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Gatekeepers in Agricultural Extension Research: A Retrospective Analysis

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Abstract

Social science research plays an important role in transforming agriculture as it provides an invaluable source of information for policy formulation and implementation. Social scientists collecting data in rural communities, where the majority of agricultural production occurs, around the globe frequently pass through a layer of gatekeepers to access research communities and subjects. Gatekeepers serve a critical role in access to subjects but their influence on the research process in many countries and contexts has not been examined thoroughly. The findings of this phenomenology study, conducted in four Sub-Saharan Africa countries, indicated gatekeepers provide invaluable access to individuals and perspectives that may otherwise be inaccessible. However, the findings indicated gatekeepers may also have a vested interests in the research being conducted. Among others, gatekeepers may introduce selection bias to the research process. Therefore, it is important for social scientists working in countries where gatekeepers are involved in the research process to understand the limitations gatekeepers introduce when conducting social science research. Having such knowledge is necessary when interpreting research results and will help researchers be cognizant of the power dynamics that may exist between gatekeepers and those they represent as well as implications on the research process.

Keywords: Gatekeepers, social science research, objectivity, power structures, extension, access, research subjects

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Introduction

Social science research plays an important role in transforming agriculture as it provides an invaluable source of information for policy formulation and implementation (Glover et al., 2016). Moreover, the growing need to address societal challenges worldwide has necessitated the demand for social science research studies (Reio, 2016). Social scientists in agricultural extension have the potential to provide insights into farmers' decision-making processes as well as their knowledge and experiences; information crucial for effective agricultural development (Muzari et al., 2012). Despite the importance of the recommendations that come from social science research-based studies, the research process is sometimes questioned; specifically, questions of objectivity in data collection and analysis are areas of major concern (Davis, 2013).

Social science research occurs in social contexts where various individuals frequently have vested interests (Reiss & Sprenger 2014). Social scientists need to gain access to social contexts, such as communities, to answer their research questions. However, sometimes access to communities can be a challenge, especially when researchers are not from the social context of interest and thus have no power, control, or entry points into the research environment (Greene, 2014). Gaining access to such communities or to specific individuals requires that the researcher go through gatekeepers (Greene, 2014). Gatekeepers are individuals, stakeholders or institutions that are responsible for granting or denying access to organizations, communities or individuals (Clark, 2011). Gatekeepers have the power to limit, grant or deny researchers access to research sites or individuals based on their evaluation or perceptions of the research outcomes or objectives (McFayden & Ranki, 2016). The ability of gatekeepers to influence who and how research subjects are accessed raises questions regarding the objectivity of social science research especially in cases where gatekeepers are involved in the data collection process.

For agricultural extension research, objectivity is a major challenge. Agricultural extension research is often conducted by stakeholders and organizations that are also involved in the generation of technologies and provision of agricultural extension services aimed at promoting the technologies (Glover et al., 2016). Moreover, the extension agents who work for these agricultural extension service provision organizations, perceive themselves as promoters of improved technologies and farmers as potential adopters or experiment sites (Biggs, 1990; Masangano et al., 2017; Schut et al., 2016); making it difficult to remain objective during the research process because of their vested interests in the research outcomes.

The implementation of pluralistic demand-driven extension services in countries like Malawi has led to the presence of multiple organizations in the provision of agricultural extension services (Chowa et al., 2013; Masangano, et al., 2016). The increased presence of stakeholders and organizations in the provision of extension services has resulted in an increased presence of stakeholders and organizations working across communities. Therefore, to ensure coordination and collaboration, measures have been put in place to ensure stakeholders (including social scientists) wishing to work in these areas get permission from relevant organizations who have jurisdiction over the communities (Greene, 2014). For example, as a result of the implementation of the pluralistic demand-driven extension service delivery, the Malawi Government established committees from the district to the village level to ensure coordination in the provision of extension services (Masangano, et al., 2016). Such committees are comprised of various actors in extension service provision and are designated to serve as gatekeepers at various levels. As a result, all stakeholders (including social scientists) must go through the chairperson or village leaders before gaining access to the communities (Masangano et al., 2016).

