RELATIONSHIP BETWEEN CHARACTERISTICS OF TRAINEES AND TRAINING EFFECTIVENESS IN GOOD AGRICULTURAL PRACTICES (GAP) TRAINING*

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Abstract

Good Agricultural Practices (GAP) offers a framework for sustainable agriculture, focusing on food safety, environmental preservation, and economic sustainability. The Department of Rural Development in Myanmar has provided vocational training on GAP, which includes farming techniques aimed at improving agricultural productivity and sustainability. This study aims to understand the relationship between the characteristics of trainees and the training's outcomes. Primary data were collected through a survey of 192 trainees who participated in the GAP training between 2018-2019 and 2022-2023. Data were collected through structured questionnaires using a five-point Likert scales. Statistical analysis, including t-tests and ANOVA, was applied to determine the relationship between participant characteristics and training effectiveness. The study finds that there is a relationship between gender, age, experience and training effectiveness. However, there is no relationship between education level and training effectiveness. The study recommends that government agencies promote and support GAP training by providing targeted funding, resources, and policy frameworks that encourage inclusivity and accessibility, are actively engaged and benefit from the trainings to enhance agricultural productivity and sustainability.

Keywords: Good Agricultural Practices (GAP), training effectiveness, Yamethin Township

Introduction

Agriculture is a major source of food and income for poor and rural households living in developing countries; yet, agricultural systems are increasingly threatened by changing climate conditions that compromise their productivity and resilience. Over time, international aid has provided support to the agricultural systems of recipient countries, though the literature is not unanimous in confirming their effectiveness(Trentinaglia et al., 2023).

Agriculture is a critical sector that supports livelihoods, ensures food security, and contributes significantly to the global economy. Agriculture is central to the livelihoods of the rural poor and in the attainment of the Millennium Development Goals (MDGs). Agriculture in developing countries plays a crucial role both economically and in improving people's lives. In developing countries, the livelihood of rural and poor households largely depends on agriculture, which provides them with food, income, and employment. In some of these countries, agriculture even accounts for up to 70% of total employment, and its contribution to the overall Gross Domestic Product (GDP) is often even higher (International Labour Organization, 2021).

Good Agricultural Practices (GAP) are essential guidelines and standards aimed at ensuring safe and sustainable agricultural production. These practices cover a wide range of

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agricultural activities, from crop production and harvesting to animal husbandry and resource management. The primary goal of GAP is to produce food that is safe for consumption while minimizing the environmental impact and ensuring the welfare of agricultural workers. With the increasing demand for safe, high-quality food and the pressing need for sustainable agricultural practices, GAP have become essential. GAP encompasses a set of principles, regulations, and technical recommendations aimed at ensuring food safety, quality, and environmental sustainability in agricultural production.

According to World Bank (1986), the general economic policies pursued by developing countries have pursued have often limited the growth of agricultural production and hampered efforts to reduce rural poverty. In many cases, sector-specific pricing and tax policies have resulted in substantial discrimination against agriculture. Moreover, government interventions across all stages of production, consumption, and marketing of agricultural products and inputs have frequently led to greater inefficiencies, resulting in lower output and incomes. Consequently, farm incomes in many developing countries have stagnated, and little progress has been made in alleviating poverty.

The continuous implementation of rural development projects necessitates human resource development. Providing vocational training courses for rural residents is a significant aspect of this approach. In rural development, it is essential not only to build basic infrastructure but also to promote economic growth and human resource development. GAP is crucial as it reinforces responsible farming methods from site selection and land preparation to harvesting and handling. According to the Food and Agriculture Organization of the United Nations FAO(2022), GAP applies available knowledge to address environmental, economic, and social sustainability in on-farm and post-production processes, resulting in safe and healthy agricultural products.

Since its introduction, GAP has been implemented across various sectors, including crop cultivation, livestock farming, and aquaculture, with an emphasis on sustainable resource management and reducing chemical inputs. The Ministry of Agriculture, Livestock, and Irrigation (MOALI) has played a central role in developing GAP standards and providing training programs to educate farmers on best practices. These efforts aim to align Myanmar's agricultural practices with international standards, thereby improving market access for its agricultural exports.

In recent years, GAP initiatives have been integrated into rural development programs, particularly in areas where agriculture remains the primary source of livelihood. The Department of Rural Development, for example, has offered GAP training sessions to farmers in different regions of Myanmar, focusing on enhancing productivity, improving food safety, and promoting sustainable agricultural techniques.

In Myanmar, the Department of Rural Development has been offering vocational trainings since 2013. Between 2013 and 2023, a total of 6,515 training sessions were conducted, reaching 181,606 participants. In Yamethin, GAP training was introduced in 2018. Accordingly, this study analyzes the the relationship between the characteristics of trainees and the effectiveness of the training provided by Department of Rural Development in Yamethin Township.

Objective

This study aims to examine the relationship between characteristics of trainees and the training effectiveness.

Materials and Methods

This study used analytical method based on primary data. In Yamethin, GAP training offered in 2018-2019 and 2022-2023, a total of 255 trainees is attended. Among them, a total of 192 trainees who attended the GAP training are chosen as sample respondents by using stratified random sampling method which include 109 trainees in 2018-2019 and 83 trainees in 2022-2023.

