = 2.036 with a sig value of 0.00 < 0.05. It showed that partially the number of dependents had a significant effect on the competence. The number of dependents of a family were all members of the family who were dependent of the household whose took responsibility by the head of the family. The more the number of a family dependents, the more expenses (Baroh, 2011). The increasing number of dependents in the family would reduce the competence of the extensions.
e. Total income (X_5) had an influence on the competence with a regression coefficient of – 8.212. It means that the variable of total income had an influence on the competence if the variable of total income increased by 1 unit, the competency would decreased by 8.212 and vice versa. Partial test by comparing t-count and t-table was obtained for the total income t-count = - 15.589 > t-table = 2.036 with a sig value of 0.00 <0.05. It showed that partially the total income had a significant effect on the the competence. A family should pay attention to the number of children because it could affect the family income (Rahayu and Tisnawati, 2014).
f. Number of assisted villages (X_6) had an influence on the competence with a regression coefficient of 0.062. It means that the variable number of assisted villages had an influence on the competency, if the variable number of assisted villages increased by 1 unit, the competency would increase by 0.062 and vice versa. Partial test by comparing t-count and t-table was obtained for the number of assisted villages t-count = 0.095 < t-table = 2.036 with a significant value of 0.925 > 0.05, It showed that partially the number of assisted villages have no real effect on the competency. The target village was an area where respondents carried out their duties and responsibilities. The Government Regulations in Law Number 19 of 2013 concerning Protection and Empowerment of Farmers and the Minister of Agriculture Regulations Number 72 of 2011 concerning Guidelines for Formulating Functional Position Formation of Agricultural Extension Officers stated that at least one extension worker in one village with agricultural potential.
g. Number of assisted farmers (X_7) had an influence on the competence with a regression coefficient of – 12.917. It means that the variable number of assisted farmers had an influence on the competence if the variable number of assisted farmers increased by 1 unit, the competency would decrease by 12.917 and vice versa. Partial test by comparing t-count and t-table was obtained for the number of fostered farmers t-count = - 24,578 > t-table = 2.036 with a significant value of 0.00 <0.05 It shows that partially the number of assisted farmers had a significant effect on the competence. The wider the working area, the more the number of assisted farmer groups. The agricultural extensions who had too many assisted farmer groups would not have sufficient time to add and deepen their knowledge and skills in order to maintain the quality of their extension activities so that the lack of time and the high workload would be obstacles for the agricultural extensions to improve their competence (Lakai *et al al*., 2012).
h. Education and training (X_8) had an effect on the competence with a regression coefficient of 0.314. It means that the education and training variable had an influence on the competence if the education and training variable increased by 1 unit, the competency would increase by 0.314 and vice versa. Partial test by comparing t-count and t-table was obtained for the education and training t-count = 12.818 > t-table = 2.036 with a significant value of 0.00 <0.05. It showed that partially education and training had a significant effect on the competence. The education and training was one of the efforts to improve the competence and performance of the agricultural extensions so that they met work standards. The education and training included two aspects,

namely the education and training which had the same goal, that was to improve one's competency in doing his job. The education and training of the extensions could be seen from the indicators used, namely, the ability of the education and training providers, the suitability of the curriculum with the implementation of training and the evaluation of training. The results of the study were in line with the concept put forward by Blanchard and Huszeza (Gomes, 2002), an effective training should include planning based on needs, learning experiences, and planned activities. Slamet (2003), stated that to improve the competence of the extensions through training, it was necessary to organize and improve the training institutions which handle the extensions. The extension workers should be trained and practiced regularly through the education and training and specific materials about locations needed by farmers in agritourism area. The competence could be improved through training and education programs (Bangun, 2012).