The growing need to transform extension service provision from promotion of innovations to innovation development (Rivera & Sulaiman, 2009) calls for the need for more objectivity in social science research. Historically, the issues of access to communities, and the role of gatekeepers serving as entry points to those communities, have been associated with qualitative research methods where snowball, purposive and convenience sampling techniques have been employed (e.g. Clark, 2011; Mulhall, 2003; Peticca-Harris et al., 2016; Sixsmith et al., 2003). Gatekeepers have also been known to impact quantitative social science data collection processes, especially when collecting data in hard to access communities (Crowhurst & Kennedy-Macfoy, 2013). Gatekeepers facilitate researchers' access to participants (Clark, 2011) and despite not always directly providing the information or materials needed to answer research questions themselves, their role should not be underestimated (De Laine, 2000; Miller & Bell, 2002). However, the level of influence that gatekeepers have on the research process, and the impact the level of influence has on resulting findings is largely unexplored; especially in international agricultural extension research contexts where access to communities and research subjects may depend on the presence of gatekeepers.

Conceptual Framework

For the purposes of this study, gatekeepers are defined as individuals, groups, organizations or institutions who are responsible for providing access to, gathering, and preserving information for their communities, organizations or institutions (Agada, 1999; Klobas & McGill, 1995; Metoyer-Duran, 1993; Sturges, 2001). Access, in this case, can either be physical or social (Cassel, 1988). Clark (2011) described physical access as the ability to get in contact with research subjects while social access refers to being accepted to work with prospective research subjects. Bouhnik and Giat (2015) further described gatekeepers as, members of an organization who initiate exposure to a wide variety of external information sources in the field of their expertise or in general; who filter information, obtain information, translate information into the organizations' language, and distribute it among their colleagues with varying extent and frequency (p. 133).

Gatekeepers are, or can, serve as formal or informal institutions or representatives of groups of people (Kurtz, 1968; Reeves, 2010). In most rural communities, gatekeepers tend to comprise individuals who command respect and tend to be knowledgeable and well connected to various sources of information in the community (McAreavey & Das, 2013; McFayden & Rankin, 2016). In cases where gatekeepers are individuals, they are usually more educated and have higher incomes than the majority of the population and therefore, trusted by members of the community (Agada, 1999). Gatekeepers typically serve as opinion leaders and moderators for change within the community (Chatman, 1987). Kurtz (1968) described gatekeepers as facilitators for social change as they connect people from their communities or organizations with other people, organizations or institutions with different cultures and backgrounds. Gatekeepers serve as brokers of information and are responsible for linking the community with various resources and opportunities. However, gatekeepers' perceptions regarding the impact of research activities, as well as their understanding of the people they have influence over, influences their behavior and whether or not they will support the data collection process (Reeves, 2010).

Gatekeepers also have the power to decide or choose members of the communities that should be involved in research activities, thereby influencing the selection of research participants (Clark, 2011; Corra & Willer, 2002). Gatekeepers have also been reported to control the type and amount of data collected during the research process (Reeves, 2010). A gatekeepers'

understanding of the research process, their expectations surrounding research outcomes and its impact on their work, positions or communities may influence their actions during the research process (McFayden & Rankin, 2016). For example, gatekeepers who believe the outcomes of a research project would negatively impact their current or future roles or reputation within their organizations may end up selecting potential subjects who they believe will provide information that will not have negative implications (Singh & Wassenar, 2016). The concept of gatekeeping has often been studied relative to the role gatekeepers serve with little focus on the impact gatekeepers have on those within the community (Barzilai-Nahon, 2008). Recognizing the power gatekeepers have over the data collection process necessitates the need for examining the impact of gatekeepers on the production and dissemination of knowledge (Crowhurst & Kennedy-Macfoy, 2013).

Purpose and Research Questions

The purpose of this study was to examine the role of gatekeepers in agricultural extension research within Sub-Saharan Africa. It was guided by the following research questions: 1) Who are the gatekeepers in agricultural extension research? 2) How do the gatekeepers influence agricultural extension research? 3) What is the impact of gatekeepers on the agricultural extension research process?

Methods

In this qualitative study, a phenomenological approach was used to answer the research questions. Phenomenology “is the study of conscious phenomena: that is, an analysis of the way in which things or experiences show themselves” (Sanders, 1982, p. 354). It is aimed at unveiling human experiences (Sanders, 1982). It involves the study of conscious experiences from an individual’s point of view or experiences (Smith, 2006). Phenomenological research requires the researcher withhold their understanding and knowledge of reality during the data collection process to study the phenomenon in its current state (Kleiman, 2004).