There are 5 wards and 63 village tracts in Yamethin Township. Among them, farmers from four villages such as Tein Nyaat Kone, Nyaung Aine, Bhumma, and KaTin attended GAP training offered by Department of Rural Development, Yamethin Township. This study focuses on the good agricultural practices (GAP) trainings conducted in Yamethin, offered by the Subdivision Department of Poverty Alleviation and Vocational Support under the Department of Rural Development. In 2018-2019, a total of 150 trainees participated from Tein Nyaat Kone and Nyaung Aine villages and in 2022-2023, a total of 105 trainees participated from Bhumma, and KaTin villages. Table 1 provides details of the GAP trainings held in Yamethin in 2018-2019 and 2022-2023 fiscal year:

Table (1) GAP Trainings in Yamethin (2018-2019 & 2022-2023) Fiscal Year

No.	Location	Number of Trainees	
		Frequency	Percent
1	Tein Nyaat Kone Village	50	26.0
2	Nyaung Aine Village	33	17.2
3	Bhumma Village	62	32.3
4	KaTain Village	47	24.5
Total		192	100

Source: Survey Data (August, 2024)

Good Agricultural Practices (GAP) trainings were conducted in various villages of Yamethin in 2018-2019 and 2022-2023 fiscal years. In total, 192 trainees participated in the GAP trainings in 2018-2019 and 2022-2023 fiscal years.

Results and Findings

In Yamethin Township, there has been a consistent increase in the number of training sessions offered, demonstrating a growing demand for skill development in agricultural practices. The study surveys 192 participants who attended GAP training 2018-2019 and 2022-2023, aiming to examine the relationship between characteristics of trainees and the training effectiveness.

This section provides a description of the characteristics of the respondents including gender, age, marital status, education level, farming experience, and farm size.

Table (2) Characteristics of the Respondents

Variables	No. of Respondents	Percentage (%)
Gender		
Male	149	77.60
Female	43	22.40
Total	**192**	**100**
Age (Years)		
18-25	5	2.60
26-35	5	2.60
36-45	21	10.94
46-55	50	26.04
Above 56	111	57.81
Total	**192**	**100**
Marital Status		
Single	8	4.17
Married	184	95.83
Total	**192**	**100**
Education Level		
Primary education	70	36.46
Secondary education	82	42.71
High School	39	20.31
Graduate	1	0.52
Total	**192**	**100**
Farming Experience		
1-5 years	4	2.08
6-10 years	4	2.08
More than 10 years	184	95.83
Total	**192**	**100**
Farm Size		
1-5 acres	24	12.50
6-10 acres	73	38.02
More than 10 acres	95	49.48
Total	**192**	**100**

Source: Survey Data (2024)

As shown in Table (2), male respondents (77.60%) participate in this survey more than female respondents (22.40%). Respondents are categorized into five age groups: 18-25 years, 26-35 years, 36-45 years, 46-55 years, above 56 years. Most respondents are above 56 years (57.81%) who are followed by those between the 46 to 55 age group (26.04%). Most respondents

are marriage (95.83%). Then, most respondents are secondary education (42.71%) and among 70 respondents, (36.46%) of the respondents are primary education. All of the respondents grow grape. Their farming experiences are more than 10 years (95.83%). The farm size of respondents is more than 10 acres (49.48%) and among 73 respondents, (38.02%) of the respondents are 6 to 10 acres.

The study explores the relationship between characteristics of trainees and the training effectiveness. Table (3) presents the relationship between gender and the training effectiveness.

Table (3) Relationship between Gender and the Training Effectiveness

Description	Gender		n	Mean	Mean Differences	t	Degree of Freedom	P-value
Training Effectiveness	Male		149	4.69	-0.3592	-3.835	576	0.000***
	Female		43	4.46	-0.1127			

***,1% significant level

Source: Survey Data (2024)

The result in Table (3) reveals a statistically significant effectiveness of GAP training between two gender groups (Male, Female). The mean average for females is 4.46, and for males, it's 4.69. This indicates that males rate the training's effectiveness higher than females. The p-value is 0.000, which is highly significant at 1% significant level. Male respondents reveal a higher perceived effectiveness of the training compared to female respondents. Male farmers often have greater access to resources, such as land, equipment, and financial support, which can facilitate the application of training content and thus enhance the perceived effectiveness. Additionally, traditional gender roles in many agricultural communities' place men in more direct, hands-on farming positions, while women may handle household responsibilities, potentially limiting the relevance of the training content to their daily roles. This result is consistent with the study of Meinzen-Dick et al. (2014).

The study explores the relationship between age and the training effectiveness. Table (4) presents the relationship between age and the training effectiveness.

