



Reconsidering Home or Farm Visits Extension Method for Improving Impact of Agricultural Extension in Tanzania

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Martin, Respikius

Corresponding author

Department of Agricultural Extension and Community Development, College of Agriculture, Sokoine University of Agriculture, Morogoro, Tanzania.

Email rmartin@sua.ac.tz

<https://orcid.org/0000-0001-8400-927X>

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Abstract

This study examined how agricultural extension agents conduct farm or home visits. It analysed the extent to which extension agents follow the guidelines for conducting farm/home visits and the relationship between extension agent's characteristics and implementation of guidelines for conducting home/farm visits. Data for the study were collected through a survey of 69 agricultural extension agents obtained from 22 Tanzania Mainland and Zanzibar regions. Also, qualitative data were collected through in-depth interviews with key informants. In general, findings showed that home or farm visits are poorly planned which negatively affected the conduct of the visits. Furthermore, due to the high farmer extension ratio, extension agents do not always make follow-ups of their visits. A large number of farmers constrained extension agents from visiting all farmers, despite this reality farm or farm visit is still an important extension method. Nevertheless, for extension agents to be effective, they need to consider planning home or farm visits as part of the successful extension work.

Introduction

Agriculture in Tanzania employs about 58 percent of the population and contributes about 28.2 percent to the Gross Domestic Product (GDP) with the crop sub-sector contributing about 16.2 percent to the country's GDP. Despite this significant contribution, the sector is growing at a low pace averaging 5.8 percent for the crop subsector (URT, 2020). Hunger and food insecurity remain among the development challenges facing the country. Overcoming this challenge requires, among others, an increase in agricultural productivity. Agricultural extension plays a key role in raising productivity by offering technical advice, helping farmers identify problems and opportunities, sharing information, and supporting group formation (Danso-Abbeam et al., 2018).

In Tanzania, extension services have evolved towards a pluralistic system whereby many actors with diverse sources of funding are involved in the provision of these services (Jensen et al., 2019; Davis & Frantzel, 2018). Nevertheless, public sector extension still constitutes the major part of organizing and financing extension services (Davis et al., 2020). These services are offered through agricultural extension agents who employ several extension methods to disseminate information and facilitate the adoption of improved technologies. The methods used can be classified as individual methods comprising home or farm visits, office calls, telephone calls, personal letters, and emails. Group methods encompass method demonstration and result demonstration, study visits, meetings, farmer field schools, field trips, conferences, discussion meetings, and workshops and mass methods consisting of bulletins, leaflets, television, radio, newspapers/newsletters/magazines, television, exhibitions, fairs, and posters.

Although extension agents use almost all of the highlighted methods, there exists relative importance that extension agents attach to the use of these methods. Studies show that farm or home visits, which is defined as direct or face-to-face contact of the extension agent with the farmer, is a dominant extension method constituting more than 50 percent of agents' extension work (Yekinni & Afolabi, 2019). Extension agents employ home or farm visits whose objectives are to (i) get acquainted with and gain the confidence of farmers, (ii) obtain and/or give first-hand information on matters relating to farms, (iii) advise and assist farmers in solving specific problems, and teach skills, and (iv) sustain the interest of farmers (FAO, 2019). Home or farm visit is frequently used by extension agents (Yekinni & Afolabi, 2019; Mwaura et al. 2020) and preferred by farmers to other extension methods (Yekinni & Afolabi, 2019). Employing home or farm visits in extension work has many advantages. According to FAO (2019), home or farm visit helps to build rapport with farmers, help extension agents identify local leadership, and change the attitude of people. Also, home or farm visits help extension agents in teaching complex practices, enhance the effectiveness of group and mass media methods, and facilitate feedback information (FAO, 2019). Beyond the agricultural sector, home visits are promoted because they enable an extension agent to gain an appreciation of the family's home life and can respond to the needs of the family with more knowledge and greater sensitivity (Baloch, & Thapa, 2018; Maulu et al., 2021).

Generally, literature is scanty on how the home visit is conducted is lacking. This is in contrast with other extension methods such as Farmer Field School (Luther et al., 2018) and methods and results demonstrations (Pappa et al., 2018; Cooreman et al., 2018; Sutherland & Marchand, 2021), which have attracted more scholarly attention in terms of how they are conducted and what impact they have had on different contexts. This paper argues that although home or farm visit dates back to the origin of official agricultural extension and regarded as traditional extension methods, they still take so much of the extension agent's time; thus, it is imperative to understand how they are conducted to ascertain leverage points for improving their impact. This is particularly important in developing countries where other methods (notably, FFS) rely greatly on donors financing for their implementation. Thus, this study examined how agricultural extension agents practices in the conduct home/farm visits. Specifically, the study:

- (1) analysed the extent to which extension agents follow the guidelines for conducting farm/home visits;

(2) examined the relationship between the extension agent's characteristics and the extent of implementing guidelines for conducting farm/home visits.

