

Examining Market Factors and Impact on the Small Farmer Sustainability Performance in the Market

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ABSTRACT

Responding to global issues in food security, poverty, and unemployment, researchers have proposed agriculture sustainability to unravel this matter. For small farmers to remain relevant and competitive in the market, this study reviews the sustainability dimensions as a measurement: social, economic, and environmental. These dimensions of sustainability are also known as the triple bottom of sustainability. However, there is still little study assessing small farmers' performance based on these three sustainability pillars. Through attaining small farmer sustainability performance, it can lead to sustainable agriculture. However, a lack of competitive advantage has caused local small farmers to remain stagnant and unsustainable in the market. Hence, this conceptual paper proposed the basic market model: product, price, promotion, and place strategy relevant to the small farmers to withstand economic, social, and environmental sustainability. It is believed can contribute to agriculture development and small-scale farmers' growth.

Keywords: Small farmer, Sustainability, Market model, Sustainability Performance

INTRODUCTION

Food safety and security, environmental sustainability, and social issues are global concerns in agricultural production and have become one of the main agendas nowadays (Tran & Goto, 2019). The United Nations has prioritized sustainability of agriculture to address the issues in the food chain, poverty, and unemployment (Nematollahi & Tajbakhsh, 2020). Sustainability in agriculture is the best-practised technique for planting, ensuring continuity of activities, continuous access to economic opportunities, social well-being for people, and maintaining the environment (Arumugam, Karim, & Mohd, 2018). A study defined sustainability as an activity that meets a specified set of multidimensional conditions over time, which are ecological stability, economic viability, and social equity (Santos, Schmidt, Mithöfer & Dagmar, 2020).

Small farmers have been identified as an agent to achieve sustainable agriculture to ensure consistency in food supply worldwide (Food Agriculture and Organization (FAO), 2018). As reported by the FAO (2018), nearly 500 million small farmers contributed to food production and sustained adequate food supplies for people worldwide (Lowder, Raney & Skoet, 2016). Small farmers could promote sustainable agriculture and serve as important agents for natural resource conservation, and tackle poverty and hunger (Santos et al., 2020).

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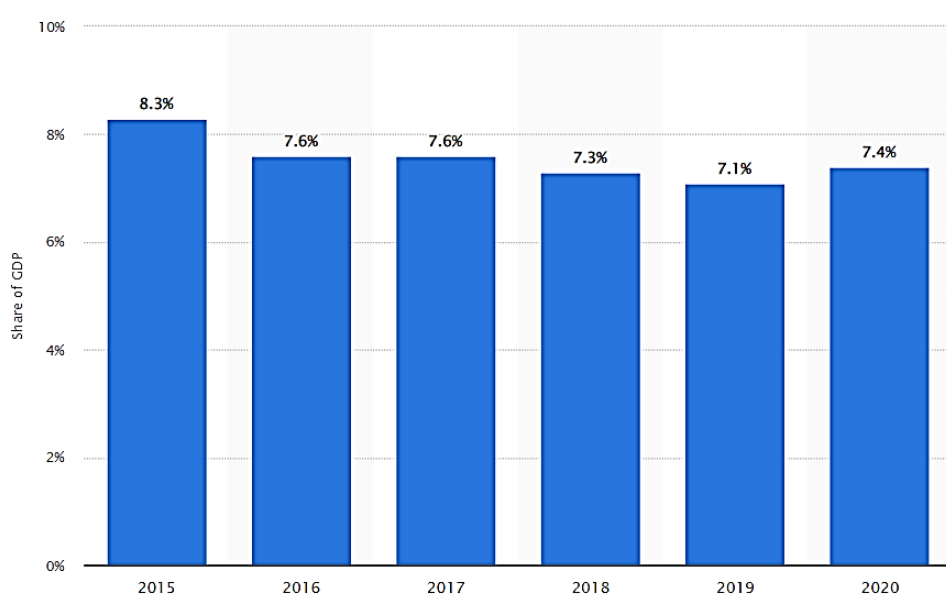
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However, rapid agriculture changes to modern agriculture have become a challenge for small farmers to sustain their market performance. The Covid-19 pandemic has affected the agriculture sector and small farmers are among the most affected. The market was shut down and the movement restrictions that imposed by the government affected the small farmer's food supplies to the market. Small farmers are known to have lower productivity on average than large-scale farmers, and in most countries, their incomes are less than half compared to the large-scale farmers (SDG Report, 2020). Previous studies (Santos et al., 2020; Vian et al., 2020) suggest that small farmers change their way of working to survive and sustain their participation over time, as the markets continue to develop in ever more demanding directions.

The role of a small farmer in agriculture has led to Malaysia's economic growth. The agriculture landscape in Malaysia is divided into two groups: food crops and industrial crops. Most of the small farmers are involved in the agriculture type of crops. However, the contributions of agriculture to Malaysia's gross domestic product have gradually decreased (Figure 1). Apart from the shifting of economic structure from agriculture to manufacturing, the small farmer's sustainability in the market is found to be the reason for Malaysia's agriculture GDP to be unstable. If this matter is prolonged, it would impair food security in the future as the role of small farmers is vital to achieving sustainable agriculture (Santos et al., 2020). Small farmers need to remain competitive in the market and emphasize their strength as critical contributors to their success (Braka et al., 2021). Hence, a competitive advantage is an underlying business model, which is the basic market model.