There are different types of phenomenological studies, in this study descriptive phenomenology, which involves the study of personal experiences, was used (Padilla-Diaz, 2015). Personal experiences can either be passive or active (Smith, 2006). This study used an account of two researchers’ experiences during the time they were involved in multiple research activities in different communities and countries. Wojnar and Swanson, (2007) discussed that through phenomenology the researcher “...uses several frames of reference including: the transcendental subjectivity (neutrality and openness to the reality of others), eidetic essences (universal truths), and the live-world plane of interaction (researcher and participants must interact) (p.174).”

In the present study, the researchers followed the requirements and directives of the gatekeepers during the data collection process which sometimes included modifying the originally proposed procedures for data collection such as recruitment of participants or subjects and sampling. In addition, the researchers followed traditions and norms identified by the gatekeepers, which meant sometimes modifying procedures such as format of requests for formal participant consent. As such, this study provides the descriptions of the processes as they occurred with limited researcher interference (Flood, 2010).

The research projects that the researchers were engaged in ranged from impact evaluation to exploratory research. During the impact evaluation projects, the researchers worked directly with institutions involved in the provision of extension services. The researchers were hired to evaluate the impact of the services provided. The impact evaluation research required that the

study participants included people who had benefitted and taken part in the project, with the research design calling for the need of a random sample of those beneficiaries to avoid potential bias. For the exploratory research projects, both purposive and random samples were proposed based on the objectives of the research to ensure the results were generalizable and representative of the communities.

Each researcher collected data independently through field notes, observations and personal experiences that were recorded in reflective journals. Data was collected over a period of four years, during which two researchers were working in four sub-Saharan African countries: Malawi, Tanzania, Kenya, and Uganda. The participants for all the studies were male and female small holder subsistence farmers. The majority of the participants, especially men, had some education qualification while few of them, especially the women, had formal education. The majority of the participants did not speak English. The gatekeepers recruited all the participants by either inviting them to engage in focus groups or interviews through word of mouth. For surveys, the gatekeepers directed the researchers to the homes of the respondents and recruited the respondents that were available in their homes at the time of the visit. As such, convenience sampling was employed when sampling the participants for all the studies upon guidance from the gatekeepers. This was applied even in cases where the original study design required random sampling due to participant access.

Data were examined *ex post facto*. Each researcher analyzed the data collected from field notes and reflective journals specific to their individual gatekeeper experience. Field notes and reflective journals were used because the researchers did not visit each country to collect data on the role of gatekeepers per se; however, after the data collection processes concluded the researchers reflected on their work and discovered they shared similar gatekeeper experiences necessitating the additional critical reflection analysis. Data analysis was conducted following Colaizzi's, (1978) steps. As such peer debriefing was conducted during the first phase of the data analysis process (Wojnar & Swanson, 2007) to ensure rigor and trustworthiness.

A code book that was developed based on the results of the debriefing was used when analyzing field notes and reflective journals. The codebook included themes such as: type of research conducted, research subjects selection process, data collection methods, access to the research population, individuals or organizations that facilitated access to research populations, benefits associated with the process for gaining access, limitations associated with the process for gaining access, general observations. Using the codebook, each researcher coded the data and identified themes. The researchers then came together to identify overlapping themes which informed the findings (Morrow, 2005). The themes that addressed research questions were identified using an axial coding approach (Strauss & Corbin, 1990). Axial coding involves "a set of procedures whereby data are put back together in new ways after open coding, by making connections between categories. This is done by using a coding paradigm involving conditions, context, action/interactional strategies, and consequences" (Strauss & Corbin, 1990, p. 96).

Rigor and trustworthiness were achieved through triangulation by having two independent researchers collect and analyze the data by focusing in detail on the processes involved when collecting data in spaces where the researchers were considered outsiders (Henry, 2015; Lincoln & Guba, 1985). In addition, a third researcher unfamiliar with the data was asked to review the results and compare them with the raw data and themes as a form of peer debriefing (Lincoln & Guba, 1985). Consistent with qualitative methodology, the results are not generalizable but do provide a thorough analysis of a particular set of conceptually similar cases

and thus establish sufficient contextual descriptions whereby individuals can evaluate the transferability of the findings to other contexts (Lincoln & Guba, 1985).

Reflexivity Statement

There is always a likelihood the researchers' experience and knowledge may affect the data interpretation and analysis process. In this case, the primary researcher is an African and Malawian citizen who was working for the Ministry of Agriculture at the time of the research. Therefore, she had inside information regarding participant selection for research studies based on her experience working in Malawi that may have altered her perspective when coding data and developing themes. The secondary researcher was working on a multi-national project funded by an organization which had connections to officials and representatives from public and private organizations in Kenya, Malawi, and Uganda. Therefore, his perspectives when coding the data may be influenced by this professional context.