Guideline for conducting farm/home visits

There are established guidelines, which extension agents ought to follow to conduct successful farm/home visits. These guidelines can be classified into three main stages – planning the visit, making the visit and following up after the visit (FAO, 2019). Manuals for conducting home/farm visits virtually contain similar activities/practices, which the agent must perform to achieve the desired outcome (FAO, 2019). At the planning stage, the extension agent like a teacher, must prepare for the visit by making an appointment, deciding the purpose of the visit, reviewing previous records and information, preparing the subject matter specialist that might be required and scheduling the visit into the overall work plan. Similarly, when visiting, the agent must be punctual, greet the farmer and his family, praise the farmers' work, encourage the farmer to explain and discuss any problem, provide technical or other types of required information, record the details of the visit, and plan with the farmer the time and purpose of the next meeting. After the visit, the agent is supposed to evaluate the farm/home visit, make a follow-up on issues discussed with farmers and provide feedback to farmers (FAO, 2019).

Factors influencing the performance of agricultural extension agents

Many factors influence the work performance of agricultural extension agents. These factors can be classified into internal and external factors. Internal factors are those related to agents' characteristics such as age, education, marital status, work experience and competence (Manik et al., 2020; Walangadi et al., 2021). On the other hand, external factors are those coming from outside the extension agent him/herself. Some of the external factors that influence the performance of extension agents include the availability of facilities and infrastructure needed, reward system, distance to the work area, the number of guided villages, the number of assisted farmer groups, information technology, the level of active participation of farmers, relationships in the organization and support coaching and supervision (Manik et al., 2020). This study focuses on the relationship between extension agents' characteristics and their work performance measured by the extent to which the agents adhere to the guidelines of conducting home or farm visits. Many studies on the relationship between extension agents' characteristics and their job performance have been conducted; however, the findings have been inconclusive. For example, Ekumankama and Chukwu (2021) found a positive relationship between formal education and extension agents' job performance. On the other hand, Issa et al. (2022) found the level of education is not significantly related to the level of job performance in Kaduna state, Nigeria. Furthermore, Manik et al. (2020) in Langkat District in Indonesia found age as not significantly affect extension agents' performance while Rodríguez-Cifuentes (2018) found the ages of extension agents significantly negatively affected their performance in Spain. Generally, the empirical findings suggest that the influence of extension agents' characteristics on job performance is context-specific; hence, the need for this study in Tanzania's context. Following the reviewed literature, the following conceptual framework (Figure. 1) was been developed to guide the study.

