

**YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF MANAGEMENT STUDIES
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**FARMERS ATTITUDES AND INTENTIONS TOWARDS
USING ORGANIC FERTILIZER**

**THEIN WIN
EMBA II – 81
EMBA 18th BATCH**

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ACADEMIC YEAR (2019-2022)

Supervised By:

Dr. Hla Hla Mon
Professor
Department of Management Studies
Yangon University of Economics

Submitted By:

Thein Win
EMBA II - 81
EMBA18thBatch
2019 – 2021

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A thesis submitted to the Board of Examiners in partial fulfillment of the requirements for the degree of Master of Business Administration (MBA)

Supervised By:

Submitted By:

Dr. Hla Hla Mon
Professor
Depart of Management Studies
Yangon University of Economics

Thein Win
EMBA II - 81
EMBA18thBatch
2019 – 2021

ACCEPTANCE

This is to certify that the thesis entitled “**Farmers Attitudes and Intentions Towards Using Organic Fertilizer**” has been accepted by the Examination Board for awarding Master of Business Administration (MBA) degree.

Board of Examiners

(Chairman)

Dr. Tin Tin Htwe

Rector

Yangon University of Economics

(Supervisor)

(Examiner)

(Examiner)

(Examiner)

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ABSTRACT

This study aims to examine the effect of antecedent factors on behavior of using organic fertilizer and to analyze the effect of using organic fertilizer on intention to reuse organic fertilizer. Respondents are selected by using simple random sampling method. Primary data are collected from 103 farmers out of 520 farmers using organic fertilizer from Taungyi and Hopone township with structured questionnaire. Secondary data are collected from previous research paper, related text books and websites. Descriptive method, Linear and multiple regression are used to analyze the data. According to survey data, among the four antecedent factors, attitudes towards using organic fertilizer and perceived behavior control have positively significant effect on behavior of using organic fertilizer. It indicates that both attitudes towards using organic fertilizer and perceived behavior control are vital components of using organic fertilizer. Based on the results, the behavior of using organic fertilizer has a significant effect on the intention to reuse organic fertilizer. Based on the findings, most of the farmers agree the benefit of using organic fertilizer. Therefore, farmers should reuse the organic fertilizer to prevent and maintain the environment and the quality of their products.

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Thein Win

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LIST OF ABBREVIATIONS

| Figure | Description |
|---------------|---|
| FYM | Farmyard Manure |
| IFOAM | International Federation for Organic Agriculture Movements |
| MFVPA | Myanmar Fruits and Vegetable Producers Association |
| MgO | Magnesium oxide |
| MOAG | Myanmar Organic Agriculture Group |
| MOAI | Ministry of Agriculture and Irrigation |
| NAT | Norms Activation Theory |
| NPK | Nitrogen Phosphorus Potassium |
| TPB | Theory of Planned Behavior |

CHAPTER 1

INTRODUCTION

People are becoming more aware of the health risks associated with consuming conventional foods and see organic foods as being more nutrient-dense, all-natural, and ecologically friendly than non-organic or conventional foods. Moreover, they go beyond the health association of the food like the misuse of the pesticides, environmental impact, and animal welfare, improvement of farmer health and safety conditions. And the term 'organic' is becoming popular around the world. Organic farming practices may reduce pollution, conserve water, reduce soil erosion, increase soil fertility, and use less energy. The objective of organic foods and farming is to integrate cultural, biological, and mechanical practices that foster resource cycling, promote ecological balance, and conserve biodiversity (Chan, 2018).

When someone has an attitude, it means that they either think favorably or negatively about a particular conduct. It entails taking behavior's effects into account. The attitude is a gene that learns to act favorably or unfavorably toward an object that is provided. An attitude refers to a set of emotions, beliefs, and behaviors toward a particular object, person, thing, product, brand, service, price, package, advertisement, promotional media, or the store selling the product or event. Attitudes are often the result of experience or upbringing, and they can have a powerful influence over behavior. The farmers are aware of the issues with non-organic agricultural practices that are hurting the fertility of their land and the health of their animals. As a result, farmers have begun to engage in organic farming (Wernick & Lockeretz, 1977). The health is put at risk by the indiscriminate use of a massive amount of non-organic fertilizers with the aim of increasing productivity. Organic agriculture is a sort of alternative farming that may meet the demands of greater food production while also offering security against any potential health issues (Rajib et al. 2013, as cited in Yasmin et al.,2019). It can be difficult to identify the factors that affect attitudes and intentions toward using organic fertilizer.

The idea of planned behaviors was used in this study to identify the variables that affect farmers. Attitudes towards using organic fertilizer, subjective norms towards using organic fertilizer, perceived behavioral control towards using organic fertilizer and environmental concerning factors are four causative factors. A farmer who has a positive attitude about using organic fertilizer will aim to engage in that behavior, according to the concept of attitudes towards using organic fertilizer. When someone believes that they

agree with a certain activity, they are said to be confirming the actions of a significant individual or group that is shared by everybody. Subjective norms are established by perceived peer pressure to behave in a particular way. These standards represent the normative expectations and views that this person is subject to from significant groups or referents (Ajzen, 1991). The expectation that one has over the performance of a behavior is known as perceived behavior control. It relates to how strongly someone feels they can do a task.

Environment plays an important role in healthy living and the existence of life on planet earth. Earth is a home for different living species and we all are dependent on the environment for food, air, water, and other needs. Therefore, it is important for every individual to save and protect our environment. There are different types of human activities which are directly attributed to the environmental disasters, which include- acid rain, acidification of oceans, change in the climate, deforestation, depletion of an ozone layer, disposal of hazardous wastes, global warming, overpopulation, pollution, etc. Insight of this, excessive use of non-organic fertilizers has resulted in soil, air, and water pollution through nutrient leaching, destruction of soil physical characteristics, accumulation of toxic chemicals in water bodies, and other processes, as well as serious environmental issues and biodiversity loss.

Organic agriculture is defined as “a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved” (IFOAM,2000). The International Federation for Organic Agriculture Movement’s (IFOAM) definition of organic agriculture is based on: the principle of health; the principle of ecology; the principle of fairness and the principle of care. Organic farming is one of the sustainable agricultural systems and relies less on expensive imports such as non-organic fertilizers and pesticides (Ramesh et al., 2005). Scofield (1986) emphasized that organic farming does not simply refer to the use of living materials, but stresses on the concept of wholeness, implying the systematic connection or co-ordination of parts in one whole. The aim of organic farming is to create integrated, humane, environmentally and economically sustainable production systems, which maximize reliance on farm-derived renewable resources and the management of ecological and biological processes and interactions, so as to provide acceptable levels of crop, livestock and human nutrition,

protection from pests and disease, and an appropriate return to the human and other resources (Lampkin, 1994) .The understanding of the factors that drive the farmers towards organic farming and those that stand as barriers in adoption of organic farming is important.

Natural plant and animal ingredients, mined rock minerals, manure, guano, dried and powdered blood, ground bone, crushed shells, finely ground fish, phosphate rock, and wood are used in production of organic fertilizer. A new farming method known as organic agriculture, sustainable agriculture, or ecological agriculture has emerged in the modern era to lessen and eliminate the negative effects of non-organic fertilizers on human health and the environment. Compared to non-organic fertilizers, organic fertilizers are generally more affordable and readily available from local products. Fertility of the soil is based on organic matter. Organic fertilizer employs a preventative strategy as opposed to responding to issues as they arise. Now there are more serious issues as a result of non-organic fertilizer. The earth is facing major problems due to the increase in polluted waterways, poisoned fauna, and depleted soils (Bush & Mark, 2003). It's going to be explained to the farmers what organic fertilizer is and whether they have ever used it, plan to use it in the future, or aim to reuse it. In this study, farmers' perspectives on attitudes, subjective norms, perceived behavior control, and environmental concerns related to the use of organic fertilizer are analyzed. Not only that, until recently, people in Myanmar knew little about the potential health risks from ingesting harmful pesticides and herbicides, but times are changing and vegetable customers in Myanmar are increasingly connected and informed. As they become aware, there is more demand for locally-grown, chemical-less (or when it's available, chemical-free) produce.

1.1 Rationale of the Study

Since organic fertilizer helps to increase soil fertility, it is a crucial component of agricultural sustainability. In addition to improving soil structure, texture, and aeration, organic fertilizers also enhance the soil's capacity to hold water and encourage the growth of healthy roots. While being safer for the soil and people's health than non-organic fertilizers, organic fertilizers are just as effective. It is important to realize that organic fertilizers do not directly feed plants. The soil's bacteria are fed by the organic fertilizers, and when they are well-fed, they produce nutrient-like carbon, nitrogen, oxygen, hydrogen, phosphorus, potassium, trace elements, vitamins and amino acids and make

them available for plant in right form for their growth and health. Bacteria and fungi are the major decomposer on earth and crucial component for composing and humus formation. The longer the soil is treated with organic fertilizers, the better its texture and composition would be since organic fertilizers continue to improve the soil even after the plants have absorbed the nutrients they need. Stuff grown organically is healthier for consumption than produce farmed commercially.

Because non-organic fertilizers and pesticides are often not used in organic farming, the pesticide levels in organic fruits, vegetables, and grains are far lower. The majority of consumers think that food grown using organic fertilizer is more environmentally friendly, healthy, and safe than food grown with non-organic fertilizer. The global market for organic food items is expanding. Consumers frequently purchase them primarily for reasons related to their health. The use of organic fertilizers might very well then, when viewed from an environmental angle, reverse soil degradation, increase soil fertility, preserve biodiversity and the ecosystem, reduce soil, water, and air pollution, and enable reasonably high crop yields that might, in the long run, be able to meet population needs for food. In terms of economics, using organic fertilizers will lower the cost of importing the enormous amounts of non-organic fertilizers, enhance crop quality, and allow crops to meet international standards. It can be difficult to identify the factors that affect attitudes toward using organic fertilizer and intentions toward organic fertilizer. Consequently, I chose the title "Farmers attitudes and intentions towards utilizing organic fertilizer" for the study paper. Therefore, the study focuses on the attitudes and intentions of farmers toward using organic fertilizer. Additionally, it was discovered that farmers in Taunggy and Hopone townships primarily use organic fertilizer that is conveniently accessible from their villages when planting crops in these townships, hence these townships were chosen as study locations.