Results

Identifying Gatekeepers in Agricultural Extension Research

A major theme emerging during the analysis was regarding individuals or organizations that facilitated access to research populations. The results indicated public and private extension organizations, including extension agents and village leaders, frequently served as gatekeepers when researchers were accessing communities in all four countries. However, two sub themes emerged namely: *layers of gatekeepers at various levels* and *sex, education, and economic status of gatekeepers*.

Layers of Gatekeepers at Various Levels

Layers of gatekeepers were reported in each of the four countries. However, different individuals or organizations served as gatekeepers in each community or country. For example, in Tanzania the researcher had to seek permission from the principal secretary for the Ministry of Agriculture, followed by a regional agricultural extension coordinator. The regional agricultural extension coordinator represented the national and regional gatekeepers respectively. Following the approval from the regional coordinator, the researcher was then directed to village leaders who guided the researchers to different households in the village based on their experience and knowledge of the people.

In Malawi the researcher had to seek permission from the Director of Extension Services who served as a national level gatekeeper followed by a district coordinator, who served as the district level gatekeeper before resuming their research in the country. The researcher had to meet with these gatekeepers to explain the purpose of the research, proposed subjects, and the type of data that would be collected so they were granted permission to proceed with the research. However, the permission was only for the researcher to proceed and meet with the district coordinator and not the communities and research subjects directly. The district coordinator then determined which locations the researcher should visit based on their knowledge and experience working with the people in those areas. The district coordinator then contacted the extension agent for the areas that the coordinator felt were appropriate sites for the research.

At the community level, the extension agent then decided which community the researcher should visit based on their experience and interaction working with the people in those areas as well as the objective of the study. Once the community was identified by the

extension agent, they contacted village representatives who served as gatekeepers at village level. At the village level, the village leaders who were elected by community members to oversee development activities in their communities then decided and communicated with the researcher through the extension worker as to who should be included in the research or not. Once in the village, the extension worker and village leader would accompany the researcher and stay throughout the data collection process. However, there were differences from one district to another regarding the next level of gatekeepers.

In other cases, the researcher had to seek permission from a local coordinator before consulting a local development officer, who served as an extension agent for a group of villages. In some instances, the local development officer did not contact the farmers directly and instead had to go through the chairperson of the village agriculture committee who was responsible for informing the village headman who then mobilized the farmers.

An alternative experience regarding layers of gatekeepers was also noted. Specifically, in cases where the researchers had a single point of contact within each country to facilitate meetings and research while on-site. Although opaque to the researcher, the coordination of on-site visits and activities would have required the primary point of contact to work with additional gatekeepers to coordinate the research. For example, in Kenya and Uganda, focus groups and key informant interviews were conducted with farmers union representatives as well as other smallholder farmers. The scheduling and coordination of these activities were facilitated by the local primary point of contact. However, to schedule the focus groups and interviews point of contact would have needed to coordinate with the directors of the farmers' unions to recruit individuals to participate in the focus group and interviews. Therefore, the layers of gatekeepers directly experienced by the researcher was inconsistent with the total number of gatekeepers that were likely involved overall.

Sex, Education, and Economic Status of Gatekeepers

In almost all the countries, the village level gatekeepers were primarily men who were generally provided deference and respect among represented community members. Moreover, most of the gatekeepers appeared to have some level of education as they were able to speak English. Furthermore, in other countries like Tanzania the gatekeepers, who were village leaders were paid a daily allowance for accompanying the researchers during the data collection process. While in Tanzania, Uganda, Malawi and Kenya the gatekeepers were not paid as they were normally extension agents and were perceived to be doing their job. Moreover, it was also observed that in cases where the gatekeepers were extension agents, they made sure that the field visits were done within normal working hours. As such, only sites that were close and easily accessible were selected as study sites. It was also observed that in cases where a central meeting place was chosen, only locations that were close and convenient to the gatekeepers were chosen. Selection of such places required that the participants travel long distances to meeting places which appeared to be a challenge to women participants in particular. Most of the women participants raised concerns that they wanted the interviews to finish on time so that they can get back to their homes and work on other household chores. Moreover, it was also observed that the gatekeepers would specifically ask for certain participants to be involved in the study because of their ability to speak clearly and fast so that the data collection process did not last for too long.

Influence of Gatekeepers on the Research Process

Upon analysis, the presence of gatekeepers did emerge as having an effect on both qualitative and quantitative data collection. Two themes emerged: *sampling of research subjects* and the *data collection process*.