i. Achievement motivation (X_9) had an influence on the competence with a regression coefficient of 0.055. It means that the achievement motivation variable had an influence on the competence if the achievement motivation variable increased by 1 unit, the extension's competency would increase by 0.055 and vice versa. Partial test by comparing t-count and t-table was obtained for the achievement motivation t-count = 2.815 > t-table = 2.036 with a significant value of 0.008 < 0.05. It showed that partially the achievement motivation had a significant effect on the competence. The motivation for this research was the intrinsic and extrinsic. The intrinsic motivation was the motives that became active or did not need to be stimulated from the outside, because within each individual there was an urge to do something. The intrinsic motivation were responsibility and career while extrinsic indicators were wages, working conditions and status. The extrinsic motivation was the active motives and it functioned because of external stimuli. The Extrinsic motivation consisted of working conditions, wages, and status. Good working conditions, wages, and status would affect the competence. The results of this study were strengthened by Sterr (1996) and Gibson *et. al.,* (1989) which stated that there were two conclusions, namely (1) the condition of extrinsic, the condition of job which resulted in discontent among employees if the condition did not exist, those conditions such as wages, work guarantee, working conditions and working status; (2) the intrinsic conditions, work would drive strong motivation such as achievement, recognition and job responsibility. The environment had a big role in motivating a person, which was the place where one's lived or where one's worked, higher status such as promotions, wages which were payments for physical services provided by employers to workers. With rewards, one's could be motivated by the provision of rewards after one's performed an activity or a certain activity (Suhardi, 2013). The greater the motivation that an extension had towards his/her responsibilities and career, the greater the effect on the competence. The strength and weakness work motivation had by a worker's would determine the size of his or her achievements (Anoraga, 2011). According to Ma'ruf *et al*., (2011), motivation had a significant effect in increasing competence.

j. Technology (X_{10}) had an influence on the competence with a regression coefficient of 0.753. It means that the variable of technology had an influence on the competence if the variable of technology increased by 1 unit, the competency would increase by 0.753 and vice versa. Partial test by comparing t-count with t-table was obtained for technology t-count = 8.274 > t-table = 2.036 with a significant value of 0.00 <0.05. It showed that partially technology had a significant effect on the competence. Limited resources and learning facilities for the extensions like books/ magazines, computer to access information was limited and even did not exist, lack of interaction with the learning resources such discussed with related researchers associated with the technology of specific location associated with the increased competence. The results of this study were strengthened by Atrisiandy (2015), which stated that technology could also help the course of an agricultural extension. Nowadays, there was no activities without using technology.

k. Government policy (X_{11}) had an influence on the competence with a regression coefficient of 1.630. It means that the government policy variable had an influence on the competence if the government policy variable increased by 1 unit, then the competency would increase by 1.630 and vice versa. Partial test by comparing t-count and t-table was obtained for the government policy t-count = 22.323 > t-table =

2.036 with a significance value of 0.00 <0.05. It showed that partially the government policies had a significant effect on the competence. The government policies could shape the character of the extensions so that it affected the competency of the extensions. The government policies related to the objectives, functions and targets of the extension workers were stated in the Constitution of the Republic of Indonesia No. 16 of 2006 concerning Agricultural, Fisheries, and Forestry Extension Systems Chapter III Article 4. The government policies in implementing agricultural extensions had the principles of decentralization, participatory, openness, self-reliance, equal partnership, accountability and integration, as well as in line with the vision of extension, namely extension workers who had strong professional integrity and independent and sustainable food security, with the mission of realizing independent and sustainable food security based on local resources and organizing dynamic and agribusiness-oriented extension services. The extensions' career was underdeveloped; the extensions got less opportunities to participate in formal education to a higher level, to follow activities such as seminars and workshops, and to follow training related to the field of counseling; an unclear of career promotion development and a work appreciation toward the extension workers (*reward and punishment*).

1. Coefficient of e or error indicated that there were other variables that affected the competence of the extension's that were not included in this study.

4 CONCLUSION

The determinant factors that influenced on the competence of the agricultural extensions in the region of agritourism of Samosir Island, Lake Toba were the age of the extension, the work experiences, the number of dependents, the total income, the number of assisted farmers, the education and training, the achievement motivation, the technology, and the government policies. The factors that did not affect the competence of the agricultural extensions in the region of agritourism of Samosir Island, Lake Toba were the level of education and the number of assisted villages.