1.2 Objectives of the Study

The main objectives of the study are:

- 1) To examine the effect of antecedent factors on behavior of using organic fertilizer and
- 2) To analyze the effect of using organic fertilizer on intention to reuse organic fertilizer

1.3 Scope and Method of the Study

This study focuses the variables that affect farmers' use of organic fertilizer. In this study, descriptive and analytical research method are applied. Primary and secondary data are also used. Primary data are collected from 103 farmers out of 520 farmers using organic fertilizer from Taungyi and Hopone township. Sample population is calculated by using Roasoft formula. Respondents are selected by using simple random sampling method. Secondary data are collected from previous research paper, related text books and websites. Farmers who used organic fertilizer were interviewed in person and a structured questionnaire was used to get the data. The data was gathered between June and July 2022.

1.4 Organization of the Study

There are five distinct chapters in this work. Chapter 1 includes a study's introduction, rationale of the study, objectives of the study, scope and method of the study and organization of the study. The theory of panned behavior on farmers' attitudes and intentions toward organic fertilizer are presented in Chapter 2. The background of using organic fertilizer in Myanmar, the production and use of organic fertilizer in Myanmar, and the profiles of respondents make up the third chapter. In Chapter 4, the effect of antecedent factors on using organic fertilizer and the effect of using organic fertilizer on intention to reuse organic fertilizer are analyzed. The conclusion in Chapter 5 is described by the findings and discussions, as well as the suggestions and recommendations and needs for further research.

CHAPTER 2

THEORETICAL BACKGROUND

The theoretical underpinning of the elements influencing farmers' attitudes and intentions about using organic fertilizer is presented in this chapter. Additionally, it gives background information and the study's conceptual framework.

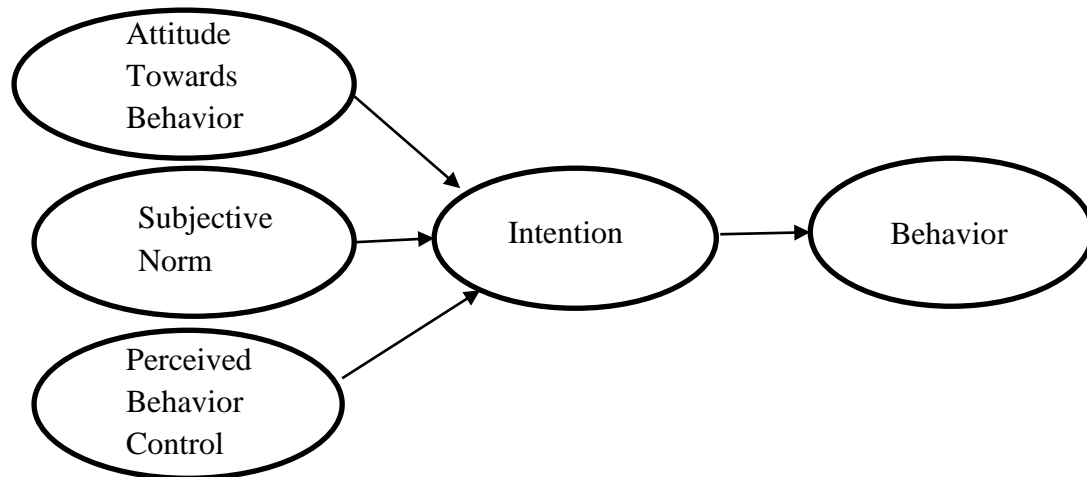
2.1 The Theory of Planned Behavior

In order to address activities over which people have imperfect volitional control, the theory of planned behavior is an extension of the theory of reasoned action (Fishbein & Ajzen, 1975, as cited in Ajzen, 1991). The theory is shown as a structural diagram in Figure (2.1). The individual's purpose to carry out a specific conduct is a key element in the idea of planned behavior, just like it was in the original theory of reasoned action. The motivational variables that drive an action are thought to be captured by intentions, which also serve as indicators of how much of an effort someone is willing to put forth. As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance. It should be clear, however, that a behavioral intention can find expression in behavior only if the behavior in question is under volitional control, i.e. if the person can decide at will to perform or not perform the behavior. Although some behaviors may in fact meet this requirement quite well, the performance of most depends at least to some degree on such motivational factors as availability of requisite opportunities and resources such as time, money, skills, cooperation of others (Ajzen, 1991). Collectively, these factors represent people's actual control over the behavior. To the extent that a person has the required opportunities and resources, and intends to perform the behavior, he or she should succeed in doing so.

The notion that ability (behavioral control) and motivation (intention) work together to influence behavior is not at all new. Typically, it is assumed that skill and motivation work together to influence behavioral success. As a result, performance should be influenced by intentions to the extent that one has behavioral control and should rise with behavioral control to the extent that one is motivated to try. The significance of actual behavioral control is obvious: a person's access to resources and opportunity will inevitably have an impact on the likelihood of behavioral success. The illusion of behavioral control and its effects on intentions and behaviors, however, are of

greater psychological interest than real control. The theory of planned conduct places a lot of importance on perceived behavioral control.

Figure (2.1) The Theory of Planned Behavior



Source: Ajzen (1991)

The theory of planned behavior integrates the idea of perceived behavioral control or self-efficacy belief into a broader framework of the relationships between beliefs, attitudes, intentions, and behavior. According to the idea of planned behavior, behavioral intention and perceived behavioral control can both be used to predict behavior success. This theory can be supported by at least two arguments.

First, assuming no change in purpose, perceived behavioral control is likely to result in an increase in the effort required to carry out a course of conduct successfully. For instance, even if two people have the same amount of motivation to learn how to ski, the person who is confident in his capacity to succeed in this endeavor is more likely to persevere than the person who has doubts.

The second justification for anticipating a direct relationship between perceived behavioral control and behavioral success is the fact that measures of actual control are frequently replaced by measures of perceived behavioral control. Obviously, the reliability of the perceptions will determine whether a measure of perceived behavioral control may take the place of a measure of actual control. When a person has minimal knowledge about the behavior, when the requirements or resources available have changed, or when new and unexpected elements have joined the environment, perceived behavioral control could not be very realistic. A measure of perceived behavioral control

may not significantly improve the precision of behavioral prediction in those circumstances. However, to the degree that perceived control is practical, it can be utilized to forecast the likelihood that a behavioral attempt would be successful (Ajzen, 1985). The execution of a behavior is a joint function of intentions and perceived behavioral control, claims the theory of planned behavior. Several requirements must be met for a prediction to be correct.

The accuracy of perceived behavioral control is a prerequisite for predictive validity. As it was previously mentioned, behavior prediction from perceived behavioral control should become more accurate the more accurately perceived behavioral control is thought to represent actual control. It is anticipated that the relative weight given to intentions and perceived behavioral control in predicting conduct will change depending on the circumstance and the type of behavior.

According to the theory of reasoned action, intentions alone should be adequate to predict conduct when the behavior circumstance gives a person entire control over behavioral performance. As volitional control over the action decreases, the addition of perceived behavioral control should become more and more beneficial. Both intents and perceptions of behavioral control can significantly influence behavior prediction, although depending on the situation, one or the other may be more crucial. In other cases, just one predictor may even be required. The expectancy-value model of attitudes proposed by Fishbein and Ajzen (1975) is a good example of this strategy.

This paradigm proposes that attitudes can be explained by people's views regarding the attitude's target. Typically, it forms perceptions about an object by connecting it to specific properties, such as other things, traits, or occurrences. When it comes to attitudes about a behavior, each belief connects the action to either a specific result or another characteristic, such as the expense involved in engaging in the action. Since the characteristics that are connected to the conduct are already rated favorably or negatively, it acquires an attitude toward the behavior automatically and instantaneously. In this way, it learns to favor actions it thinks will primarily result in desirable outcomes, and we develop negative attitudes toward actions it thinks will mostly result in undesirable outcomes. In particular, the subjective value of the outcome, or the subjective probability that the activity will result in the desired consequence, influences the attitude in direct proportion to the degree of the conviction. By eliciting key beliefs about the attitude object and evaluating the subjective probabilities and values attached to the various beliefs, it can investigate the informational basis of an attitude.

Second, whether that pressure originates from society at large or one's immediate surroundings, the subjective norm reflects the perceived social pressure that an individual feels to behave in a particular way. The individual's normative ideas, or the behavior they believe is most suitable given their social environment, serve as the foundation for this standard. The strength of an individual's normative notions as well as their desire or readiness to do so will determine the significance of the global subjective standard in predicting their intention toward a conduct.

The last idea is perceived behavioral control, which refers to a person's perception of how simple or challenging a behavior will be for them to engage in. The individual's beliefs regarding the existence of internal or external factors that facilitate or hinder the adoption of behavior are reflected in how precisely they perceive behavioral control. Perceived behavioral control refers to the degree to which a person believes that he or she can perform a given behavior. Perceived behavioral control involves the perception of the individual's own ability to perform the behavior. In other words, perceived behavioral control is behavior- or goal-specific.

To explain behaviors like the adoption of sustainable agriculture techniques, researchers have employed the value-belief-norms theory, the behavioral change model, or the diffusion of innovation model. Both internal and external factors, including task-specific requests and action, have been used to explain behaviors like the adoption of certain routines. Internal aspects include perceived capacity and willpower. The theory of planned behavior (TPB) and the norms activation theory will serve as the theoretical cornerstones for this model (NAT).

2.2 Antecedent Factors of Using Organic Fertilizer

Farmers' intentions are influenced by independent elements such attitudes, subjective norms, perceived behavior control, and environmental considerations like biodiversity preservation, soil erosion control, and retentive capacities. Farmers' intentions and actual usage patterns are related. It can be difficult to identify the elements that affect attitudes and intentions toward using organic fertilizer. The idea of planned behaviors was used in this study to identify the variables that affect farmers. There are four causes: attitudes toward agricultural conduct, subjective norms toward agricultural activity, perceived behavioral control toward agricultural behavior, and environmental concerns. A farmer who has a positive attitude toward agricultural activities might

attempt to engage in such actions, according to the theory behind attitudes toward agricultural behaviors.

