

Original Research Article

**ATTITUDE OF FARMERS AND FACTOR ASSOCIATED WITH FARMERS ATTITUDE
TOWARDS AGRICULTURAL EXTENSION SERVICES PROVIDED BY PRIVATE
ORGANIZATIONS IN KIBONDO DISTRICT**

Abstract

The main focus of this study is based on extension services provided by private organizations such as non-Government organizations (NGOs), Farmer Based organizations (FBOs) and private agribusiness firms. However, prior to make any decision regarding the quality of extension services from these organizations, it is crucial to understand the perspective of farmers regarding the privatization of agricultural extension services. Therefore, the study intended to analyze farmers attitude towards agricultural extension services provided by private organizations. The study employed the use of 120 respondents selected from four villages kibingo, kitahana, Biturana and Bitare. The study used a total of 10 statements which were obtained from literatures, informal meeting with farmers and agricultural extension officer. Six statements were positive and four statements were negative. Prior data analysis all negative statements were converted to positive statements. Thereafter, data were analyzed by using Statistical package for social science version 20 in which descriptive statistics such as frequency, percentage and mean were computed. The study found that 75% had unfavorable attitude, 11.7% had favorable attitude, 12.5% were neutral and 0.8% had most unfavorable attitude toward agricultural extension services provided by private organizations. Also, ordinal regression was used to determine factors associated with farmers attitude among all factors only group membership was found to be positive and statistically significant with $P < 0.000$ and odds ratio of 0.002. The study suggests that important strategies such as spreading awareness to farmers about private organizations, fostering public-private partnership and encouraging farmers to join agricultural associations.

Key words: Attitude, agricultural extension services, private providers

1. INTRODUCTION

Agricultural extension plays a vital role in promoting agricultural development in many countries by facilitating the transfer of knowledge, fostering collaboration among stakeholders, and empowering farmers with essential skills and practices. According to researchers such as Blum (2020), Christoplos (2010), and FAO (2014), agricultural extension goes beyond simply providing information; it also involves ensuring farmers' access to resources like credit, markets, and inputs. Additionally, supporting smallholder farmers in adapting their production to climate change and building resilient livelihoods is crucial for achieving food security, reducing poverty, and promoting sustainable rural development. On top of that, agricultural extension acts as an intermediary, connecting farmers with relevant stakeholders in research, education, agribusiness, and other institutions. This collaborative approach helps farmers stay updated with the latest advancements in the agricultural sector and enables them to adopt innovative practices and technologies. The increasing global population, projected to reach 9.6 billion people by 2050, poses significant challenges for agriculture. Meeting the growing food demand requires a minimum global increase in agricultural output of 60 percent and 100 percent in developing countries, which can only be achieved through agricultural extension (FAO, 2014). In

response to this need, countries including Tanzania have been recognizing the importance of reforming their agricultural extension service systems.

The decentralization of agricultural extension services in Tanzania in 1999 was a significant shift from the previous centralized system. Under the centralized system, the Ministry of Agriculture had complete control over extension services throughout the country, and the delivery of these services followed a top-down approach. However, this system proved to be ineffective as it did not adequately address the needs and preferences of farmers. One of the main drawbacks of the centralized system was that extension workers prioritized the instructions given by their superiors over the needs of the farmers they were supposed to serve (Abed et al., 2020). This lack of accountability to the farmers led to a disconnect between the extension services provided and the actual requirements of the farming communities. To address these issues, the government decided to decentralize agricultural extension services to the local governments in 1999. This shift meant that the responsibility for supervising and coordinating extension services was transferred from the Ministry of Agriculture to the local level. Local governments were now entrusted with the task of overseeing the provision of agricultural extension services in their respective areas (Rutatora&Mattee, 2001). The aim of decentralization was to bring decision-making closer to the farmers and ensure that the services provided were more responsive to their specific needs and preferences. Local governments, being closer to the ground and having a better understanding of local conditions and challenges, were expected to play a more active role in tailoring extension programs to suit the requirements of their respective communities. Moreover, the decentralization of agricultural extension services in Tanzania was a step towards empowering local governments and involving farmers in the decision-making process. By giving local authorities the authority to supervise and coordinate extension services. It was hoped that the services would become more demand-driven, efficient, and effective in addressing the needs of farmers. The government recognized that the existing system did not effectively meet the needs of farmers due to a low ratio of extension workers to farmers and a failure to achieve the recommended ratio of one extension worker per village and decline of government expenditure (Rutatora&Mattee, 2001; Busungu et al., 2019).