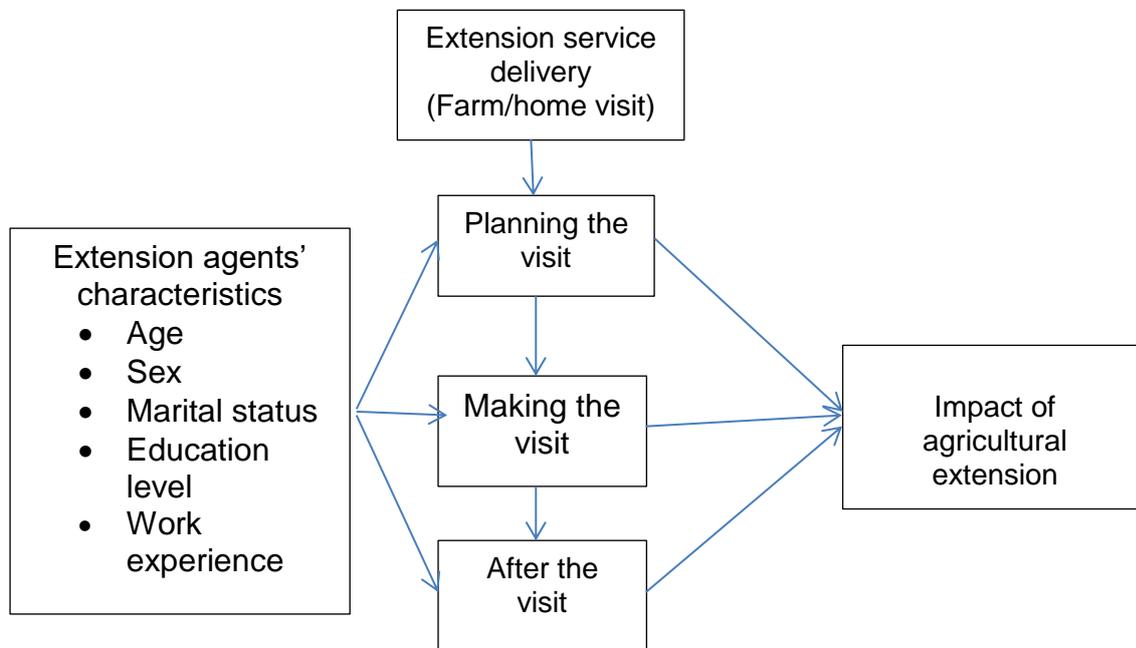


Figure 1: Conceptual framework

Methodology

This study was conducted in Tanzania (Latitude 6.3690 South and Longitude 34.888 East) where nearly 70 percent of the population live in rural areas and about 65.3 percent of households are engaged in agriculture as their main means of livelihood activity (URT, 2021). Furthermore, the National Sample Census of Agriculture for 2019/20 Agricultural year shows that of the total agriculture households, 64.9 percent were involved in crops only, 33.0 percent were engaged in crops and livestock, and 2.0 percent were involved in livestock only. The rest, which is less than one percent, were involved in fish farming and pastoralism (URT, 2021). Access to agricultural extension services by the majority of households is a challenge, which Tanzania is still grappling with. Generally, there are very few agricultural extension agents compared to the demand. By the year 2019, Tanzania had about 7,307 agricultural extension agents, 3,795 livestock extension agents and 419 fisheries extension agents. The number of extension agents is considered very low since the country has 3,956 wards, 12,319 villages and 4,263 streets or *mitaa*, which are supposed to get extension services (URT, 2019). Due to an insufficient number of extension agents, the majority of households do not receive any agricultural advice from extension agents. The recent National Sample Census of Agriculture shows that of all households that were engaged in agriculture only seven (7.0) percent received crop extension service during the 2019/20 agricultural year. As highlighted in the previous section, the government provided most of the extension advice, which accounted for more than 70 percent of

the majority of the crop-growing households while other extension service providers together accounted for less than 30 percent of the total extension services provided (URT, 2021).

This study involved agricultural extension agents who are students at the Sokoine University of Agriculture pursuing a Bachelor of Science in applied agricultural extension. This programme admits mid-career students who hold diplomas in agricultural or livestock sciences. Consequently, some of these students were working as agricultural extension agents before joining the programme. To collect data, a total of 83 names of students working as agricultural extension agents were obtained from the class representatives. A representative sample of 69 students was obtained using Yamane's formula for sample size determination (Yamane, 1967). Using stratified random sampling, the sample constituted 38 first-year students, 21 second-year students and 10 third-year students.

Afterwards, the self-administered questionnaire was distributed to the extension agents who had to respond to the questions. The questionnaire comprised both closed and open-ended questions. The Likert-type rating scale was used to assess how the three domains of farm/home visit (i.e., planning the visit, conducting the visit and making follow-up) are conducted. The scale comprised a four-point Likert-type rating ranging from never; sometimes; almost every time; and every time with scores of 1, 2, 3 and 4 assigned, respectively

Additionally, data were also collected through interviews with five (5) key informants who were selected from among the extension agents. These informants were selected based on their vast experience in agricultural extension. The coverage of interview questions included information on work experience, how home or farm visit is conducted, reasons for not adhering to some guidelines for conducting home or farm visits, challenges encountered in conducting home or farm visit and suggestions for improving the visits. Furthermore, preliminary findings were presented at the annual conference of the Tanzania Society of Agricultural Education and Extensionists of Tanzania (TSAEE) held in Dodoma from 1st to 2nd December 2021. The views were also incorporated to enrich the discussion of the quantitative findings.

For data analysis, percentages were used to summarize quantitative data. On the other hand, the constant comparative method was used to analyse qualitative data. However, selective coding was adopted in coding the data (Williams & Moser, 2019). This involved labelling of paragraphs or sentences to generate codes. Then, the codes were combined to form categories which were merged to form themes. Throughout the process, a comparison of data (responses) and codes/themes was made. Responses were compared to check if they were influenced by variables such as age, work experience, gender and access to training. With respect to codes/themes, a constant comparison was applied to check the consistency of the generated codes/themes.