(a) Attitudes towards Using Organic Fertilizer

A farmer who has a positive attitude about using organic fertilizer will aim to engage in that behavior, according to the concept of attitudes toward using organic fertilizer. According to Borges et al. (2016), attitudes made farmers more likely to employ modified natural grassland. In a similar attitude, Lalani et al. (2016) discovered that farmers' perceptions of utilizing conservation agriculture produce results with a significantly reduced negative environmental impact. Additionally, numerous research papers have supported farmers' attitudes toward particular activities through a variety of case studies written by Van et al. (2016), which demonstrated the benefits of utilizing organic fertilizer.

(b) Subjective Norms towards Using Organic Fertilizer

According to Eagly et al. (1993), perform a behavior with a farmer's motive to create the initial moments of an important person, such as family, friends, or significant others, and subjective norm (Yangui et al., 2013). Instead, if the important people in their lives believe organic fertilizer is safe, farmers will be more likely to use it. Because organic fertilizers are thought to be healthier and more environmentally friendly than non-organic fertilizers, farmers' intentions to use organic will rise when significant people's intentions rise around them (Chong, 2013).

(c) Perceived Behavior Control towards Using Organic Fertilizer

The ability of a farmer to conduct a behavior that they are capable of directing with intention toward farming activity is assessed using perceived behavior control using organic fertilizer. The perception of a farmer's ability to control their conduct has recently been the subject of numerous research investigations. Lalani et al. (2016) discovered that this perception had an impact on farmers' behavior in conservation agriculture. Furthermore, it was established by Borges et al. (2016) that the perception of control over farmer conduct has an impact on that behavior. In contrast, (Sok et al., 2016) discovered that farmers' behavior in designing voluntary bluetongue vaccination schemes was not significantly influenced by their perception of behavioral control.

(d) Environmental Concerning Factors

Environmentally conscious elements that explain how farmers behave generally with regard to issues like the environment, soil, water, and air have produced a wide

range of classifications (Alizadeh., 2016). Organic farming, also known as conservation of biodiversity, is an ecological production management system based on the minimal use of off-farm inputs and on management practices that restore, maintain, and enhance ecological harmony. It promotes and enhances biodiversity, bio-geochemical cycles, and soil biological activity (IFOAM, 2000). It is a farming method that is kind to the environment (Loreau., 2010). Even though the process is extremely complex, it is now widely acknowledged in ecology that there is a general beneficial association between diversity and stability. It is also clear from the diversity of creators that organic farming is preferable to conventional agricultural systems since it has a greater positive impact (Fuller., 2005).

In order to stop soil from degrading and from being abused by inputs, soil degradation control refers to the promotion of a healthy soil-plant-environment system. The modification of current agricultural practices in the area of soil nutrient restoration in order to increase the use of organic materials, known as organic farming, is a novel technique for encouraging environmentally friendly farming. Improved soil fertility, organic matter content, and biological activity, better soil structure and decreased susceptibility to erosion, decreased pollution from nutrient leaching and pesticides, improved plant and animal diversity, and more environmentally friendly farming practices are all potential benefits of organic production (Kasperczyk & Knickel, 2006). Enhancing soil quality and agriculture's long-term sustainability are both achieved by increasing soil organic matter through organic farming. Retentive abilities are defined as well-managed organic agriculture that employs a variety of preventive strategies to significantly lower the danger of severe yield fluctuations caused by climatic and other uncontrollable incidents, hence enhancing the food supply's resilience. Organic agriculture is an excellent way to restore environmental services because of its agro-ecological strategy. By forgoing the use of polluting materials like non-organic fertilizers and synthetic pesticides, organic agriculture prevents many harmful environmental effects. It also lessens the effects of human activity on desertification, biodiversity erosion, and climate change. In order to maintain and feed the soil, organic farmers use trees, bushes, and leguminous plants. They also use dung and compost to offer nutrients, as well as terracing. This helps to prevent compaction, nutrient loss, and erosion.

2.3 Behavior of Using Organic Fertilizer

Farms had become aware of the risks associated with using non-organic fertilizers more frequently since these practices were harming the environment, destroying the structure of the soil, and placing an increased financial burden on farmers. Farmers are currently dealing with a sharp rise in the price of non-organic fertilizers as well as uncertainty around the types of fertilizers that are accessible. They then realize how unpleasant their lives are and how difficult it is to meet their basic requirements. They want to raise their standard of living. Therefore, they were aware that switching to organic farming was a long-term sustainable answer and that employing organic fertilizer had a substantial benefit for them. In this study, attitudes, subjective norms, perceived behavior control, and environmental concern variables all have an impact on the benefits of using organic fertilizers.

When applied alone, organic fertilizer under a reduced-tillage system might provide higher grains than non-organic fertilizers for legume crops. In humid conditions, crop yields of organic fertilizer alone were more influenced by climate and tillage method (Allam & Radicetti, 2022). Additionally, employing organic fertilizer also means that farmers who currently use it will keep doing so. The econometric models generally applied to study farmers' adoption of eco-friendly agricultural practices employ a range of determinants such as farm and farmer characteristics, institutional setting, individual perceptions related to the economic environment, etc. Hansson et al. (2012) noticed that psycho-social models have recently been used in the field of behavioral economics and have been shown to explain economic behavior and to increase the relevance of economic models.

2.4 Intention to Reuse Organic Fertilizer

The future purpose of a consumer to engage in a behavior is known as behavioral intention. Behavior intention on the environment consists of some factors that are assumed to encourage an individual to behave in an environmentally friendly manner. Farmers' intention to use organic fertilizer is characterized as an examination of the decision-making process based on the expanded Theory of Planned Behavior (TPB). Farmers' interest and potential use of organic fertilizer is reflected in their intentions today and in the future. Farmers' behavior intentions are their plans to use a certain organic fertilizer they have chosen after consideration. The likelihood, level of passion, and propensity of farmers to continue their practices are referred to as behavior intention.

Actually, things are not always straightforward to predict subsequent behavior. Choosing one alternative among multiple alternatives is involved performing a certain behavior. The intention measurement cannot take place close to the moment of performance of the behavior because various factors may intervene between this measurement and the enactment of the behavior. As well, for understanding and predicting behavior change, it is worth noting that most relevant behaviors are those that involve quite a high degree of uncertainty around the possibility of implementing that behavior.

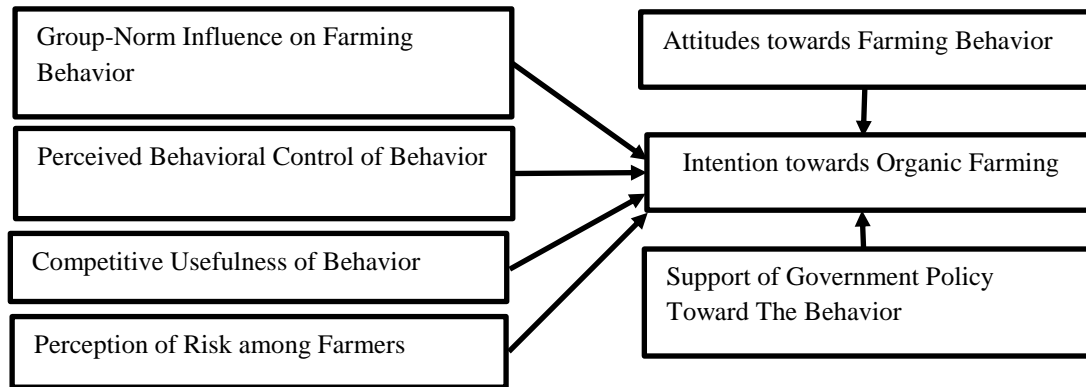
In this study, attitudes toward using organic fertilizer, subjective norms, perceived behavior control, and environmental concerns with organic fertilizer all have an impact on the effects of organic fertilizer on behavior intentions. It has a positive and noticeable impact on farmers' actual use behavior intention when it comes to organic fertilizer (Marko et al., 2020). According to Zeithaml (1988), a person's intention to engage in a particular activity is a component of their future conduct. The findings of Ajzen and Fishbein's (1980) study, which claimed that behavioral intention and actual behavior are connected, also confirm this.

Conner and Armitage (1998) found that past behavior has an important contribution in predicting intention and behavior. There is no significant difference between the behavior intention of male and female. Studies of intention-behavior relations too have reported that experience increases the accessibility of intention (Doll & Ajzen, 1992) and that greater accessibility of intention leads to improved intention-behavior consistency (Bassili, 1995).

2.5 Previous Studies

The first study was written by Yanakittkul et al. (2020) and is titled "A model of farmers aspirations towards organic farming." The study's objective was to identify factors that affect farmers' attitudes regarding organic fertilizer. 448 samples of organic rice farmers and 401 samples of non-organic rice farmers are the study's respondent farmers. It was discovered that organic rice farmers understand the advantages of organic rice, which gave them the desire to plant it in their next crop cycle. Even while non-organic rice farmers were aware of the benefits of organic farming, it did not have a significant impact on their decision to plant organic rice. This study compares organic and non-organic rice growers, with a focus on identifying the elements that contribute to and preserve organic agricultural practices.