In order to tackle these challenges, the government has decided to move away from being the exclusive provider of extension services and adopt a pluralistic system. This new approach involves bringing together different stakeholders in agricultural development, including private companies, non-governmental organizations (NGOs), farmer organizations, and specialized consulting firms, to collaborate in offering extension services (Rutatora&Mattee, 2001; Kwileja, 2014). According to Blum (2020), the rationale behind this pluralistic approach is the belief that these stakeholders can deliver extension services more efficiently and effectively than public sector agencies, resulting in long-term and sustainable services.

To demonstrate its commitment to improving the quality and delivery of agricultural extension services, the government launched the Agricultural Sector Development Programme (ASDP II) in 2017. This program aims to enhance the involvement of other stakeholders in agricultural development, such as NGOs, community-based organizations (CBOs), and private agribusiness

firms. The focus is on providing extension services based on the specific needs of farmers, driven by demand rather than solely relying on supply-driven approaches. By engaging a variety of actors in the provision of extension services, the government hopes to overcome the limitations of the previous centralized system and establish a more effective and responsive delivery system for farmers (URT, 2017).

In the same way, the national agricultural policy places significant emphasis on the importance of quality extension services within the agricultural sector. It acknowledges the necessity of increased involvement from the private sector in delivering these services and aims to guarantee access to agricultural extension services for both rural and urban farmers. The government sees the engagement of private agribusiness firms, non-governmental organizations, and community-based organizations as part of its efforts to enhance extension services. Despite of private sectors involvement, the government remains the primary stakeholder, overseeing and coordinating all activities conducted by private entities in this capacity. To facilitate this collaboration, each district appoints a District Focal Person (DFP) who acts as the coordinator and supervisor for private extension service providers within the district. This arrangement fosters cooperation between the government and the private sector, leveraging their respective strengths and resources to expand the reach and effectiveness of extension services in the agricultural sector. Through supervision and coordination, the government ensures that private providers align their activities with the objectives and standards outlined in the national agricultural policy.

Regardless of the involvement of private organizations in providing extension services, it is crucial to comprehend the attitudes of the users of these services. The ability of farmers to utilize or reject extension services from private organizations is largely influenced by their attitudes. Gaining an understanding of farmers' attitudes towards agricultural extension services is vital for customizing service delivery, promoting the adoption of innovations, encouraging appropriate agricultural practices, enhancing collaboration among stakeholders, and continuously improving extension programs. This understanding enables extension agents to effectively address farmers' concerns, provide relevant information, and facilitate positive changes in the agricultural sector (Manisha Pandey *et al.*, 2020; Keur *et al.*, 2014). Similarly, farmers' attitudes offer valuable feedback on the effectiveness and relevance of extension programs. By collecting and analyzing farmers' feedback, extension organizations can identify the strengths and weaknesses of their services, pinpoint areas for improvement, and make necessary adjustments. This iterative process ensures that extension programs remain responsive to farmers' needs and contribute to their overall development. Moreover, according to Keur *et al.* (2014), understanding farmers' attitudes ensures sustainable and long-term impact since agricultural extension services are often implemented with the objective of achieving lasting impact and sustainable agricultural practices. By understanding farmers' attitudes, extension workers can design programs that are not only effective in the short term but also foster the sustained adoption of improved practices over time. This understanding facilitates the identification of factors that influence long-term behavioral changes, enabling extension services to better support farmers in achieving sustainable agricultural development. However, before making any decisions about the quality of current private extension services, it is crucial to comprehend farmers' perspectives regarding the privatization of agricultural extension services.

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Taking this into account, the objective of this study was to assess farmers' attitudes towards extension services provided by private organizations and identify the factors associated with their attitudes.

2. METHODOLOGY

Study Area

This research was carried out in Kibondo district, situated in Kigoma region of Tanzania. Geographically, the district is located in the Northern part of the region and covers an area of approximately 8364.84 square kilometers. According to the Kibondo District Council's Five-Year Strategic Plan for the period of 2016-2022, the district had a population of 272,431 in 2021, with 87% of the population engaged in agriculture. This indicates that the majority of the district's residents rely on agriculture for their livelihoods. The district possesses an estimated 2215.93 square kilometers of fertile land suitable for crop cultivation, and its favorable climatic conditions, characterized by an annual rainfall of around 1776mm and an average temperature of 69.8 degrees Celsius, support the growth of a wide variety of food and cash crops. In terms of agricultural extension services, the district has a total of 33 public extension staff members, with 8 stationed at the district headquarters, 13 at the ward level, and 12 at the village level, as outlined in the Kibondo District Council's Five-Year Strategic Plan for 2016-2022. The choice of this district for the study was influenced by the presence of numerous private organizations that offer various extension services to the local communities, including villages near refugee camps and the camps themselves.