Table (4) Relationship between Age and the Training Effectiveness

Description	Age	Mean	Sum of Square	Degree of Freedom	Mean Square	F value	Sig
Training Effectiveness	18-25	3.99	3.632	4	0.908	10.66	0.000***
	26-35	4.33					
	36-45	4.51					
	46-55	4.62					
	Above 56	4.72					

***,1% significant level

Source: Survey Data (2024)

Table (4) displays the result of ANOVA examining the relationship between age and training effectiveness. The analysis indicates that the differences in age and across five age groups are statistically significant at the 1% level. The result indicates that age has a statistically significant impact on how participants perceive the effectiveness of the GAP training. Above 56 respondents reveal a higher perceived effectiveness of the training. This is because the old – age farmers (above 56 respondents) have more farming experiences and knowledge than others age range that apply to the GAP training. This result is similar with Kariyasa and Dewi (2011).

The study explores the relationship between experience and the training effectiveness. Table (5) presents the relationship between experience and the training effectiveness.

Table (5) Relationship between Experience and the Training Effectiveness

Description	Experience	Mean	Sum of Square	Degree of Freedom	Mean Square	F value	Sig
Training Effectiveness	1-5	4.00	2.499	2	1.249	13.84	0.000***
	6-10	4.20					
	Above 10	4.67					

***,1% significant level

Source: Survey Data (2024)

Table (5) presents the result of ANOVA examining the relationship between experience and training effectiveness. The p-value (0.000), which is extremely significant, indicating that the differences in effectiveness across experience groups are highly statistically significant. The result that experiences has a significant impact on the perceived effectiveness of GAP training. The almost 95% of respondents have farming experiences above 10 years. This is because more experience farmers (above 10 years respondents) have more perceived effectiveness of GAP training. This result confirms the study of Liao (2020).

The study explores the relationship between education and the training effectiveness. Table (6) presents the relationship between education and the training effectiveness.

Table (6) Relationship between Education and the Training Effectiveness

Description	Education	Mean	Sum of Square	Degree of Freedom	Mean Square	F value	Sig
Training Effectiveness	Primary	4.69	0.31	3	0.103	1.009	0.39
	Secondary	4.63					
	High School	4.59					
	Graduate	4.82					

Source: Survey Data (2024)

Table (6) presents the result of ANOVA examining the relationship between education and training effectiveness. The analysis indicates that p-value (0.39), which is not statistically significance. This result indicates that the training is designed and delivered in a way that is equally accessible and understandable to participants, regardless of their educational background. Additionally, since agriculture relies heavily on experiential learning and practical application,

formal education may play a less critical role in framing the perceived value of training in this context.

Discussion

Based on the findings of the study, given that older participants tend to perceive the training as more effective, it is recommended that GAP trainings be tailored to different age groups. Specifically, younger participants, who expressed concerns about the environmental impacts of GAP practices, would benefit from additional content that emphasizes sustainable agricultural methods and ecological considerations. Customized modules could ensure that the training remains relevant to diverse age demographics and addresses varying concerns. The study's findings suggest that males rated the training's effectiveness higher than females, with a statistically significant difference between genders. To bridge this gap, it is advisable to develop gender-sensitive approaches within the GAP training framework. This could include designing programs that address the unique challenges women face in agriculture, offering more inclusive learning environments, and ensuring that training materials and examples are relatable to both male and female participants.

Since participants with greater farming experience rated the training more positively, it is recommended to introduce advanced GAP training modules aimed at experienced farmers. These modules could help into complex agricultural techniques and innovations, ensuring that more experienced farmers continue to find value in the training. Advanced sessions could also serve to reinforce long-term engagement and enhance the relevance of GAP training for seasoned farmers. The study indicates high levels of satisfaction with the training environment and its practical applications. To build on this success, future GAP training should maintain and enhance the focus on practical, hands-on learning experiences. Incorporating more field demonstrations and real-life case studies could further strengthen participants' ability to apply learned techniques to their farming practices.

Conclusion

A statistically significant difference was found between gender and training effectiveness. The mean average for females and males is 4.46 and 4.69 respectively. This indicates that males rate the training's effectiveness higher than females. The p-value is 0.000, which is highly significant at 1% significant level. Male respondents reveal a higher perceived effectiveness of the training compared to female respondents. Male farmers often have greater access to resources, such as land, equipment, and financial support, which can facilitate the application of training content and thus enhance the perceived effectiveness. The study found a significant relationship between age and training effectiveness. The highly significant p-value (0.000) suggest that as age increases, participants tend to perceive the training as more effective. Above 56 respondents reveal a higher perceived effectiveness of the training. This is because the old – age farmers (above 56 respondents) have more farming experiences and knowledge than others age range that apply to the GAP training.

A strong, statistically significant relationship was observed between experience and training effectiveness. The p-value of (0.000) indicate that participants with more farming

experience rated the training as more effective. The almost 95% of respondents have farming experiences above 10 years. This study found that the almost 95% of respondents have farming experiences above 10 years. This is because more experience farmers (above 10 years respondents) have more perceived effectiveness of GAP training.

However, this study found that the relationship between education level and training effectiveness are not statistically significant. This result indicates that the training is designed and delivered in a way that is equally accessible and understandable to participants, regardless of their educational background. Additionally, since agriculture relies heavily on experiential learning and practical application, formal education may play a less critical role in framing the perceived value of training in this context.

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