Figure (2.2) Conceptual Framework of Yanakittkul & Chuenjit

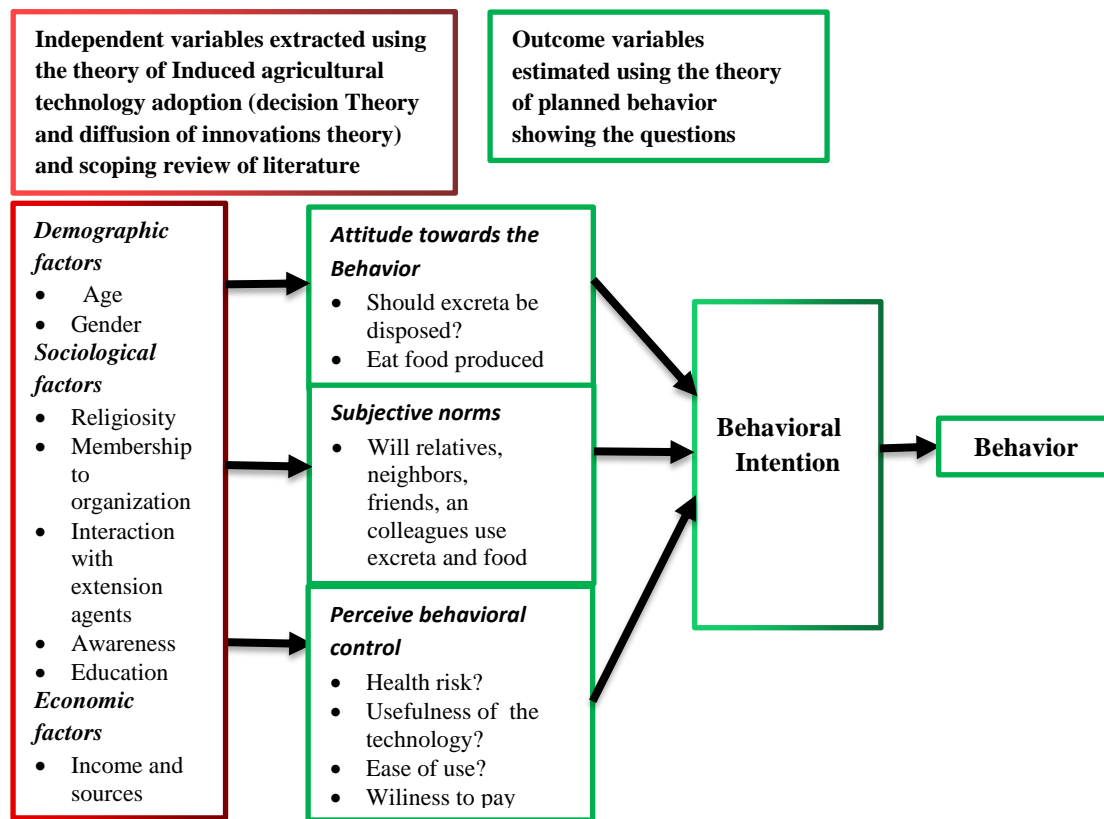


Source: Yanakittkul & Chuenjit (1991)

In comparison to conventional rice planting, organic rice planting is better for the ecosystem and soil fertilization, organic rice farmers are more diligent than conventional rice farmers, organic farming is less expensive because fertilizers and pesticides are not used, and organic farming uses the same machinery and equipment as conventional farming. If farmers think organic farming is superior to conventional farming and decide to plant organic rice, they will do so.

The second study, written by Simon et al. (2022), is titled Behavioral Intentions of Rural Farmers to Recycle Human Excreta in Agriculture. The objective of this study is to estimate the influence ex-ante the sociological, demographic, and socio-economic factors that influence and characterizes the behavioral intention of farmers to use human excreta in agriculture. 341 farmers in the Vulindlela Traditional Authority of South Africa were questioned by using a systematic random selection technique. The findings of this study suggest that there is demand for human excreta derived fertilizers in rural agricultural communities of South Africa. The farmers exhibited positive attitude towards the recycling of human excreta in agricultural food systems.

Figure (2.3) Conceptual Framework of Simon et al.

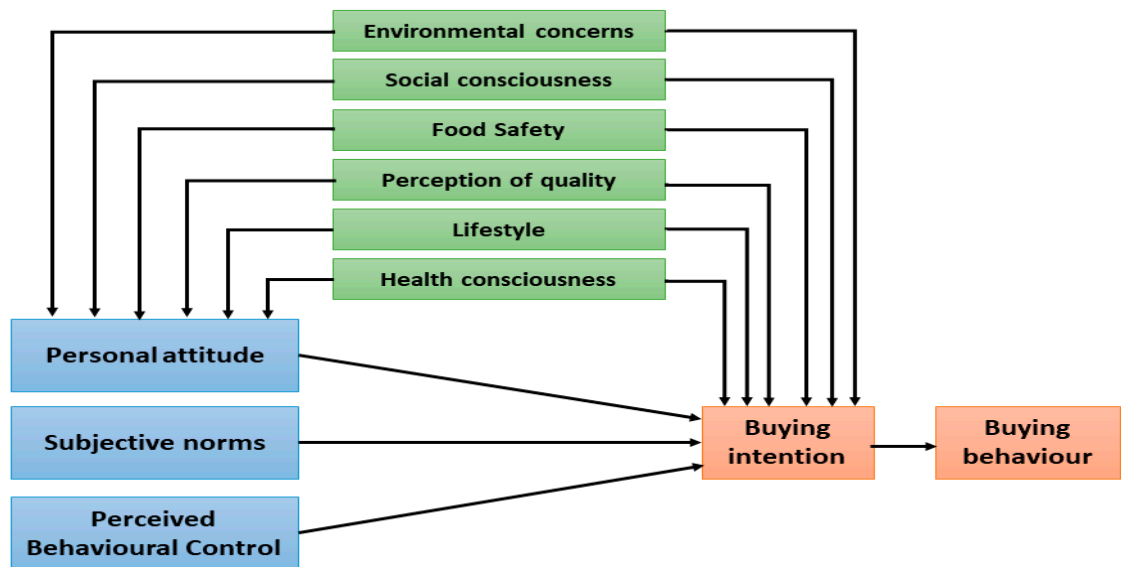


Source: Simon et al. (2022)

Younger farmers had more favorable attitudes regarding recycling human waste. The negative income effect supported the findings of prior studies by showing that lower-income farmers were more inclined to use human excrement.

Values and Planned Behavior of the Romanian Organic Food Consumer is the topic of the third study's article, which was published by Cristina et al. (2020). The objective of this study is to combine the theory of planned behavior with consumer value to analyze the factors that affect consumers' buying intentions and behaviors for Romanian organic products from these two perspectives. It also aims to investigate consumers' buying intentions for Romanian organic food products. The questionnaires were filled out by 330 respondents in total.

Figure (2.4) Conceptual Framework of Cristina et al.



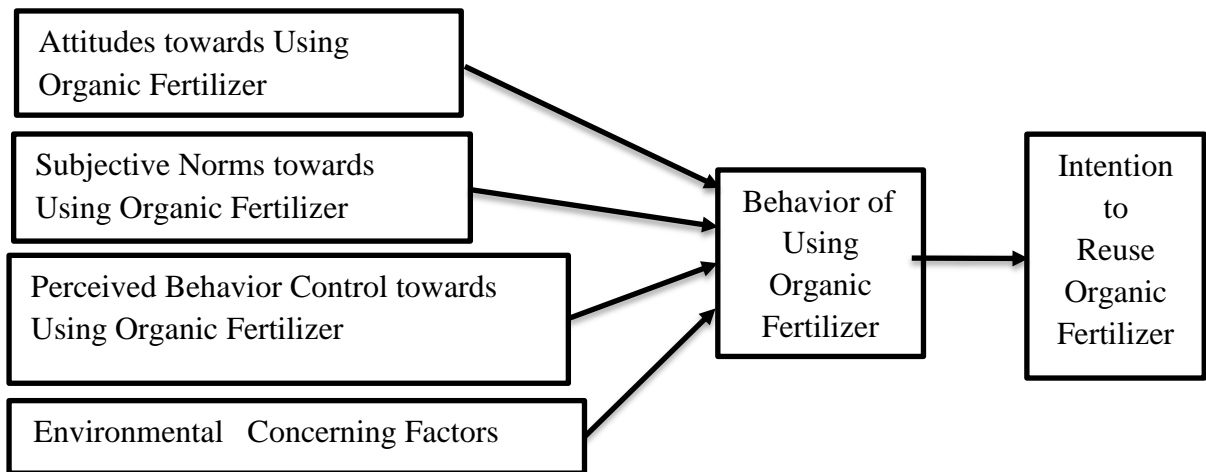
Source: Cristina et al. (2020)

The study's findings show that even though, environmental concerns, the social impact of organic farming and the consumer's lifestyle are important in defining their personal attitude towards organic products, they do not have a significant direct effect on their buying intention and behavior respectively. The health and safety aspects of organic products have a significant impact on the buying intention of the consumer while at the same time affecting their personal attitude.

2.6 Conceptual Framework of the Study

The conceptual framework of this study is developed based on theoretical idea and the previous research papers. To explore the intention to reuse organic fertilizer of farmers, this study analyses the effect of antecedent factors on using organic fertilizer of farmers. And then, this study examines whether the farmers continue to use organic fertilizer for their farms.

Figure (2.5) Conceptual Framework of the Study



Source: Own Compilation (2022)

The study uses attitudes, subjective norms, perceived behavior control, and environmental concerning factors as the antecedent factors of farmers desire to use organic fertilizer. According to the study, antecedent factors affect farmers' using organic fertilizer, which in turn affects the farmers' intention to reuse organic fertilizer.

CHAPTER 3

PROFILES AND BEHAVIOR OF USING ORGANIC FERTILIZER AMONG FARMERS

This chapter is divided into two sections. The introduction covers the history of organic fertilizer use in Myanmar. Profiles of the respondents who use organic fertilizer are shown in the second section.

3.1 Background of Using Organic Fertilizer in Myanmar

There isn't much information find out there on organic and eco-friendly farming in Myanmar. Cooperative or coordinated action has its limits. The development of the agricultural sector depends on the number of natural resources that Myanmar has, including land, water, animals, plants, and a good environment. Around 167 million acres (17.4% of the total area) are under cultivation for various agricultural kinds (Ministry of Agriculture and Irrigation, MOAI., 2010). Beginning in the middle of the 1990s, a lot of foreign investors tried to launch organic agriculture projects in Myanmar with the hope of using the country's hospitable environment and fertile soil in various regions to create organic goods. However, the majority of these global private ventures fizzled out quickly. However, they contributed to increasing awareness throughout the nation, particularly among the private sector (Aye,2015).