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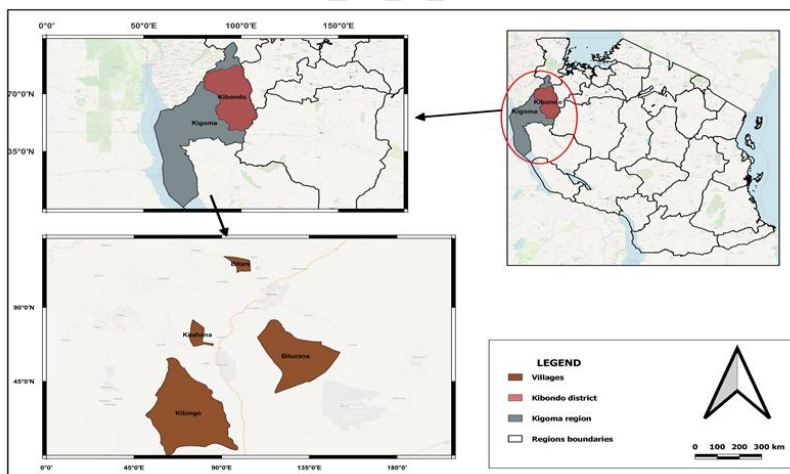


Fig.1, Map of Kibondo district council showing the location of the study area

Sampling procedures and sample size

The research employed a multi-stage sampling approach in which the district was purposefully chosen due to the presence of private organizations offering extension services to farmers. Subsequently, four wards were randomly selected from the list provided by the district's office. Thereafter, one village from each selected ward was randomly selected to make total of a four village. To gather data, the researchers obtained the village register book from each village and randomly chose 120 households for the study, specifically 30 households from each of the four villages. The sampling unit was a household, and the target population comprised one adult member from each selected household. It is advised that a sample size of 80-120 respondents is sufficient for conducting socio-economic studies in sub-Saharan African countries, including Tanzania, as recommended by previous studies (Gbawoquiya, 2017; Iddiet *al.*, 2023).

Data Collection Procedures

The research employed a cross-sectional design, where data was gathered at a single point in time from selected samples. Prior to data collection, enumerators underwent training on data collection procedures, and questionnaires were pre-tested to identify and correct any technical errors. This ensured that the tool used for data collection was simple, appropriate, and not time-consuming. Subsequently, 120 smallholder farmers were interviewed using semi-structured questionnaires to assess their attitude toward extension services provided by private organizations. To gain additional insights key informants including managers, directors of private organizations, and public extension workers were interviewed using a checklist. Furthermore, focus group discussions (FGDs) were conducted, guided by a set of predetermined questions.

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Data processing and analysis

In this study the term attitude refers to the degree of favorability or unfavorability that an individual had toward agricultural extension services provided by private organizations. The statement that used to measure farmers attitude were obtained from literatures, informal meeting with farmers and agricultural extension experts to construct a scale. To avoid acquiescence both positive and negative statements were constructed to make a total of 10 statements, whereby 6 statements were positive and 4 statements were negative. Thereafter, before data analysis all negative statements were converted into positive statement in order to obtain appropriate statement so as to construct an index. Once data collection was completed, quantitative data was recoded, entered into computer, cleaned, and analyzed using the Statistical Package for Social Sciences (SPSS) version 20 software. Descriptive statistics such as frequency, percentage, and mean were calculated and ordinal logistic regression model was used to determine the association between dependent and independent variables. Respondents were asked to express their attitude on five-point Likert scale whereby, strongly agree=5, agree=4, neutral=3, disagree=2, to strongly disagree=1. To decide if respondent shows favorable or unfavorable attitude towards extension services from private organizations an index was constructed. The index shows the scoring range of Likert scales and then the overall mean of all statements responded by respondent is compared to the scoring range and tell if respondent had favorable or unfavorable attitude. The index is shown here bellow:

Table 1: The scoring range of Likert scale of the survey

	Value	Range
Strongly disagree	1	1.00-1.80
Disagree	2	1.90-2.60
Neutral	3	2.70-3.40
Agree	4	3.50-4.20
Strongly agree	5	4.30-5.0