SUGGESTIONS

It was necessary to conduct further research related to professional extensions in the region of agritourism whether the environmental factors, the extension capabilities, the role of the extensions, the independence of the extensions, the farmers needed in the region of agritourism, and the competency of the extensions in the region of agritourism.

REFERENCES

Anoraga. 2011. *Management Psychology*. Rineka Cipta, Bandung.

Atrisiandy, K. 2014. Agricultural Extension Professionalism Development Through Mastery of Information Technology (Ti), https://docplayer.info/46193069, Access November 20, 2019; 08.16.

Bangun, W. 2012. *Human Resource Management.* Erlangga, Jakarta.

Barbieri, C & E. Mahoney. 2009. Why Is Diversification an Attractive Farm Adjustment Strategy? Insights from Texas Farmers and Ranchers. *Journal of Rural Studies.* Vol 25, no1, pp.58-66.

Baroh. 2011. Analysis of Added Value and Distribution of Jackfruit Chips Case Study on Jackfruit Chips Agroindustry in Lumajang. LP UMM, Malang.

Gibson, J.L., J. M Ivancevich., & J. H Donelly. 1989. Organizations. Translated by Agus Dharma. Erlangga, Jakarta.

Gomes, F. C. 2002. *Human Resource Management*. Andi, Yogyakarta.

Gössling, S and Mattsson S. 2002. Farm Tourism in Sweden: Structure e, Growth and Characteristics. Scandinavian Journal of Hospitality and Tourism. Vol 2, no 1, pp.17-30.

Knowd. 2006. Tourism as a Mechanism for Farm Survival. Journal of Sustainable Tourism. Vol 14, no 1, pp. 24-42.

Lakai D, Jayaratne, K. S. U., G. E. Moore, M. J. Kistler. 2012. Barriers And Effective Educational Strategies To Develop Extension Agents' Professional Competencies. Journal of Extension. Vol 50, no 40,pp. 1-7.

Mahaliyanaarachchi R. P. 2016. Role Of Agricultural Extension In Promotion And Development Of Agri Tourism In Sri Lanka. Sabaragamuwa University Journal. Vol 6, no 1, pp.13-22.

Padmowihardjo S.2013. Reorganizing Agricultural Extension in the Era of Agribusiness Development. Agriculture Department. Jakarta.

Pakpahan H. T. 2017. *Agricultural Extension*. Plantaxia Publishers, Yogyakarta.

Permentan No 72. 2011. *About Guidelines Functional Formation of Agricultural Extension*.

Rahayu S. U and N. M. Tisnawati. 2014. Analysis of the Influence of Number of Family Dependents, Age, Education and Employment Status on Single Parent Women's Family Income. Journal of Applied Quantitative Economics. Vol 7, no 2, pp.83.

Slamet M. 2003. A New Paradigm of Agricultural Extension in the Era of Regional Autonomy. In Shaping Patterns of Human Development Behavior. Edited by: Adjat Sudrajat and Ida Yustina, IPB Press, Bogor.

Steers R. M. L., W. Porter, & G. A Bigley. 1996. *Motivation and Leadership at Work.* The McGraw-Hill. Companies. Inc, New York.

Suhardi. 2013. *The Science Of Motivation The Book of Motivation*. PT. Elex Media Komputindo, Jakarta.

RI Law. No.16 Year 2006. About Extension System for Agriculture, Fisheries, and Forestry. Ministry of Forestry, Forestry Development Center, Jakarta.

RI Law. No. 19 Years. 2013. “on the Protection and Empowerment of Farmers”.

Zivkovic D., Jelic, S., Z. Rajic. 2009. Agricultural Extension Service in the Function of Rural Development. Paper prepared for presentation at the 113th EAAE Seminar “The Role of Knowledge, Innovation and Human Capital In Multifunctional Agriculture and Territorial Rural Development”, Belgrade, Republic of Serbia December 9-11.