Sampling of Research Subjects

Gatekeepers influence on the sampling of research subjects in Tanzania and Malawi emerged from the analysis. For example, in Tanzania, simple random sampling was the proposed sampling technique for selecting survey respondents. However, convenience sampling was used because when the researcher asked for a list of farming households in the community to draw the sample from, the gatekeeper, who was a village leader indicated that it was not possible for them to provide the list of the community members. This was the case despite the gatekeepers providing details of the number of farming households that were in the village and also mentioning to the researcher that they had a list of names of various households. In addition, the questionnaires were designed to be administered verbally to accommodate illiterate respondents, and as such required an in-person visit to respondents in their homes. Therefore, in order to continue with the process, the researchers allowed the gatekeepers to decide the households to include in the study. For each household, the gatekeeper decided the respondents that were included from each household based on their availability at the time of the visit. This was against the plans of the researcher because the original plan was to recruit a given number of respondents from specific households depending on their gender.

In Malawi during the data collection process for qualitative research, where purposive sampling was the proposed technique for selecting respondents, convenience sampling was used instead. A convenience sample was used because the gatekeeper who was an extension agent indicated that it was not possible for the researchers to visit the respondents in their homes. Therefore, the village level gatekeeper who was the chairperson of the Village Development Committee mobilized participants to a central location. As such only respondents that were available at that time and were able to make it to the central location were included in the study.

However, in cases where convenience sampling was requested, gatekeepers were able to provide access to participants consistent with requested protocols. For example, in Uganda, Kenya, and Malawi the nature of the research required individuals that had directly worked with, or benefited from, a specific organization. Thus, a convenience sample research design was purposed. Based on the researcher's request the gatekeeper was able to arrange opportunities to engage with specific groups and individuals that met the requested criteria.

Data Collection Process

Another emergent sub theme was that gatekeepers sometimes influenced the qualitative and quantitative data collection process. However, the extent to which the gatekeepers influenced the data collection process varied depending on whether or not the gatekeepers were present throughout the data collection process. For example, in Malawi the gatekeepers, who were mainly extension agents, accompanied the researcher to the location, staying at the venue until the interviews were over. The researcher observed the respondents were mindful not to provide any negative or contrary information in the presence of the extension agent. In several cases, the respondents would seek confirmation from the gatekeepers.

A similar observation was made in Tanzania during focus groups where the village leaders invited the participants to a central location for the focus groups and were present throughout the focus groups. In these cases, the village leaders (the gatekeepers) also served as

participants in the study. However, in Malawi, where the gatekeeper left the researchers to collect the data, the respondents were comfortable sharing their negative experiences accessing extension services. Furthermore, in Tanzania during the survey administration differences were observed in respondents' responses in cases where the gatekeeper was present during the process and where the gatekeepers were absent.

Impact of Gatekeepers on Research Process

Four themes emerged regarding the influence of gatekeepers when conducting agricultural extension research: (1) *facilitating access to research subject and communities*, (2) *research subjects' right to voluntary participation*, (3) *type of data collected*, and (4) *selection bias*.

Facilitating Access to Research Subjects and Communities

Gatekeepers providing access to community members facilitating the data collection process and was identified numerous times throughout the data analysis process. Moreover, the gatekeepers emerged as assisting the researchers in being accepted and welcomed. Accessing certain communities, especially in rural areas, with someone whom the people were familiar with and respected ensured participants trusted the researchers and engaged in the research process.

In Uganda an example included a key informant interview with entrepreneurial youth that had received educational training. The group associated with the training was unique in both their experience with the organization of interest, as well their insights regarding employment opportunities for the in the county. The gatekeeper was invaluable in locating and facilitating an opportunity to engage with the group which may otherwise be inaccessible to the researcher.

Research Subjects' Right to Voluntary Participation

The presence of the gatekeepers was observed to contribute toward the inability for some of the subjects to exercise their right for voluntary participation. For example, in Tanzania even though the researcher could not understand the language, it was observed through the body languages of some of the participants during the survey administration that they were not interested in participating. However, the gatekeepers were observed pleading with participants and in some cases the researcher had to intervene so the individuals were not forced to participate.