Results and Discussion

Training on extension methods

Findings in Table 2 show that 30.4 and 47.8 percent were working at the village and ward levels, respectively, while a few (15.9% and 4.3 %) were working at the district and regional levels, respectively. This means that more than 75 percent of the extension agents were working in the field thus interacting directly with farmers. The majority (74.0%) of extension agents had received training on extension methods. Among those who reported to have received the training, 31.4 per cent cited farmer field school as the coverage of the training , 49.0 per cent cited both FFS and demonstrations and only about 6per cent cited home or farm visits as the coverage of the training . The findings show that unlike FFS and demonstrations, home or farm visits are not given priority in training. It is important to note that most of the extension programs, which support FFS and demonstrations, are donor-financed (van den Berg et al., 2020). On the other hand, home or farm visits are the most common individual extension methods practised by extension agents in developed and developing countries (Mojaki & Keregero, 2019). The reason for this could be that this type of extension method is perceived by extension staff as characterized by few constraints for implementation. Nevertheless, the little attention paid to offering retooling courses in-home visit could be influenced by the assumption, among providers of extension trainings, that home visit is a common extension method, which is familiar to all extension agents.

Table 2: Training on extension methods

Working place (level)	Percentage (n = 69)
Village	30.4
Ward	47.8
District	15.9
Region	4.3
Ministry	1.4
Coverage of the training	
Home or farm visit	5.9
Farmer Field School (FFS)	31.4
Demonstration (Method/results)	13.7
FFS and Demonstrations	49.0

Source: Survey data, 2021

Practices of Home or arm Visits by Extension Agents

Planning the visit

Findings in Table 3 show that less than 40 per cent of extension agents make appointments with farmers before visiting them. On the other hand, 29 per cent reported to have never made an appointment. Furthermore, the findings show that 59.4 per cent of extension agents do not decide the purpose of visiting before making farm or home visits. Also, the majority (73.9%) of extension agents do not review the records of individual farmers before making the visits. The findings show further that 46.4 per cent of extension agents do not always schedule farm or home visits into their overall work plan while only 24.6 per cent schedule every time. Besides, the findings

show that 73.9 per cent of extension agents do not prepare subject matter specialists that might be required during the visits. Generally, the findings show that more than 50 per cent of extension agents do not adhere to the guidelines for planning home/farm visits. This implies that extension agents set off their visits without being fully informed of the relevant details of the farm they are visiting. Also, because planning the visit also entails making an appointment with farmers, lack or poor planning implies that farmers are not given time to think about the issues to be discussed with the agents during the visit. Like in other places, lack or poor planning has played against the performance of extension agents (Lamane & Haliq, 2019) because planning of extension visit is the foundation of successful conduct of the visit.

Table 3: Planning home or farm visit

Statement	Response	Percentage (n = 69)
To visit farmers, I make appointments with them	Never	29.0
	Sometimes	31.9
	Almost every time	27.5
	Every time	11.6
I decide the purpose of visiting before making a home or farm visits	Never	59.4
	Sometimes	24.6
	Almost every time	14.5
	Every time	1.4
I usually review records and information before making the visits	Never	29.0
	Sometimes	44.9
	Almost every time	24.6
	Every time	1.4
I always schedule the visit into my overall work plan	Never	46.4
	Sometimes	26.1
	Almost every time	26.1
	Every time	1.4
I always prepare subject matter specialist that might be required during the visit	Never	73.9
	Sometimes	11.6
	Almost every time	14.5
	Every time	0.0

Source: Survey data, 2021

Conducting farm or home visits

Findings show that extension agents, largely, follow these guidelines on conducting farm or home visits . Findings in Table 4 show that 88.4 per cent of extension agents

are always punctual when visiting farmers. The findings show further that 95.6 and 88.4 per cent of extension agents usually greet the farmer and his family and encourage farmers to explain and discuss any problems during the visits, respectively. Also, the findings show that about 82.6 per cent provide technical or other types of information required by farmers during the visits. These findings contradict the findings of previous studies, which show that farm/home visits are poorly conducted and thus perceived by farmers as ineffective (Maake & Antwi, 2022). The reason could be that previous studies were assessing farm/home visits as a unitary concept failing to analyse how its domains are implemented. Unlike the previous studies, this study offers an empirically and theoretically grounded analysis that facilitates an understanding of how the domains of farm/home visits are performed by extension agents.