3. RESULTS AND DISCUSSION

Critical Analysis of table 1 revealed that 89.2 per cent of respondents strongly disagree or disagree with the statement that I can easily access extension services provided by private organizations with 1.64 mean value. Respondents reported that they face difficulties in accessing extension services from private organizations, that these organizations do not have a regular timetable to meet with farmers in order to provide services. Farmers who benefit from these services reported that they do not access the services frequently, some access services once in three months and some once per year. Moreover, farmers who had no access to extension services also reported that they don't have access because, they are not aware of these organizations that provide extension services to farmers. Furthermore, 67.5 per cent of respondents strongly agree or agree with the statement that I am willing to pay for extension service provided by private organizations with 3.93 mean value. Both farmers who had access and with no access agreed that they are willing to pay in order to access extension services from private organizations. Majority of them reported that agricultural extension services are important in agricultural production. Hence declared that they are willing to pay for the services in order to access them to improve agricultural production. It is surprising that even farmers who had no access to extension services from private organizations are willing to pay only if these organizations decide to reach **them**.

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The results show 83.4 per cent of respondents showed their disagreement and strongly disagree or disagree with the statement that private organizations bring timely services with 1.67 mean value. During the study respondents reported that private organizations provide good extension services but the main problems of these organizations is that they do not bring services such as inputs in time. Sometimes farmers order various inputs such as seeds from these organizations but there is delay in provision of those particular inputs. This cause farmers to face difficulties in their production activities. Additionally, majority of respondents 95 per cent of respondents had unfavorable attitude and strongly disagree or disagree with the statement the private organizations provide me with good transport and grading services for their produce with 1.34 mean value. Majority of respondents reported that private organization do not provide farmers with transportation and grading services. Instead, they provide technical or advisory, inputs, marketing and financial services to farmers, but when it comes on transportation services individual farmer is responsible to make transportation logistics of the produce from the farm to the **market**.

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Furthermore, 43.4 per cent of respondents strongly agree or agree with the statement that private extension services increase farmers income with 2.99 mean value. Private organizations train farmers on how to improve their living standards through agriculture. Farmers are taught good horticultural practices and through this, farmers are able to grow varieties of horticultural crops such as vegetable and fruits by using good agricultural practices for income generation. During the study respondents who had access to extension services from private organizations reported that their income increases because private organizations provide them with enough skills which help them to diversify their agricultural activities. Likewise, farmer who did not have access to extension services they also witnessed that farmers who access extension services their income level increase. About 82.5 per cent of respondent had unfavorable attitude and strongly disagree or disagree with the statement that I receive quality extension services from private organizations with 1.88 mean value. Majority of farmers who had unfavorable attitude toward this statement were the ones who had no access to extension services. Since they were not aware of private organizations and services which are provided by these organizations so they cannot judge the quality of the services. The positive attitude was expressed by farmers who had access to extension services provided by private organizations. They reported that services received from private organizations are of good quality, since they are demand-driven rather than supply driven and there is a lot of follow-ups done by providers to make sure that services provided bring positive outcomes in farmers practices.

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85.8 per cent showed their disagreement by strongly disagree or disagree with the statement that private organization infrastructures and facilities are sufficient to meet the needs of farmers with 1.77 mean value. During the study respondents reported that, the infrastructures and facilities such as cars, extension workers are not enough to meet their needs. As a result, their contact with these organizations is very minimal thus, hinders their access to extension services. Furthermore, managers and directors of private organizations during in-depth interviews reported that

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“Sometimes we face difficulties in provision of extension services to farmers, due to financial problem of the organization we fail to recruit many extension workers who could serve farmers as well as we fail to purchase enough cars for transportation of workers in villages to provide extension services. As a result, we decide to serve few farmers who are within our priorities” (11/2/2023, Kibondo district)

The results show about 95 per cent of respondents strongly agree or agree with the statement that Private extension services are mostly accessed with farmers who belong to a group with 4.62 mean value. During the study majority of respondents reported that most of farmers who receive extension services from private organizations are the ones who belong to a group only. A farmer who has no group membership can not access extension services, since private organizations prefer working with farmers who are in groups. Furthermore, one of the key informants was quoted saying

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“Agricultural groups have proven to be the most effective means of facilitating the delivery of extension services to farmer. Typically, farmers who benefit from our extension services are those affiliated with a group. The financial constrain faced by our

organization make it challenging for us to reach individual farmers. Therefore, we prioritize collaborating with farmers who are part of a specific group” (10/2/2023, Kibondo district)