In Malawi, during key informant interviews, one of the female participants expressed to the researcher that she was not ready for the interview. The woman indicated that she was heading to visit a sick relative and that the local gatekeeper met her on her way and persuaded her to take part in the interviews. Upon hearing this, the researcher allowed the participant to leave without completing the interview. However, the participant pleaded that the researcher not inform the gatekeeper that she refused to take part in the interview. Following this incident, the researcher had to keep information confidential because each time a participant left earlier than normal during the data collection process, the gatekeeper checked with the researcher to find out if they had finished answering all of the questions. Therefore, to ensure confidentiality, the researcher would opaquely respond that the potential participant had responded to all the necessary questions. However, this posed problems on the part of the researcher in cases where only a specified number of people were invited. To address the challenge, the researcher would concoct an excuse to have the gate keeper recruit more people so the targeted sample size was

achieved. The approach was successful in some, but not all, cases. As a result, the researchers ended up having a smaller sample size than originally planned.

Type of Data Collected

Another sub theme that emerged was that in cases where gatekeepers were present respondents seemed reluctant to provide any negative feedback or insights. For example, some participants praised the extension personnel for teaching them about modern agricultural practices; however, only when asked whether they had adopted the practices did the farmers indicate they did not because they did not believe the technology would help them. When probed to explain why they had not indicated a lack of adoption initially the farmers indicated they were afraid that if they mention they did not adopt the technologies the extension agent may lose their job as they will be considered ineffective. The participants indicated they were aware the extension workers needed their jobs to survive. They would not want to label them as being ineffective. Such incidences took place in cases where the extension workers served as gatekeepers.

Selection Bias

The gatekeepers were found to influence inclusion and exclusion of specific people from taking part in the research studies. In countries where convenience sampling was employed gatekeepers had specific individuals they believed should, and should not, be included in the study. For example, in Tanzania, the researcher had asked the gatekeeper if they could include one of the potential respondents when they were passing by their house, but the gatekeeper indicated that the potential participants was not knowledgeable enough. A similar incident was encountered in Malawi where the gatekeeper did not allow the researcher to interview a participant because they were not actively involved in agricultural extension activities in the community. Moreover, it was also observed that in all the countries where the gatekeepers were extension agents, they preferred taking the researchers to nearby communities.

Conclusion and Recommendations

It is well established that gatekeepers play an important role in preserving information for various communities and organizations (Kurtz, 1968). Across a variety of independently conducted quantitative and qualitative studies within four different Sub-Saharan African countries, the researchers found gatekeepers as being crucial in ensuring they gained access to communities in places they would not have had access otherwise, thus confirming previous research (McFayden & Ranki, 2016). Additionally, the presence of gatekeepers ensured there was coordination and collaboration among various extension service providers, especially based on the increased number of providers working in these communities.

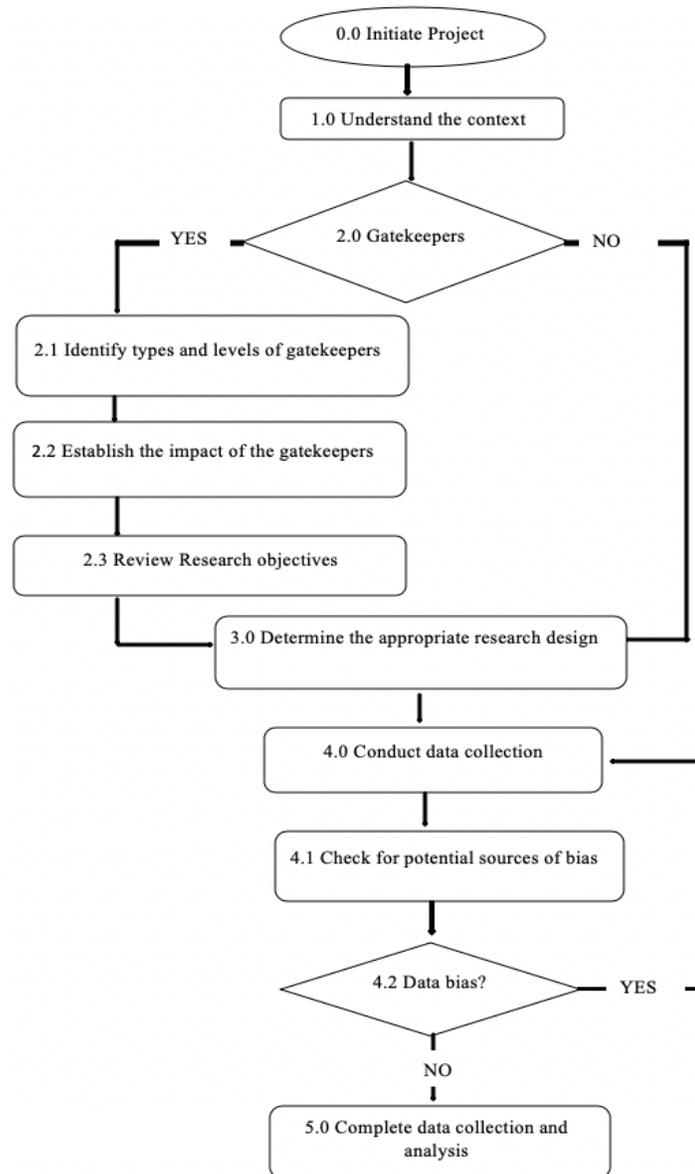
Implementation of pluralistic demand-driven extension approaches in countries like Malawi and Kenya has led to increased availability of extension service providers in the community. As such presence of community level gatekeepers ensured that the various activities implemented by stakeholders do not coincide with each other. This is consistent with results of other studies where it has been reported that most communities are overwhelmed due to the increased numbers of organizations that work with these communities (Chowa et al., 2013). Consequently, the results of the current study reinforce the important role for gatekeepers in these communities. However, the position and authority of these gatekeepers in relation to the gated is worthy of further examination.