Table 4: Practices in conducting home or farm visits

Statement	Response	Percentage (n = 69)
I am always punctual when I visit my farmers	Never	0.0
	Sometimes	11.6
	Almost every time	26.1
	Every time	62.3
Before doing anything, I usually greet the farmer and his family	Never	0.0
	Sometimes	4.3
	Almost every time	27.5
	Every time	68.1
I always praise the farmers' work	Never	0.0
	Sometimes	5.8
	Almost every time	26.1
	Every time	68.1
I encourage farmers to explain and discuss any problems	Never	0.0
	Sometimes	11.6
	Almost every time	26.1
	Every time	62.3
I provide technical or other information required	Never	4.3
	Sometimes	13.0
	Almost every time	49.3
	Every time	33.3
I usually record the details after the home or farm visits	Never	0.0
	Sometimes	7.2
	Almost every time	23.2
	Every time	69.6
I plan with the farmer the time and purpose of the next meeting	Never	1.4
	Sometimes	27.5
	Almost every time	24.6
	Every time	46.4

Source: Field survey 2021

Recording and follow-up

After conducting a farm/home visit an extension agent needs to record the purpose and decisions resulting from the visit and make follow-up on the visit. The findings

show that only 29.0 per cent of the respondents follow up on the issues discussed with farmers, 13.0 per cent take an evaluation of the visit every time and 36.2 per cent provide feedback to farmers. These findings imply that recording and follow-up are not well conducted. The low rate of recording the purpose of the visit may be attributed to limited planning, which is also influenced by increased workload and lack of time. In addition, lack of feedback to farmers may suggest several things: in cases, where the extension agents must consult other agencies such as research institutions, input suppliers, or subject matter specialist, failure to provide feedback suggest that extension agents are not well connected to these agencies (Kulwijila et al., 2018). Also, the reason could be financial constraints in cases where the provision of feedback is associated with cost (Moyo & Salawu, 2018).

Table 5: Practices in recording and follow-up of farm/home visit

Statement	Response	Percentage (n = 69)
I always follow up on the issues discussed with farmers	Never	4.3
	Sometimes	20.3
	Almost every time	46.4
	Every time	29.0
After a home or farm visit evaluate the visits	Never	17.4
	Sometimes	34.8
	Almost every time	34.8
	Every time	13.0
After a home or farm visits, I bring feedback to farmers	Never	4.3
	Sometimes	29.0
	Almost every time	36.2
	Every time	30.4

Source: Survey data, 2021

Overall practices of home visit

In general, the findings in Table 6 show that the practice of farm/home visits differs across the three domains. The results show that conducting farm/home has a mean of 3.16 implying that extension agents adhere to the guidelines almost every time. Recording and follow-up of farm/home rank second with an overall mean of 2.79. On the other hand, planning home visits ranks last with an overall mean of 1.80. This implies that planning is an aspect that is done occasionally (sometimes) or never done at all. Largely, the study findings show that some domains of farm/home visit are well done, while others are not.

Table 6: Overall practices of farm/home visit

The domain of farm/home visit	Min	Max	Mean	Std. Deviation
Planning farm/home visits	1.00	3.40	1.80	0.564
Conducting farm/home visit	2.25	3.62	3.16	0.299
Recording and follow up of farm/home visit	1.67	4.00	2.79	0.475

Relationship between SES and practices of farm/home visit

Findings in Table 7 show that training and sex have a significant effect on planning and conducting extension visits, respectively. The effect of training on planning was significant ($\chi^2 = 13.688$) similarly, the effect of sex on conducting home visits was significant ($\chi^2 = 4.628$) The findings on the effects of training are in line with the finding of Mumakinah et al. (2020) that training has a significant effect on the performance of agricultural extension agents in Indonesia. Also, in Thailand, Anesukanjanakul et al., (2019) found that training is one of the personal characteristics of agricultural extension agents that have a positive and significant correlation with their performance.

Table 7: Relationship between socio-economic characteristics and domains of farm/home visit

The domain of farm/home visit	Socioeconomic characteristic	Chi square
	Sex	4.50
Planning the visit	Marital status	0.779
	Training	13.688*
Conducting the visit	Sex	4.628*
	Marital status	0.554
	Training	0.166
Recording and follow-up of the visit	Sex	3.112
	Marital status	3.817
	Training	0.693

Conclusion and Recommendation

Extension agents fairly followed the guidelines of conducting home visits and making a follow-up after the visits. However, planning the visit was not given due attention by extension agents. Training and gender affected agent performance on the use of home visits. To improve the impact of the home visit method, extension agents should pay attention to the planning aspect of a home visit. This can be achieved through offering retooling training to extension agents.

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