The idea of organic farming and the market potential have also been introduced to many representatives from the public and private sectors when traveling abroad, such as through attending regional and worldwide workshops and conferences. These initiatives assisted Myanmar's regional organic agricultural groups in getting off the ground (Green Net Cooperative, 2001). The country's current agricultural systems adhere to traditional traditions that make use of the natural resources at hand together with developed cultural norms. Although the use of non-organic like fertilizers and pesticides has long been a part of Myanmar's agriculture, the amount actually applied falls far short of the ideal rates. Therefore, there is currently no proof that the usage of such manmade substances in Myanmar has seriously disrupted natural ecosystems or contaminated the environment. Research is urgently needed to create productive, profitable, and sustainable agricultural systems without the use of pricey and dangerous non-organic agricultural chemicals, however, due to the rising costs of these chemicals and their unreliable availability.

Farmers in Myanmar have a long history of using natural resources for agricultural production, and until the advent of non-organic fertilizers in the late 1960s, agricultural production was entirely based on the usage of farmyard manure (FYM) and locally accessible organic manures. Depending on their availability, the kind and amount of organic manures employed in various places varied substantially. Crop yields dramatically increased after non-organic fertilizers were introduced to the world in the late 1900s. Crop yields were also increased as a result of the introduction of high producing farmers (Myint, 1994).

Due to farmers' significantly lower than recommended fertilizer usage and the nutrient needs of high producing farmers, there has been a significant depletion of plant nutrients from soil. This has resulted in a critical decline in soil fertility and productivity. Farmers are beginning to recognize the problem of declining soil fertility when crops do not yield as much as expected. However, the restoration of soil fertility in most cases has not been achieved. And the increasing cost and uncertain availability of non-organic fertilizers in the developing countries has led to higher production costs. Under such circumstances, efforts to increase agricultural production, with decreased dependence on expensive and even hazardous chemical inputs, should be made. More effective ways and means of using natural resources would undoubtedly help to improve agricultural production in Myanmar (Myint, 1994).

Farmers in Myanmar must contend with rising prices and a hazy supply of non-organic fertilizers. Additionally, the productivity of the soil has been negatively impacted by the ongoing use of some non-organic fertilizers. Given this, farmers are being urged to use more of the organic waste and residues that are readily available as organic or biofertilizers. In Myanmar, the utilization of animal waste—particularly cattle manure—is not new. Around 18 lbs. of cow manure are typically collected per head each day. A program to expand the generation of home fuels using biogas plants was started in 1974 as a result of the high cost of fossil fuels. Over the past ten years, improvements have been made in the efficiency of gas usage for both lighting and cooking. The Department of Agricultural Mechanization is developing a family-sized digester and determining if it can be used as a reliable source of energy in rural areas. The gas plant's wastewater can be used as excellent organic fertilizer. Sunnhemp (*Crotalaria juncea*), daincha (*Sesbania aculeata*), cowpea (*Vigna unguiculata*), black gram (*Vigna mungo*), and green gram are the plants most frequently utilized as green manure (*Vigna radiata*). Data from numerous studies have shown that green manure increases crop yields, particularly paddy. Pulses

can be planted and used as green manure in hilly areas, particularly in Shan State, to boost crop productivity and successfully stop soil erosion. About 3,240 acres are covered by green manuring in Shan State inquiries into the use studies on the application of different kinds of green manures, including the recently introduced stem-modulating, *Sesbania rostrata* (a West African plant that thrives well in standing water), are now being conducted. Although the majority of the examined green manures increased crop yields, the findings do not fully support their replacement of non-organic fertilizers. It is typically advised to only partially replace non-organic fertilizers with green manures is more optimistic. Therefore, the idea of promoting the use of *Azolla* (also known as Duckweed fern) is currently being considered (Myint, 1994).

In addition to the significant nutrient losses caused by high yielding crops, erosive natural processes also play a role in the continued loss of soil fertility. The development of crop output in the agricultural sector depends on maintaining and enhancing soil fertility. Use of non-fertilizers alone on an ongoing basis has the potential to degrade soil fertility and structure, which could have an adverse effect on crop output. As a result, suitable alternatives to lessen agricultural production's sole reliance on non-fertilizers have been thoroughly investigated. Numerous research on the subject have unmistakably shown that different kinds of organic materials might supplement all the plant nutrients except nitrogen, which is frequently a crucial limiting factor (Myint, 1994).

Since late 2000, the private sector in Myanmar has taken the effort to sell self-declared organic items in local supermarkets, such as the locally produced Nara tea. The Myanmar Organic Agriculture Group (MOAG) was established in 2009 as a private sector association to support the growth of organic agriculture in the nation by the Myanmar Fruits and Vegetable Producers Association (MFVPA). By switching to an organic farming method, Myanmar can increase the value and volume of its agricultural exports. Myanmar has the potential to establish an organic market that will raise the value of locally grown goods produced for export and farmers' living standards (Tun, 2017).

3.2 Production and Use of Organic Fertilizer in Myanmar

In Myanmar, organic fertilizer is made from composted manure of animals, such as cattle, chicken and bats, sewage sludge that are easily available in the region. There are five different types of organic fertilizers: peat, seaweed, guano, slurry, and worm castings. In previous time, there were no plants that could produce organic fertilizer commercially in Myanmar, and there were only small privately owned production plants.

Currently, the San Wati Livestock Organic Fertilizer Plant, which first began operations in February 2022, will implement methods for sustainable production and quality control and, after it satisfies international requirements, create distribution networks through cooperatives. An acre of paddy needs four bags of this organic fertilizer. A 50- kilograms bag is priced at 15,000 kyats. There are three local supplier companies that import organic fertilizer pellets from abroad. These companies are Khin Kyi Trading Company, UMG Myanmar and Harmony Myanmar Group Agro Group (Harmony). One of three companies, Harmony Myanmar Agro Group (Harmony), started operations five years ago in response to this expanding need. The company prides itself on selling a superior product at a price point that is competitive with chemical inputs. Their products are imported from suppliers in the Netherlands, Germany, Italy, and Turkey, as well as neighboring Asian countries. Their ‘flagship product’, organic fertilizer pellets made from chicken manure and sourced from a company in the Netherlands, has generated a lot of interest among farmers. These suppliers offer Harmony discounts on their products to break into the nascent but growing Myanmar market. Harmony passes along this discount as well as their own discount to farmers to establish themselves as a key supplier and gain a foothold in the market (Katerberg, 2021).

Organic fertilizers are used to plants and/or soils to improve soil fertility, plant vigor, produce quality and yield. Organic-based fertilizers are used in both organic and conventional agriculture. Organic fertilizer practice is essential when the prices of fertilizer soared to multiple-year highs in international market. The agricultural sector in Myanmar could face input burden from exorbitant prices of imported fertilizer. The compost of green manure is the simplest, eco-friendly and least costly way for agricultural nutrients and it helps reduce the use of non-organic fertilizer about 50 per cent. For those who are interested in producing in a more sustainable way, using organic fertilizer is a simple and profitable step in the right direction. Additionally, if the nutrient needs of the plants are fully met, understanding what nutrients the soil needs help make it simpler to add those that are deficient. (Chan, 2020).

3.3 Profile of Respondents

Demographic factors like gender, marital status, age, education level, occupation, monthly income, number of work years, cultivated area, and frequency of organic fertilizer using are investigated in order to create a profile of the organic fertilizer users. Certain interests and requirements are determined by demographic factors.

In this study more effectively target on organic fertilizer used farmers by segmenting potential farmers based on demographic factors. In actuality, there are some socio-demographic variations in attitudes toward and usage of organic fertilizer. The profile of respondents was presented in Table (3.1) below.

Table (3.1) Profile of Respondents

| Sr. No. | Particular | Frequency | Percentage |
|---------|------------------------------------|------------|--------------|
| | Total | 103 | 100.0 |
| 1 | Gender: Male | 65 | 63.00 |
| | Female | 38 | 37.00 |
| 2 | Marital Status: Single | 17 | 16.50 |
| | Married | 86 | 83.50 |
| 3 | Age: 21-30 Years | 4 | 3.88 |
| | 31-40 Years | 29 | 28.16 |
| | 41-50 Years | 53 | 51.46 |
| | 51-46 | 15 | 14.56 |
| 4 | Education: Primary school | 18 | 17.48 |
| | Middle school | 36 | 34.94 |
| | High school | 31 | 30.10 |
| 5 | Income: Below 200,000 Kyats | 13 | 12.62 |
| | 200,000-300,000 Kyats | 56 | 54.37 |
| | 300,001-500,000 Kyats | 33 | 32.04 |

Source: Survey Data (2022)

In terms of gender, 103 participants in total, 65 of whom are men and 38 of whom are women, participated in the study. Gender is an important component to differentiate individuals' emotion. In the past, economic and social status made females' conditions and roles were placed under males. Just like that organic farming employs more males than female. This may indicate that male farmers are more likely to use organic fertilizer, and the study found that women are less likely to participate in agricultural production than they are usually engaged in post harvesting activities like transportation, processing and marketing of farm produce. It implies that, male respondents had more awareness than female respondents about the soil conservation practices.

The results depicted in Table (3.1) show that the majority of the farmers (83.50%) are married, while very few (16.50%) were single. This means that married people are

more involved in farming and may receive assistance from their spouses in carrying out some activities on the organic farm.

Age can be a factor determining individuals' differences because age relates to past experiences, which make them have wider maturity and thought. According to this data, among organic used farmers, 32.04% are youth, 51.46% are adult and 16.50% are the aged. This confirms that the majority of respondents between the ages of 21 and 50 are of working age. By implication, youths and adult's involvement (83.50%) in farming is the participation percentage of farmers who can work is high and these workforces may have enough energy to effectively carry out some labor-intensive activities in organic farm. These will pose a safe to food supply in the future. And those adult farmers are more disposed to organic fertilizer use, they are likely to have more years of farming experience, as to appreciate the positive effect of fertilizer use in farming(Beshir,2012).