In this study, gatekeepers were viewed as opinion leaders within their communities in most cases, which aligns with previous research findings indicating they were able to exercise some sort of authority over the gated (e.g. MacFayden & Rankin, 2016; McAreavey & Das, 2013). Therefore, having gatekeepers physically present during the data collection process where they had authority to decide or select study participants or respondents introduced potential sources of bias to the research process. The amount of power gatekeepers had, especially in selection of research subjects and during the actual data collection process, is worth exploring as it illuminates the potential for selection bias.

The tendency of the gatekeepers to persuade research subjects to take part in research even when they were not interested in doing so has the potential to diminish the research integrity due to Hawthorne effect. The Hawthorne effect refers to the “research participants’ alteration of behavior when observed” (Paradis & Sutkin, 2017, p. 32). Differences in participants’ and respondents’ responses when the gatekeepers were present or absent is an indication that the presence of the gatekeepers, especially extension agents, have potential to influence the type of data collected.

The findings of this study are consistent with other studies which have reported gatekeepers with a vested interest in a particular outcome may suffer from motivation bias (Hammersley, 2005; Hammersley & Gomm, 1997) thereby contributing to the impression that social science research is more subjective than objective. This was particularly evident when extension agents, who have vested interests, served as gatekeepers when choosing communities where research was conducted. In some cases, extension agents are evaluated based on the extent to which farmers are able to adopt technologies (Anderson & Feder, 2004), therefore, this may have motivated extension agents to only identify or approach communities or individuals who successfully adopted an improved technology (Singh & Wassenar, 2016). It is important for social scientists conducting research in agricultural extension settings aimed at evaluating the impact of extension programs review their indicators for assessing effectiveness. The results of the present study indicate that evaluating effectiveness based on the number of people who have adopted technologies, or number of technologies adopted, may contribute to motivation bias especially in cases where the responsible organizations or individuals are gatekeepers. Perhaps indicators such as the ability of the individuals to express their concerns regarding new technologies without fear or bias would be a better measure. Using such indicators may make the extension agents comfortable and allow individuals who have different views to take part in research activities.

Based on the results of the study, a model for conducting research within gatekeeper contexts is proposed (Figure 1).

Figure 1*Model for Conducting Research Within Gatekeeper Contexts*

Once a research project has been initiated, researchers need to take time to understand the research context (Figure 1; 1.0). This can be through literature reviews or consultations with people or other researchers who have worked in such contexts so that they establish whether access to those communities or research subjects will require approval of gatekeepers or not. It is important for social science researchers working in developing countries to understand the role gatekeepers play as well as the benefits and obstacles they bring to the research process (Flyvberg, 2006).

Once it has been established that gatekeeper's permission will be required to gain access (Figure 1; 2.0), the researchers should identify the types and levels of the gatekeepers and establish the potential impact that their presence might bring to the research (Figure 1; 2.1 and

2.2). Doing so will help researchers to ensure that relevant to logistics are put in place. Moreover, such an understanding will help the researchers identify potential areas for disconnect. For example, in most rural areas African women have time constraints due to many parallel responsibilities (domestically, socially, etc.). These obligations may limit their participation or deter them from participating in research activities scheduled during times or in locations that are not convenient (Hyder et al., 2005). The problem is exacerbated in areas where mobility is a problem, making it hard for people who reside in hard to reach areas to be included in research projects. Therefore, gatekeepers may want to save time and energy by taking researchers to areas which are easy to reach. In cases where gatekeepers are extension agents, the time spent in assisting the researchers is often considered outside their work routine and they may not be getting paid. As a result of time constraints gatekeepers may deliberately avoid selecting participants or respondents whom they know will take a long time to finish the specified research activities. Being considerate of a gatekeeper's needs and schedules is important and clarifying logistical expectations and issues up front can reduce miscommunication.