95.2 percent of respondents showed their disagreement with the statement that Private extension services favor rural-based farmers with 1.54 mean value. It is clearly depicted by majority of respondents reported that most of these organizations neglect rural-based farmers and this may be due to poor infrastructures such as rough roads, and security issues (theft and robbery) in rural areas. Also, it was reported by one key informant that:

“Due to poor roads and low security, we normally prefer working with farmers who are nearby urban areas. All this we do for our own safety. Since there is a lot of theft and robbery issues in rural areas.”(10/2/2023, Kibondo district)

Table 2: Statements wise distribution of farmers attitude towards extension services from private organizations

Statements	SD	D	N	A	SA	Mean
I can easily access extension services provided by private organizations	74(61.7%)	33(27.5%)	0(0.00%)	8(6.7%)	5(4.2%)	1.64
I am willing to pay for extension services provided by private organizations	12(10%)	15(12.5%)	12(10.0%)	11(9.2%)	70(58.3%)	3.93
Private organizations bring timely services	77(64.2%)	23(19.2%)	5(4.2%)	13(10.8%)	2(1.7%)	1.67
Private extension services are demand driven	83(69.2)	18(15.0%)	1(0.8%)	5(4.2%)	13(10.8)	1.73
The private organizations provide me with good transport and grading services for their produce	88(73.3%)	26(21.7%)	4(3.3%)	1(0.8%)	1(0.8%)	1.34
Private extension services increase farmers income	21(17.5%)	28(23.3%)	19(15.8%)	35(29.2%)	17(14.2%)	2.99
I receive quality extension services from private organizations	69(57.5%)	30(57.5%)	0(0.00%)	9(7.5%)	12(10.0%)	1.88
private organization infrastructures and facilities are sufficient to meet the needs of farmers	57(47.5%)	46(38.3%)	5(4.2%)	12(10.0%)	0(0.00%)	1.77
Private extension services are mostly accessed with farmers who belong to a group	2(1.7%)	4(3.3%)	0(0.00%)	26(21.7%)	88(73.3%)	4.62
Private extension services favor rural-based farmers	71(59.2%)	40(33.3%)	3(2.5%)	5(4.2%)	1(0.8%)	1.54
Total mean score						2.31

Table 3: The overall attitude of farmers towards agricultural extension services provided by private organizations

Attitude categories	Frequency	percentage
Most unfavorable (1.0-1.80)	1	0.8
unfavorable (1.90-2.60)	90	75.0
Neutral (2.70-3.40)	15	12.5
Favorable (3.50-4.20)	14	11.7
Most favorable (4.30-5.0)	0	0

The data from table 3 reveal that about 11.7% of respondents had favorable attitude, 75% had unfavorable attitude, 55.8% had neutral attitude and 0.8% had most unfavorable attitude toward extension services provided by private organizations. None of the respondent showed most favorable attitude toward extension services provided by private organizations. The overall mean score is 2.31, indicating that majority of respondents were unsatisfied or unfavorably disposed with agricultural extension services provided by private organizations. The unfavorable attitude disposed by respondents can be due to the low coverage of these organizations, not all villages in the district are served. This makes many farmers in villages which are not served by private organizations not to be aware of these organizations and extension services provided. The findings conform with Sa'adatu *et al.* (2011) who analyzed maize farmers' perception on commercialization and privatization of agricultural extension services in Nigeria and revealed that about 83% of respondents had unfavorable attitude toward commercialization and privatization of agricultural services, however their awareness level toward commercialization and privatization of agricultural extension services was very high. Furthermore, Uzokwe and Ofuoku (2006) conducted a study on farmers' perception on privatization and commercialization of agricultural extension services in Oshimili North and found that 70% of respondents were not in support of privatization of agricultural extension services. Chavaj *et al.* (2003) on perception of farmers' interest groups of National Agriculture Technology about private extension services, the study revealed that 64% of respondents were not in favor of private extension services. The unfavorable attitude disposed by farmers may be due to the reasons that farmers are sometimes not satisfied with services provided by private organizations.

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Factors associated with attitude

Attitude of farmers towards agricultural extension services from private organization was regressed against a set of independent variables. The variables were tested at 95% significance level and the model fitting information's such as model fitting information (p-value), Goodness of fit and pseudo-R-Squared value. Whereby the $\text{prob} > \chi^2 = 0.000$, Goodness of fit is 1 which is greater than 0.05 indicating that the model adequately fits the data and Pseudo-R-Squared value is 0.539 (53.9%). Therefore, based on the model results it is concluded that the model results are adequately enough for this study.