According to respondents' levels of education, the majority are in middle school and high school (34.94% and 30.10%, respectively), while 17.48% have graduated from college. Table also reveals that 17.48% of respondents attended primary school. The outcome shows that the majority of farmers were literate, it is likely that they will want information geared toward increasing output. High literacy among the respondents may enhance adoption of innovations that are related to organic farming. When it considers everything, it can see that elements like attitude, subjective norm, perceived conduct, and environmental concern are regarded seriously when it comes to applying organic fertilizer because the educational level is not low.

The 54.37% of respondents earn between 200,000 kyats and 300,000 kyats monthly, followed by 32.04% of respondents. They earn between 300,001 kyats and 500,000 kyats each month. Their income is not too much but they try to use organic fertilizer because of their awareness.

Table (3.2) Farmers Behaviors in Using Organic Fertilizer

| | | | |
|---|---|----|-------|
| 1 | Working Years: < 5years | 10 | 9.71 |
| | 5 to 10 years | 84 | 81.55 |
| 2 | Field Area: < 2 Acres | 87 | 84.47 |
| | 2-3 Acres | 5 | 4.85 |
| | 3-4 Acres | 8 | 7.77 |
| | 5-6 Acres | 1 | 0.97 |
| 3 | Frequency of Using Organic Fertilizer: | | |
| | Daily | 27 | 26.21 |
| | Once a week | 15 | 14.57 |

Source: Survey Data (2022)

According to survey results shown in Table (3.2), 81.55% have experience using organic fertilizer between five and ten years, while 9.71% have less than five years, and 8.74% of them have more than ten years' experience. The result shows that most of the farmers know the benefits of using organic fertilizer. The results also shows that almost all of the respondents are small-scale farmers. The majority of respondents owns less than 2 acres. It was because of cultivating in a mountainous area. As a result, only roughly 1 to 2 acres are owned by 84.47% of farmers. because of the toxic nature of agrochemicals like pesticides, which kill some of the important species like honey bees in one hand and reduces production yield of honey, and decreases the probability of some plants to be pollinated by insects. This phenomenon indirectly affects species diversity.

The survey revealed that organic farming is dominated by male farmers operating at small-scale level. Organic fertilizer used farmers do not use non-organic fertilizer because of its negative effects and non-organic fertilizers are more expensive than organic fertilizers and due to factors such as lack of capital. Therefore, the intention of the farmers is to continue using organic fertilizer that is currently being used.

3.4 Reliability Test

The variable's stability or consistency in the structured questionnaire is measured by reliability. The 5-point Likert scale is used to construct questions. Table (3.2) displays the findings of the Cronbach's Alpha reliability test .

Table (3.3) Results from Reliability Test

| No. | Variables | Number of items | Cronbach's Alpha |
|------------|---|------------------------|-------------------------|
| 1 | Attitudes towards Using Organic Fertilizer | 5 | 0.900 |
| 2 | Subjective Norms towards Using Organic Fertilizer | 5 | 0.821 |
| 3 | Perceived Behavior Control towards Using Organic | 5 | 0.845 |
| 4 | Environmental Concerning Factors | 5 | 0.911 |
| 5 | Using Organic Fertilizer | 5 | 0.869 |
| 6 | Intention to Reuse Organic Fertilizer | 5 | 0.929 |

Source: Survey Data (2022)

Table (3.2) displays the Cronbach's alpha values for each variable, and it reveals that all of the scores are higher than 0.8. Because of this, it is considered to have strong reliability, and the results are relevant to this study.

CHAPTER 4

ANALYSIS ON ANTECEDENT FACTORS, BEHAVIOR OF USING ORGANIC FERTILIZER AND INTENTION TO REUSE ORGANIC FERTILIZER

The mean scores for attitude toward using organic fertilizer, subjective norms toward using organic fertilizer, perceived behavior control toward using organic fertilizer, environmental concern factors, using organic fertilizer, and behavior intention toward using organic fertilizer are presented in this chapter. The analysis of the effect of antecedent factors on using organic fertilizer and the effect of using organic fertilizer on intention to reuse organic fertilizer are also presented in this chapter.

The structured questionnaire employs a five-point Likert scale (1: strongly disagree, 2: disagree, 3: neither agree nor disagree, 4: agree, and 5: strongly agree) in order to identify the contributing elements. According to the Best (1977), the mean scores of five-point Likert scale items are asserted as follows:

The mean score among 1:00 to 1.80 means strongly disagree; the mean score among 1:81 to 2.60 means disagree; the mean score among 2.61 to 3.40 means neither agree nor disagree; the mean score among 3.41 to 4.20 means agree; and the mean score among 4.21 to 5.00 means strongly agree.

4.1 Analysis on the Effect of Antecedent Factors on Behavior of Using Organic Fertilizer

The following section consists of the mean scores of antecedent factors, behavior of using organic fertilizer and multiple linear regression analysis of behavior of using organic fertilizer.

In this study, attitudes towards using organic fertilizer, subjective norm towards using organic fertilizer, perceived behavior control towards using organic fertilizer, and environmental concerning factors are antecedent factors.

(a) Attitudes towards Using Organic Fertilizer

Farmers who use organic fertilizer may have different attitudes about using it. 103 farmers who use organic fertilizer are interviewed for this study. The results of the calculation of the mean scores for each question are presented in Table 4.1.

The highest and lowest scores are 3.72 and 3.52, respectively, while Table 4.1 shows that the overall mean score is 3.64. As a result, respondents agree that using organic fertilizer give them benefits. Farmers acknowledge that it enhances a farm's reputation. Due to farmers' beliefs that using organic fertilizer signifies a farming of the past practices, this lead to a positive attitude towards behaviors. It is widely available on the market, and it is less expensive than non-organic fertilizer. Since these are the resources needed to use organic fertilizer, it will be able to meet the attitude of farmers and make behave well. Additionally, because organic fertilizer-grown crops are chemical-free, crops taste great and are healthy, and for farmers, this belief in quality assurance can generate greater favorable attitudes towards the crops that grow and produce only using organic fertilizer and good behavior.

Table (4.1) Attitudes Towards Using Organic Fertilizer

| Sr. No. | Description | Mean | Std.. Deviation |
|----------------|--|-------------|------------------------|
| 1 | Positive image to a farm | 3.71 | 0.94 |
| 2 | A step to farming of the past | 3.72 | 0.78 |
| 3 | Availability of local markets for organic fertilizer | 3.67 | 1.01 |
| 4 | Improving product taste | 3.52 | 1.04 |
| 5 | Cheaper than chemical fertilizer | 3.60 | 0.96 |
| | Overall Mean | 3.64 | |

Source: Survey Data (2022)

Therefore, farmers give a high level of approval for the survey's observed factors. Each observed variable, such as farmers' opinions about using organic fertilizer, is connected to the research model. The overall mean of attitudes was in favor of using organic fertilizer.

(b) Subjective Norms Towards Using Organic Fertilizer

Based on the examination of the survey data, Table 4.2 shows the subjective norm towards using organic fertilizer. The majority of the important people in their lives concur that they should use organic fertilizer on their farm.

Table (4.2) Subjective Norms Towards Using Organic Fertilizer

| Sr. No. | Description | Mean | Std.. Deviation |
|----------------|---|-------------|------------------------|
| 1 | Favoring the idea of using organic fertilizer on farm | 3.51 | 1.09 |
| 2 | Favoring of friends and colleague farmers | 3.58 | 0.99 |
| 3 | Favoring of neighborhood | 3.50 | 0.88 |
| 4 | Suggestions from others | 3.60 | 1.01 |
| 5 | Favoring of people living in the surrounding area | 4.17 | 0.81 |
| | Overall Mean | 3.67 | |

Source: Survey Data (2022)

Subjective norm refers to the perceived social pressure an individual feels to behave a specific way, whether it comes from society at large or their immediate surroundings. According to respondents' responses, the overall mean value for their desire to engage in a subjective norm for using organic fertilizer is 3.67, and the lowest score is 3.50 and highest scores is 4.17. Although the lowest mean score is 3.50, people in neighborhood also agree using organic fertilizer.

The survey revealed that farmers' decisions to use or not use organic fertilizer were impacted by subjective norms, often known as social norms. People adhere to social norms because they provide knowledge about what behavior is most proper or advantageous. According to the observed data, it can be seen that the farmers follow the subjective norms based on the wishes of the people around them, including their families. In particular, respondents tend to pay attention to the wishes and suggestions of people from the surrounding areas and those they valued.

(c) Perceived Behavior Control Towards Using Organic fertilizer

This section examines perceived behavior control in relation to the mean score and standard deviation of the decision to use organic fertilizer. The mean scores for the examination of perceived behavior control with regard to the use of organic fertilizer are shown in Table 4.3.

Table (4.3) Perceived Behavior Control Towards Organic Fertilizer

| Sr. No. | Description | Mean | Std.. Deviation |
|----------------|--|-------------|------------------------|
| 1 | Saving production costs | 3.52 | 0.95 |
| 2 | Increasing farm income | 3.60 | 0.87 |
| 3 | Traditional way of usage organic fertilizers | 3.53 | 0.86 |
| 4 | The possibility to get access to information sources | 3.63 | 0.84 |
| 5 | The possibility to cultivate with organic instead of non-organic fertilizers | 3.80 | 0.84 |
| | Overall Mean | 3.61 | |

Source: Survey Data (2022)

The overall mean value is 3.61, with the highest value being 3.80 and the lowest value being 3.52. Based on the average value for each scale, it can be deduced that respondents agree organic fertilizer will reduce production costs, increase farm income that links the behavior to a certain outcome and to another attribute, such as the cost incurred by performing the behavior. It is found to be agreeing with what is related to the research model, and that encourage them to use organic fertilizer instead of non-organic fertilizer. Due to survey data, respondents' belief that organic farming is not a modern method for farmers, and linked to the concept of perceived behavioral control from theory of planned behavior, and consistent with the prediction of how easy it would be for them to perform in an activity.

According this theory, those available resources and opportunities have a direct effect on the likelihood of behavioral success. Farmers who use organic fertilizers will have access to sources of information about organic fertilizers, which will influence their intentions and behaviors and generate to behavioral achievement. Perceived behavior control, according to the mean value calculated from the survey data, the perception factors about the use of organic fertilizer lead to the possibility of continuing to reuse organic fertilizer.

