Determinants of the Quality of Delivery of Agricultural Training Programs among Farmers in Greater Giyani Municipality, South Africa
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Abstract

The study assessed specific technical factors, such as poor scheduling, lack of briefing sessions and timeous advertisement, curriculum misalignment, and lack of training packages, influence the delivery of agricultural training programs among farmers in the Great Giyani Municipality of Mopani District, Limpopo Province. A purposive sampling technique was used to select 156 farmers who were beneficiaries of the agricultural training programs. The structured questionnaires were used to collect the study data, which was analysed using the Binary Logistic model. The study indicated that these technical factors negatively impacted the delivery of quality agricultural training. Meanwhile, technical aspects such as ideal instruction using local language and commodity-tailored content positively influence the delivery of agricultural training programs. The study recommends that there should be enhanced collaborations between training providers and potential participants or beneficiaries to design tailored training programs that address specific needs.

Introduction

Training key role players within the agricultural landscape is essential for skills development. It contributes to achieving sustainable development goals such as food security and improving livelihoods through enhanced agricultural productivity (Canton, 2021). Continuous training of farmers is essential in knowledge accumulation to enhance agricultural practices, improve production, improve the

quality of agricultural products, and improve the livelihoods of those who are dependent on farming, such as farmers and their families (Olawale et al., 2020). Agricultural education holds significant importance as it provides comprehensive training in the principles and practices of agriculture, which plays a crucial role in sustainable practices and the cultivation of skilled farmers (Strousopoulos et al., 2023). The agricultural training programs were deemed impactful among farmers due to the highly associated benefits, such as accumulating knowledge and nurturing technical skills (Abdulai et al., 2019). A study by Oni et al. (2020) showed that farmers encountered many challenges in sub-Saharan Africa when it came to adopting sustainable agricultural practices, as influenced by numerous factors such as limited access or barely any access to agricultural training and educational programs.

Social programs are designed to reach beneficiaries and achieve expected objectives. In the agricultural landscape, it has been noted that their implementations improve the annual gross profit for each program participant (Soviadan et al., 2024). It has been noted that extension organizations should incorporate crucial areas discovered from the research into extension agents' curriculum activities for adequate training (Ojo et al., 2023). A study by Kofi et al. (2021) has alluded that practical agricultural training programs play a vigorous role in the advancement of expertise among farmers. However, recently, the prominence of exploring the contributing factors that hamper the efficiency of agricultural training programs has been signified (Adams et al., 2019; Owusu-Frimpong & Tuffour, 2020). A study by Kibet and Mburu (2021) also accentuated the significance of piloting a systematic assessment to determine the efficiency of agricultural training services. It is crucial to understand the role and challenges of the technical aspects of delivering agricultural training and educational programs (Gajanayake & Pfuderer, 2019). Against this backdrop, the study determined the influence of technical aspects that significantly contribute to the delivery of agricultural training programs. The study objective was to assess the technical factors influencing the delivery of agricultural training programs.

Methodology

The study was conducted in Great Giyani municipality in the Mopani District of the Limpopo Province. The Greater Giyani is situated in the north-eastern part of Limpopo Province, South Africa. It covers approximately 19.51 Km^2, with a population estimate of about 25 954 people, and its GPS coordinates are 23°18′36″S 30°42′23″E (Greater Giyani Local Municipality, 2022). The main agricultural activities in Greater Giyani are inclusive of the cultivation of crops like maize, vegetables like spinach and cabbages, and fruit trees like mangoes, and livestock farming, which includes cattle, poultry, pigs, and goats (Limpopo Department of Agriculture, 2019). The study population was farmers who had benefited from agricultural training and educational programs. The study participants were drawn from the beneficiaries of the three training programs, namely, National Rural Youth Service Corps (79), ABSA Food Security (15), and Youth in Agriculture and Rural Development (62). In Limpopo province, such programs are generally organised and facilitated by government agencies, organisations without profit, agricultural cooperatives, or those offering extension services (Nel, 2016). A purposive sampling technique was used to select 156 farmers. The study used the Rao soft sample size calculator to calculate the appropriate sample size. Purposive sampling was selected based on its predetermined criterion related to the study characteristic, like their experience in a

specific area of interest (Mweshi & Sakyi, 2020). Face-to-face interviews were held with the study participants, and structured questionnaires were administered to the participants.