From the results of ordinal regression, among of the factors that were regressed age, sex, education level, marital status, farm size, farmer income and farming experience only group membership was found to be statistically significant ($P < 0.000$) associated with attitude of farmers towards agricultural extension services from private organizations and with odds ratio of 0.002. This suggests that the odds of having positive attitude towards extension services from private organizations are 0.002 times lower when farmers have no group membership compared to farmers who have group membership. This may be due to the fact that most of private organizations prefer working with farmers who belong in a group, so in case a farmer has no group membership it is obvious that cannot access extension services. As a result, most of them expressed negative attitude towards extension services provided by private organization. Meanwhile some of them were not aware if these private organizations exist and some knew these organizations exist but they don't know the services provided and the quality of those services provided. This finding conforms with Keur *et al.* (2014) on attitude of farmers

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towards privatization of agricultural extension services, the finding revealed that positive attitude was expressed by farmers who belong to agricultural related groups only because they were the ones who mostly benefited from extension services provided by private organizations as compared to their counterparts.

Table 4. Statistical analysis of various parameter.

	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Threshold	[attitude = 1]	-31.757	3.066	107.276	1	.000	-37.767	-25.748
	[attitude = 2]	-5.160	2.609	3.911	1	.048	-10.274	-.046
Location	[attitude = 3]	-1.882	2.420	.605	1	.437	-6.625	2.860
	age	-.042	.048	.763	1	.382	-.136	.052
	householdsize	-.235	.144	2.666	1	.102	-.518	.047
	incomepermonth	8.245E-006	6.392E-006	1.664	1	.197	-4.283E-006	2.077E-005
	farmsize	.066	.137	.230	1	.632	-.203	.335
	farmingexperience	.100	.110	.819	1	.365	-.116	.315
	typeofcrop	.104	.323	.104	1	.747	-.529	.737
	[sex=0]	-.946	.708	1.783	1	.182	-2.334	.443
	[sex=1]	0a	.	.	0	.	.	.
	[educationlv=0]	-20.563	.000	.	1	.	-20.563	-20.563
	[educationlv=1]	0a	.	.	0	.	.	.
	[maritalstus=0]	-.574	.912	.396	1	.529	-2.363	1.214
	[maritalstus=1]	0a	.	.	0	.	.	.
	[groupmembership=0]	-6.146	1.226	25.135	1	.000	-8.549	-3.744
	[groupmembership=1]	0a	.	.	0	.	.	.
	[distance=1]	.445	1.668	.071	1	.789	-2.823	3.714
	[distance=2]	.080	1.672	.002	1	.962	-3.197	3.357
	[distance=3]	0a	.	.	0	.	.	.

4. CONCLUSION AND RECOMMENDATIONS

The study aimed at analyzing farmer attitude toward agricultural extension services provided by private organizations in Kibondo district. The study concludes that majority of farmers in Kibondo district are not in favor or satisfied with agricultural extension services provided by private organizations. Unfavorable attitude towards agricultural extension services provided by private organizations may be attributed due to the reason that most of these private organization have small coverage. Whereby most of farmers in study area were not aware if these organizations exist only few farmers who had contact with the providers somehow expressed favorable attitude but they are also faced with difficulties when it comes on accessing extension services. Moreover, the study further reveals that attitude of farmers is associated with group membership. Therefore, the study recommends that:

Spreading awareness to farmers about private organizations that engage in provision of extension services in the district is essential. This need to be done by the government and private organizations, in which there should be formal meeting between the government, private

organizations and smallholder farmers. The intention of the meeting should be on educating farmers concerning private organizations which provide extension services in the district. Likewise, farmers should be informed about the roles of those organizations, the services that will be offered, coverage (number of villages that will be served), mission, vision and objectives of the organization as well as the cost of the services if the organization require farmer to pay. This will raise farmers awareness about private organizations and may increase the desire of farmers to seek and access extension services from private organizations.

Fostering relationships and cooperation between public and private extension services is step one in fostering public-private collaboration. By doing so, it will be possible to fully support farmers and make use of the assets of both sectors. In contrast to the innovation, specialized knowledge, and efficiency offered by private providers, public agencies can provide supervision, quality control, and coordination.

Encouraging farmers to join in various agricultural association so as to be able to access extension services from private organizations. This might be the reason which will help farmers to have positive attitude towards those services.

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