Once the types, levels and potential impact of the gatekeepers has been identified, the researchers need to revisit their research objectives (Figure 1; 2.3) to ensure that the presence of gatekeepers will not have any negative impacts towards achievement of the research objectives. Social researchers working within gatekeeper contexts should ensure they incorporate measures aimed at minimizing bias as a result of their presence. In cases where potential areas of conflict or bias are identified, the researchers need to revise their research objectives to ensure that achievement of the objectives will not be compromised due to the presence of the gatekeepers. Following the revision, the researchers should determine the appropriate research design (Figure 1; 3.0) for collecting the data. Researchers should choose research designs that will minimize the ability of gatekeepers to introduce bias. In addition, measures should be undertaken to minimize such bias. For example, the measures may include selection of research designs that will allow for multiple data collection from different settings and also using mixed methods research designs.

During the data collection (Figure 1; 4.0) researchers need to provide detailed clarification regarding the impact of the research findings to the gatekeepers' positions or organizations. Providing clarity will ensure the gatekeepers do not feel threatened that the research may reveal something that may jeopardize their positions or institutions. Clarity in research objectives and methodologies should also be emphasized, especially in relation to the research outcomes and implications. The researchers need to spend time educating the gatekeepers on the research and its potential impact as well as how collecting data in a particular way will assist them achieve the research objectives.

Researchers also need to emphasize to the gatekeepers that individuals selected, or identified, to participate must be provided the option to do so of their own volition. On top of this, the researchers should clearly specify to the gatekeepers that a subject's refusal in a research activity does not speak poorly of the gatekeeper but that it is their way of expressing their right and freedom to participate. This recommendation is particularly relevant in contexts where gender roles and perceptions may differ from those of the researcher. Throughout the data collection process, the researchers should look out for potential sources of bias (Figure 1; 4.1 and 4.2) and make sure that these biases are reported. In cases where, the researchers feel the biases may compromise the results, efforts should be made to replicate such studies in different settings.

During data analysis and reporting (Figure 1; 5.0) of any research conducted within the contexts of gatekeepers, researchers should provide detailed accounts of the research process as

opposed to just reporting the acceptable and standard research procedures (McAreavey & Das, 2013). The detailed accounts should include honest reporting of the data collection process as well as areas for potential bias. Provision of such details will assist the readers to understand the complexities that may exist as well as inform the application of research recommendations and conclusions.

Individuals preparing or conducting research within the context of gatekeepers should be alert to where results may be biased, or perhaps not fully representative. If nothing else, asking for assistance in reaching certain groups may yield better results as opposed to simply hoping for the best. An additional recommendation is for more purposive gatekeeper research to be conducted in the future. For example, an analysis of similarities and differences across multiple cultural contexts may help provide an even more robust framework for researchers to conduct studies in the future.

The results of the present study provided a unique set of considerations for individuals wishing to conduct, or conducting, social science research where gatekeepers are necessary to accessing an otherwise inaccessible population. Nevertheless, it is important to preemptively establish the noteworthy limitations associated with the study. First, the emergence of the study occurred *post hoc* from the original research projects. Therefore, the data collected throughout the original projects were not specifically oriented towards examining the role of gatekeepers, thus reducing the credibility and confirmability of the present results. For example, the absence of informant statements and purposive field observations makes the current study more of a quasi-secondary data analysis rather than a primary investigation (e.g. Johnston, 2017). Nevertheless, triangulation of independent experiences and the involvement of an objective third-party as part of the coding and thematic analysis process were conducted to minimize this limitation and establish more dependability in the findings (Lincoln & Guba, 1985). A second primary limitation is the limited number of projects included in the analysis. Although care was taken to try and establish a representative number of projects within different contexts and countries, it is certainly possible the consistencies observed are due to randomness and not an underlying explanation. While there is no way to control for this potential beyond observing all possible project experiences, the themes across projects indicated some level of consistency that may help to inform both practice and the need for additional research.

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