The Binary Regression model was used for data analysis. The Binary Regression model determined the technical factors influencing agricultural training program delivery among beneficiaries. The model was chosen for its strength in estimating the relationship between one or more explanatory variables (Tafesse et al., 2020). The model was expressed as follows:

$$Y_i = \beta_0 + \beta_1 X_1 i + \beta_2 X_2 i \ldots + \beta_n X_m i + \mu_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (a)$$

The final mathematical expression, Y_i, was dichotomous, denoting the study's dependent variable, measured by agricultural training attendance (once-off = 0 and frequently =1). The explanatory variables used in the analysis are shown in Table 1.

Table 1: Description of explanatory variables used in the analysis.

Variable	Type of Measurement	Expected sign
Tailored Content	Yes=0; No=1	+
Integrated Content	Yes=0; No=1	+
Content Alignment	Agree=0; Neutral=1; Disagree; 2	+
Visual Aid	Yes=0; No=1	+/-
Instructing Language	Vernacular=0; English=1; Mixture=2	+
Delivery Method	In-person=0; Online=1; Hybrid=2	+
Training Venue	Conducive=0; Non-conducive=1, Ideal=2	+
Availability of Training Packages	Limited=0; Enough=1; Plenty=2	+/-
Pre-advertisement & Information Session	Yes=0; No=1; Depends=2	+
Duration of Training	Day=0; Week=1; Month=2; Unique design=3	+/-
Training Frequency	Once-off=0; Continuous=1; Frequently=2	+/-
Scheduling of Training	Poor=0; Reasonable=1; Ideal=2	+/-
Trainer's Competency	Poor=0; Average=1; Good=2	+

Source: Author's computation, 2024.

Results and Discussion

Factors Influencing the Delivery of Agricultural Training Programs

Scheduling of the training

Table 2 shows that agricultural training attendance would explain 69.2% of the variation in results, as indicated by Cox & Snell. Table 2 indicates that the scheduling of agricultural training has negatively influenced quality training delivery. Furthermore, the r=-1.183 value implies that the rolling out of training programs among the beneficiaries has been negatively affected due to the scheduling component. The study findings could be influenced by the beneficiaries' concern that

they were left out while planning such training programs. Furthermore, the results could also be significantly influenced by beneficiaries' view that the rolled-out training programs were not aligned with their seasonal and annual plan, which may not respond to their current issues. The findings imply that planning and scheduling training programs without the beneficiaries' input may render such training ineffective or poor as it may not address some pestering issues. Within seasonal agricultural production, scheduling specific training is ideal within the farming landscape. The same trend of results was noted in a study by Bourne et al. (2021), who alluded that agricultural advisory services should be delivered through a collaborative and pluralistic advisory system and include participatory needs identification among potential beneficiaries. Furthermore, the scheduling of training that falls within the unavailability of potential beneficiaries inconveniences them, leading them to miss some sessions, which will interfere with their capacitation or contribute to them losing on their farming ventures due to the clutching schedules.

Pre-Advertisement and Information Session

The study also revealed that a lack of pre-advertisement and information sessions had a negative yet significant influence on the delivery of the training programs. The coefficient value of r=-2.346 implies that their delivery is negatively impacted when training programs are offered without prior advertisement. The findings could be supplemented by the scheduling of trainings that former beneficiaries indicated to be poorly executed. The essence of prior advertisement is to attract potential participants who may be looking for specific skills and ensure that such potential trainees prepare themselves for the training and schedule their tasks effectively. Furthermore, the study reveals that the lack of hosting information sessions to acclimatise potential participants also negatively influences the delivery of training programs in such sessions may be ideal for enhancing potential participants' expectations and objectives of the program. A similar study pointed out that farmers had perceived agricultural training negatively, alluding to factors such as poor communication before training programs, training skills, and insufficient relevance that may ignite insight into the training programs beforehand (Antwi-Agyei & Stringer, 2021). The results suggest that a lack of briefing sessions could also contribute to the mismatch between potential trainees' expectations and the content delivered at the end of the day. This suggests the importance of advertising the training in advance and briefing potential participants amongst those who would have shown an interest in being trained. Furthermore, briefing sessions could be essential in assisting to avoid the duplication of attendance for the same training among the targeted groups. Efforts and policies that will promote the farmers' timely availability and accessibility of agricultural information are recommended (Oke et al., 2022).

Language of instruction

Table 2 shows that the language of instruction is one of the determinants that significantly influence the delivery of quality agricultural training programs. The positive coefficient value of r=3.613 signifies the positive influence that language used during training has on the quality of its delivery. The study results could imply that using a native language to deliver the training enhances the understanding of various training contents among the participants. The current study's findings were supported by the study of Hassan et al. (2023), which pinpointed the importance of using local language as instructing language and for training materials as it bridges the communication gap and further simplifies some concepts that the training

focuses on. Furthermore, the current findings also suggest that blending the content of the curriculum with instructing languages is essential, particularly within the sector, whereby some technological advances may have a different referral term. Moreover, the study findings pinpoint the need to conduct a preliminary study with the potential beneficiaries to identify the content delivery methods, including the ideal instructing language.