(c) Environmental Concerning Factors

At the level of the ecosystem, maintaining natural areas in and around fields while avoiding chemical inputs creates optimal habitats for wildlife, and organic farming provides more biodiversity than other agricultural systems. Utilizing organic fertilizer

lessens soil deterioration, improves soil fertility and soil structure, and when a farm is well-managed and uses organic fertilizer, the risk of groundwater pollution is significantly reduced. Such awareness of environmental concerns leads to behavioral action for farmers to continue using organic fertilizer.

Table (4.4) Environmental Concerning Factors

| Sr. No. | Description | Mean | Std.. Deviation |
|----------------|---|-------------|----------------------------|
| 1 | Reducing chemical output to environment | 3.83 | 0.90 |
| 2 | Creating suitable habitats for wild life | 3.70 | 0.89 |
| 3 | Reducing toxic gas (greenhouse gases) and having positive impact on environment | 3.67 | 0.86 |
| 4 | Reducing soil degradation and improving soil fertility and soil structure | 3.51 | 0.92 |
| 5 | Reducing the risk of groundwater pollution | 3.42 | 1.04 |
| | Overall Mean | 3.62 | |

Source: Survey Data (2022)

The environmental concerns of the respondents on the survey data analysis are shown in Table 4.4. The observed variables also had a overall mean value is 3.62, with a range of 3.42 to 3.83, in accordance with the pertinent environmental questions. As a result, the majority of respondents agree that they care for the environment and may be sensitive to information concerning pesticides, farming practices, and non-organic fertilizer that could be hazardous to the environment. This is predicated on the idea that as farmers' awareness of environmental issues, so it does their desire to use organic fertilizer.

According to the survey data received from the respondents, they have agreed to the following regarding environmental concerns. Using non-organic fertilizers excessively results in "dead soil." Organic farming is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects.

Organic Agriculture combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved. When organic fertilizer is used, the effects on the environment are significantly reduced. The use of organic fertilizer is examined in this section using the mean score and standard deviation. The mean scores for the analysis result of using organic fertilizer are presented in Table (4.5).

Table (4.5) Behavior of Using Organic Fertilizer

| Sr. No. | Description | Mean | Std. Deviation |
|----------------|---|-------------|-----------------------|
| 1 | Feeling on guilty of using inorganic fertilizer | 3.98 | 0.89 |
| 2 | Sustainable development of agriculture | 3.78 | 0.88 |
| 3 | Feeling of low-cost farming practice | 3.59 | 0.85 |
| 4 | Good for health | 3.50 | 0.88 |
| 5 | High demand market of organic crops | 3.84 | 0.84 |
| | Overall Mean | 3.73 | |

Source: Survey Data (2022)

According to respondents' responses, the highest mean value for their intention to use organic fertilizer is 3.98, while the lowest is 3.50. the overall mean score is 3.73. To explain the rationale for using organic fertilizer, questions about its use are extracted. According to the mean determined from survey responses from users of organic fertilizer, using organic fertilizer has a high mean value for using behavior. It is convenient for farmers to use non-organic fertilizer, but it will cause acidification and damage to the soil, and kill microbes. On the other hand, if they use organic fertilizer, they can avoid these problems and create sustainable habitats for soil, plants, and wildlife, so they feel guilty if they don't use organic fertilizer. Therefore, by seeing at the high mean score shown in the Table, it can find out that they feel guilty if they do not use organic fertilizer. Farmers know that farming with organic fertilizer is the mainstay for sustainable development of agriculture, and it is only one answer to the problems being faced by farmers that caused by non-organic fertilizer. According to the mean score, farmers' feel that using organic fertilizer can be deduced that they believe organic fertilizer will reduce production costs, will generate to behavior to continue using organic fertilizer. The crops cultivated using organic fertilizer are safe for consumption that they don't contain chemicals that are dangerous to humans, animals, or the environment. As it is, that fact is one of the reasons why farmers want to continue using organic fertilizer. Some health-conscious consumers

gravitate toward organic over conventional products due to concerns about highly processed foods, artificial ingredients, as well as the effects of pesticides, hormones and antibiotics. Crops grown using organic fertilizer have domestic and foreign demand potential, and this fact makes the behavior of farmers to continue using organic fertilizer. ; To find out the effect of antecedent factors on using organic fertilizer, is applied to test for analysis. Table (4.6) identifies the relationship of attitudes towards using organic fertilizer, subjective norms towards using organic fertilizer, perceived behavior control and environmental concerning factors to using organic fertilizer.

Table (4.6) Effect of Antecedent Factors on Behavior of Using Organic Fertilizer

| Variable | Unstandardized Coefficient | | Standardized Coefficient Beta | t | Sig | VIF |
|----------------------------|----------------------------|-----------|-------------------------------|-------|-------|-------|
| | B | Std Error | | | | |
| (Constant) | 0.847 | 0.258 | | 3.283 | 0.001 | |
| Attitudes | 0.274** | 0.114 | 0.313 | 2.397 | 0.018 | 4.101 |
| Subjective Norm | -0.075 | 0.114 | -0.077 | -0.66 | 0.510 | 3.301 |
| Perceived Behavior Control | 0.506*** | 0.112 | 0.493 | 4.526 | 0.000 | 2.86 |
| Environmental Concerning | 0.093 | 0.1 | 0.105 | 0.930 | 0.355 | 3.046 |
| R Value | 0.770 | | | | | |
| R Square | 0.593 | | | | | |
| Adjusted R Square | 0.577 | | | | | |
| F Value | 35.721*** | | | | | |
| Durbin-Waston | 1.633 | | | | | |

Source: Survey Data (2022)

***Significant at 1% level, **Significant at 5% level, *Significant at 10% level

As the results shown in Table (4.6), R-square is (0.593) and the adjusted R-square is (0.577). R-square and Adjusted R-square should differ as little as possible from one another. Therefore, the regression model accounted for (57.7%) about the variance of the dependent variable (behavior of using organic fertilizer) with the independent variable (attitudes toward using organic fertilizer, subjective norms toward using organic fertilizer, perceived behavior control toward using organic fertilizer, environmental concerning factors), according to adjusted R-square, which is (0.577) which is not far from R-square (0.593).

F value of 35.721 shows that the overall significant model is highly significant at the 5% level of the significance level (95% confidence interval), and the specified model can be regarded as valid. The Durbin-Watson coefficient is 1.633, with a range of 0 to 4. The prevailing consensus is that Durbin-Watson test results between 1.5 and 2.5 are both acceptable and somewhat normal.

According to survey data, perceived behavior control has positively significant effect on behavior of using organic fertilizer and attitudes towards using organic fertilizer have positively significant effect on behavior of using organic fertilizer. It indicates that both attitudes towards using organic fertilizer and perceived behavior control are vital components of using organic fertilizer. Perceived behavior control is the most affecting factor on behavior of using organic fertilizer.

It can be concluded that farmers know the benefits of using organic fertilizer and they have the accessibility of information about the organic fertilizer from their relatives and expert from some organic fertilizer plants. They have the possibility of cultivation using organic fertilizer because of saving production costs and increasing their income. They combine burnt leaves, and cow dung as the organic fertilizer as well as buying organic fertilizer bags from shops.

Farmers accept that using organic fertilizer on their farms improve the taste of their crops and give the positive image to a farm. The results obtained from the use of organic fertilizer, farmers develop confidence in using organic fertilizer and want to continue using it. Positive attitudes toward using organic fertilizer might, for the most part, produce beneficial results in this study.

4.2 Analysis on The Effect of Behavior of Using Organic Fertilizer on Intention to Reuse Organic Fertilizer

The mean scores of intention to reuse organic fertilizer and regression analysis on the effect of behavior of using organic fertilizer on intention to reuse organic fertilizer are presented in Table (4.7) and (4.8).

The mean scores and standard deviations are used in this section to examine the Intention to reuse organic fertilizer. The scores and standard deviation for the results of using organic fertilizer are shown in Table (4.7).

Table (4.7) Intention to Reuse Organic Fertilizer

| Sr. No. | Description | Mean | Std. Deviation |
|----------------|---|-------------|-----------------------|
| 1 | Recommendation to others to use organic fertilizer | 3.72 | 0.96 |
| 2 | Proceed to use the organic fertilizer because of benefit | 3.68 | 0.98 |
| 3 | Continue to use organic fertilizer because crop using organic fertilizer is better than crop using non-organic fertilizer | 3.76 | 0.97 |
| 4 | Intend to continue using organic fertilizer because of environmental concern | 3.88 | 0.92 |
| 5 | Plan to continue to use organic fertilizer forever | 3.53 | 1.05 |
| | Overall Mean | 3.71 | |

Source: Survey Data (2022)

The observed dependent variables ranged in value from 3.53 to 3.88, with an overall mean value of over 3.71. As a result, it was found that the majority of farmers gave a good rating about the intention to reused organic fertilizer. According result value most respondents agree that those who do not use organic fertilizer should use organic fertilizer as it is beneficial for users. Farmers know organic fertilizers have advantages because it doesn't make a crust on the soil as non-organic fertilizers sometimes do, and organic fertilizer improve water movement into the soil and, in time, add structure to the soil. Organics feed beneficial microbes, making the soil easier to work.

And then, farmers have knowledge on environmental concerns that organic agriculture contributes to mitigating the greenhouse effect and global warming through its ability to sequester carbon in the soil, and many management practices used by organic agriculture increase the return of carbon to the soil, raising productivity and favoring carbon storage. The responded would always use organic fertilizer for their own advantage and environmental consideration. Each scale of explanatory variable that can have a significant impact on the behavior intention receives high ratings from respondents.

According to the survey data, a linear regression model is used to determine the impact of farmers' usage of organic fertilizer on their behavior intention to use organic

fertilizer. Table (4.8) demonstrates the influence of farmers' intention to reuse organic fertilizer.