Alignment of Content

The findings also reveal a mismatch between the offered agricultural training and what beneficiaries do and plan to do. Moreover, Table 2 also indicates that, there needs to be alignment between the training curriculum and farmers' resources. The coefficient value of r=-0.200 implies that there is no desirable association between the delivery of quality agricultural training and the alignment of curriculum with the available resources. The findings suggest that although the agricultural training programs are designed for specific objectives, rolled-out training has failed to address the specific needs of the targeted group. These findings also aligned with Abdulai et al. (2019), who revealed that farmers had noted the importance of training provision. However, they were concerned about the non-alignment of the training programs for exceptional knowledge and desired benefits. This also suggests that there has been rolling out of training without the preliminary studies that would guide the design of tailored training programs. The results also suggest that offering training not aligned with farmers' plans and out of their implementation capacity renders such training ineffective and causes a loss of resources. The current study calls for tailored training that enhances farmers' skills to employ within their farming practices. The results could be influenced by poor scheduling, which targets the least ideal candidates. This leads to a mismatch of training offered and desired needs or skills that potential beneficiaries would aspire to acquire.

Commodity Tailored Content

Table 2 shows that offering specialised training positively influences the training delivery. The coefficient value of r=0.970 implies that offering specialised content enhances training delivery. Adopting the commodity knowledge approach, whereby farmers are capacitated by the value chain of the specific commodities, which is ideal for opportunity exploration, the delivery of specialised training is supplementary to the commodity approach. Specialised content training aims to enhance trainees' knowledge of a specific commodity, compared to generalised and integrated training, which covers a wide range of aspects without tapping into in-depth knowledge. The results significantly imply the importance of specialised training as it enhances mastering a specific commodity's value chain. A study that investigated the training of agricultural cooperative members found that the training methods and contents of cooperative education have improved members' willingness to adopt specific farming practices (Lei et al., 2024). Scollo noted the same notion et al. (2023), who suggested that a tailored approach to on-farm training improves farming practices, such as applying biosecurity measures for hygiene management in the professional zone.

Availability of Training Packages

The findings also indicate that the lack of training package options also disadvantages quality training delivery. Table 2 shows that failure to provide potential trainees with training packages from which they can select the most suitable option for their practices harms training delivery quality. The availability of training packages is essential in matching potential trainees with curricula ideal for their benefit and bridging the gap they may have identified. It has been noted that widespread training and skilling are essential for agricultural development, yet their provision is scanty within the sector (Beasy et al., 2023). Furthermore, the availability of training packages broadens the skill development for potential participants in that they may intentionally select packages that address their skill deficiency. The findings suggest the importance of collaborative planning between training providers and potential target groups in designing a tailored training program to enhance selected desired skills.

Table 2: Determinants of agricultural training delivery

Variable	Coeff	S.E	Wald	Exp(B)
Tailored Content	0.970	3.463	3.632	3.463***
Integrated Content	2.643	7.167	1.392	.872
Content Alignment & Resources Availability	-0.200	3.254	3.632	.148**
Visual Aid	-1.173	.872	1.258	3.002
Instructing Language	3.613	3.227	2.162	1.095***
Training Venue	2.131	.148	.313	.056
Delivery Method	3.513	1.656	.235	.063
Availability of Training Packages	-1.410	3.002	.327	3.227***
Pre-advertisement & Information Session	-2.346	4.160	1.037	.283**
Duration of Training	0.482	.056	3.165	.269
Scheduling of Training	-1.183	1.095	1.333	1.236***
Trainer's Competency	2.293	1.195	.203	3.381
Constant	-.398	1.258	.308	.283

Note: *** $P \leq 0.01$. ** $P \leq 0.05$ $X^2 = 2.849$; p=0.006; R^2= 0.692 (Cox &Snell R squared) and 0.666 (Nagelkerke R squared).

Conclusion and Recommendations

Poor scheduling, lack of briefing sessions and timeous advertisement, curriculum misalignment, and lack of training packages, negatively impacted the delivery of quality agricultural training. Meanwhile, technical aspects such as ideal instructing language and commodity tailored content positively influence the delivery of agricultural training programs. There should be enhanced collaborations between training providers and potential participants or beneficiaries to design tailored training programs that address specific needs. The study recommends that training providers

arrange pre-training meetings with potential trainees as it is critical to establish proper training approaches.

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