Table (4.8) Effect of Behavior of Using Organic Fertilizer on Intention to Reuse Organic Fertilizer

| Variable | Unstandardized Coefficients | | Standardized Coefficients Beata | t | Sig | VIF |
|--------------------------------------|-----------------------------|-----------|---------------------------------|--------|------|-----|
| | B | Std Error | | | | |
| (Constant) | -0.046 | 0.262 | | -0.177 | 0.86 | |
| Behavior of Using organic fertilizer | 1.007*** | 0.069 | 0.824 | 14.6 | 0.00 | 1 |
| R | 0.824 | | | | | |
| R Value | 0.77 | | | | | |
| R Square | 0.593 | | | | | |
| Adjusted R Square | 0.577 | | | | | |
| F Value | 35.721*** | | | | | |

Source: Survey Data (2022)

***Significant at 1% level, **Significant at 5% level, *Significant at 10% level

The result of Table (4.8) showed that the correlation coefficient R-square (0.678) is between 0 and 1, indicating that the model is adequate for identifying the effect. Based on the corrected R square, the regression model could account for roughly (57.3%) of the variance of the independent and dependent variables. At the 1% level, the overall F test is extremely significant, and the given model can be considered valid. Given that the Durbin-Watson coefficient is 1.990 in the range of 0 to 4, the multiple regression method is not violated by the model, according to the Durbin-Watson coefficient test. As a general rule, Durbin-Watson test statistical results between 1.5 and 2.5 are considered to be relatively typical and acceptable. As a general rule, Durbin-Watson test statistical results between 1.5 and 2.5 are considered to be relatively typical and acceptable. The behavior of using organic fertilizer has significantly positive effect on intention to reuse organic fertilizer.

The study of the data also shows that an increase in farmers' using organic fertilizer leads to intention to reuse organic fertilizer, and the majority of farmers gave a

good intention to reused organic fertilizer. It is discovered that there is a statistically significant relationship between using fertilizer and intention to reuse organic fertilizer. In summary, the using organic fertilizer has a significant effect on the intention to reuse organic fertilizer.

That is why, farmers proceed to use the organic fertilizer because of its advantages. In addition to these, the following factors also cause the behavior of farmers to continue using organic fertilizer. Organic fertilizers are derived from animal manure, slurry, vegetable waste and so on. Because it is carbon-based compounds, it increases the productivity and increases the quality of the products safe for human. Non-organic fertilizers deliver a rapid dose of nutrients but harmful for soil, environment and also for human being, whereas organic fertilizers move slower, more naturally and healthier for soil and environment. Farmers preference in terms of products quality, availability and safe for human being will affect farmers intention to reuse organic fertilizer. Additionally, farmers think that using organic fertilizer helps to protect the environment.

CHAPTER 5

CONCLUSION

This chapter consists of the findings and discussions, suggestions and recommendations based on the findings. This chapter also includes the suggestions for the further study needs for using organic fertilizer farming.

5.1 Findings and Discussions

This study aimed to examine the effect of antecedent factors on behavior of using organic fertilizer and to analyze the effect of using organic fertilizer on intention to reuse organic fertilizer. This study uses the antecedent factors including attitudes toward using organic fertilizer, subjective norms for using it, perceived behavior control toward using it, environmental concern variables, and the effect of fertilizer use on the intention to reuse organic fertilizer. 103 farmers who use organic fertilizer on their fields were requested to complete a structured questionnaire using a Likert scale in order to gather the primary data. Respondents are chosen using a simple random sampling method.

It is found that the majority of the respondents are male and married. It confirms that the majority of respondents between the ages of 21 and 50 are of working age. And those adult farmers are more disposed to organic fertilizer use, they are likely to have more years of farming experience, as to appreciate the positive effect of fertilizer use in farming. According to respondents' levels of education, the majority are in middle school and high school. and the outcome shows that the majority of farmers were literate, it is likely that they will want information geared toward increasing output. High literacy among the respondents may enhance adoption of innovations that are related to organic farming. When it considers everything, it can see that factors like attitude, subjective norm, perceived conduct, and environmental concern are regarded seriously when it comes to using organic fertilizer because the educational level is not low. `

According to respondents, most of farmers have experience using organic fertilizer and the result shows that most of the farmers know the benefits of using organic fertilizer. In terms of usage frequency, farmers use organic fertilizer not only used for feeding crop nutrients and soil conservation but also the organic fertilizer is very effective and essential in crop protection and production. It also stated that the respondents in the

survey areas had knowledge whether chemical inputs should not be used more in the future for the sake of protecting the environment.

For the first objective, the effect of antecedent factors on behavior of using organic fertilizer are analyzed by regression analysis. It is found that among the four antecedent factors, only two of these factors, are somewhat relevant to this study, and the other two are not. These two variables are attitudes toward using organic fertilizer and perceptions of behavior control towards using organic fertilizer.

Most farmers have positive attitudes toward organic fertilizer based on mean values of independent factors. Farmers think that it enhances a farm's reputation, and their opinions about behavior were good since they believed that using organic fertilizer represented farming that maintained to farming practices from the past. It is widely accessible and less expensive than non-organic fertilizer on the market. These are the resources required to reuse organic fertilizer; therefore, it will be able to accommodate farmers' attitudes and encourage reusing organic fertilizer. Furthermore, because crops grown with organic fertilizer are chemical-free, delicious, and healthful, farmers may have more favorable attitudes of the products they cultivate. Since organic fertilizer is inexpensive in their areas and the responders are low-income farmers, therefore, they are encouraged to continue using it instead of the more expensive agrochemical inputs.

As the regression result, perceived behavior control is main drivers for reusing organic fertilizer. Farmers accept organic fertilizer will reduce production costs, increase farm income that links the behavior to a certain outcome and to another attribute, such as the cost incurred by performing the behavior. It is found to be agreeing with what is related to the research model, and that encourage them to use organic fertilizer instead of non-organic fertilizer. Due to survey data how that respondents' belief that organic farming is not a modern method for farmers, and linked to the concept of perceived behavioral control from theory of planned behavior, and consistent with the prediction of how easy it would be for them to perform in an activity. According the result, those available resources and opportunities have a direct effect on the likelihood of behavioral success. Farmers who use organic fertilizers will have access to sources of information about organic fertilizers, which will influence their intentions and behaviors and generate to behavioral achievement.

Regarding second objective, the study reveals that the effect of using organic fertilizer on intention to reuse organic fertilizer. The influence of farmers' using organic fertilizer is also discovered to be positively significant on intention to reuse organic

fertilizer. The study of the data also shows that an increase in farmers' using organic fertilizer leads to intention to reuse organic fertilizer, and the majority of farmers gave a good intention to reused organic fertilizer. It is discovered that there is a statistically significant relationship between using fertilizer and intention to reuse organic fertilizer. In summary, the using organic fertilizer has a significant effect on the farmers' intention to reuse organic fertilizer.

The analysis of the data also reveals that as farmers' use of organic fertilizer increases, they are more likely to intend to reuse it. The majority of farmers expressed a positive desire to reuse organic fertilizer. It is found that fertilizer consumption and intention to reuse organic fertilizer are statistically significantly correlated. In conclusion, the intention to reuse organic fertilizer is significantly influenced by the use of organic fertilizer. Because of these benefits, farmers continue to use organic fertilizer. In addition to these, the resulting factors also influence how farmers behave about their continued use of organic fertilizer. Animal manure, slurry, vegetable waste, and other natural materials are used to make organic fertilizers. Because they are carbon-based compounds, they enhance output and raise the standard of products that are safe for people. Organic fertilizers work more slowly, naturally, and are better for the soil and environment than non-organic fertilizers, which give nutrients quickly but are harmful to humans, the environment, and soil. Farmers' intentions to reuse organic fertilizer will depend on the quality, accessibility, and safety of the goods they prefer. Farmers also believe that employing organic fertilizer improves to environmental protection.

5.2 Suggestions and Recommendations

Attitudes can strongly affect behavior and are frequently the product of experience or upbringing. Organic fertilizer enhances a farm's reputation and represents a return to traditional farming methods. Since the majority of farmers in the study areas cannot afford to use expensive non-organic fertilizer because of their low incomes, they have developed attitudes that promote their ongoing use of organic fertilizer. This has to do with how farmers feel about utilizing organic fertilizer. It is important to change farmers' attitudes toward reusing organic fertilizer in order to foster these experiences. Therefore, as an attitude, it needs to make educational programs such as environmental awareness program and benefits of using organic fertilizer program for farmers to change their attitudes.

The ability of a farmer to conduct a behavior that they are capable of directing with intention toward farming activity is assessed using perceived behavior control using

organic fertilizer. Farmers are more likely to use organic fertilizer repeatedly as a result of the increased perceived behavior control that using it results in lower production costs and higher farm income. There are many traditional techniques to make organic fertilizer by farmers. Therefore, farmers should learn how to make organic fertilizer and make organic fertilizer themselves.

The majority of farmers indicated that they would be interested in reusing organic fertilizer. It is discovered that there is a statistically significant correlation between fertilizer usage and intention to reuse organic fertilizer. Therefore, the use of organic fertilizer has a considerable impact on the decision to reuse organic fertilizer. Therefore, farmers should keep using organic fertilizer since it will benefit them and others in the long term because of these advantages.

5.3 Needs for Further Research

Future research should focus on a related study that expands its reach to include all of Myanmar's regions because this study is limited in its ability to cover the whole of the country. This study only focuses on the intention to reuse organic fertilizer and makes use of the theory of planned behavior model. It would therefore be excellent if subsequent research could also be based on the alternate approach. The organic farming sector as a whole is not included by this study. Therefore, additional studies on the intention to reuse organic fertilizer in Myanmar are needed to examine the entire organic farming sector. In recent years, research on organic farming has grown significantly in underdeveloped nations, but more focused research is still required to advance and advance organic farming. Today's sustainability concerns frequently center on the environment, nature, animal welfare, product quality, and health, all of which are essential components of organic farming. Therefore, further research is required to create specialized, feasible, and sustainable organic agricultural methods. Research on the use of organic fertilizer should first be conducted on the basis of organic farming villages in the Ayeyarwady region, and from there to the township level and to the regional level to cover the entire country.

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