Figure 1: Malaysia's GDP Share of Agriculture



Researchers proposed to enhance their marketing mix strategy as a business model for a small-scale business. Marketing mix strategies are found important for the farmers in creating customer value and enhancing their marketing performance (Khaswarina et al., 2021; Li et al., 2022; Lim et al., 2019; Lim et al., 2022; Yuan et al., 2023). There are several market factors debates for the small farmers to be on the market viable. Market factors including product, price, promotion, and location are significant to farmers' performance and affect their marketing channel decisions (Ochieng, Veetil & Qaim, 2017). Small farmers' participation in

a profitable marketing channel is influenced by the ability to meet consumer expectations. For example, implementing sustainability standards may become more desirable and feasible for a more significant number of farmers. Besides, it can be encouraged as an objective to meet the desires of farmers (Meemken, Veettil & Qaim, 2017). Due to the high standard demanding food crops market requirements, small farmers in developing countries find it challenging to meet market factors, such as the standard set by retailers and supermarkets (Thomas & Vink, 2020). Many farmers are moving away from the lucrative marketing channel because of difficulty fulfilling the market requirement.

The above discussion led the current study to explore the marketing mix model toward the sustainability performance of small farmers through their economic, social, and environment. This paper contributes to the expansion of the range of previous academic papers in terms of sustainability and marketing mix models, specifically in the production of small farmers in Malaysia.

PROBLEM STATEMENT

The global food crisis since 2008 had led many companies to invest in supporting the development of small-scale farmers. Farmers are identified as the prime mover for sustainable agriculture (FAO, 2018); however, the measurement of their sustainability is still at an early stage and not ultimately measured. Previous studies focused on industrial agriculture and there are limited studies that focused on small farmers, especially those in rural areas (Vian et al., 2020). To measure sustainability performance, there are three pillars to be studied which are economic, social, and environmental. Research reveals that previous studies mostly measure farmers' sustainability from economic sustainability followed by environmental sustainability. Meanwhile, there is less focus on social sustainability analysis (Jia, Peng, Green, Koh & Chen, 2020).

The Malaysian government has also targeted small farmers to be the agents in pursuing its goals of improving the food industry's efficiency in Malaysia. This effort has been stated in many policies such as National Agro-Food Policy (NAP) (2011-2020). However, despite all these policy designs, the livelihoods of many small farmers, and sustainability remain uncertain (Hassan et al., 2020). In addition, Malaysian Insight (2020) addressed that this matter occurs due to the inefficiencies of small farmers in agricultural production related to product quality, distribution networks, and the overall supply chain. According to DOA (2020), farmers find it difficult to move their products to market, especially during pandemics and this has contributed to food waste. Likewise, Purnomo, Otten, and Faust (2018) emphasized that marketing issues are among the reasons for the livelihoods of the small farmers being stagnant and uncertain.

Several gaps in the body of knowledge have been found concerning the market mix and its effect on sustainability performance. Ineffective marketing techniques that are related to product standards, pricing, market accessibility, and promotion strategies have a negative impact on the agriculture industry (Malaysian Insight, 2020). According to Tey Arsil, Brindal, Teoh, and Lim (2017), there is no exact factor for the market mix as the preferences will change according to the regions of the small farmers. The market strategy is influenced by the geography of the farmer. Most past literature discusses the implementation of the market model and sustainability from the perspective of large enterprises, however, there are limited discussions on small and medium businesses (Kowalska, 2020). The four factor of market model were not empirically studied at the level of the farmers. Past literature were only

employed a products factor to be studied rather than all the market factors (Ngarava & Mushunje, 2019).

In summary, there is a fresh perspective of findings on the situational gap mentioned. Market factors are significant factors in small farmer sustainability. There was a gap in the previous studies on the measurement of sustainability especially on the performance of small farmers in the supply chain. Due to these differences, this present study investigates the market mix strategy which is the product, price, place, and promotion that affects small farmers' sustainability specifically in economic, social, and environmental performance.

LITERATURE REVIEW

This study intends to examine the impact of a market factor as the variable on the small farmer's sustainability performance by assessing their economic, social, and environmental sustainability practice in the market.

Underpinning Theory: Market Mix Model

A vast amount of literature has discussed the marketing model, which could be profitable and discuss the role of this model in retaining and acquiring customers (Berger & Nasr, 1998). The marketing mix has been translated from the market model based on the single P (price) of microeconomic theory (Chong, 2003). McCarthy (1964) presented the "marketing mix," often known as the "4Ps," by putting the marketing strategy into reality (product, price, place, and promotion). According to research, the market model has expanded into a few Ps, such as physical evidence, partnership, promise, process, and principles (Pomering, 2017). With the extension of many factors in the marketing mix, a study argues that the factor of marketing mix depends on the business category involved (Chen, 2018), the location of the business (Ngarava and Mushunje, 2019) and the four market factors remain in light (Fitriah et al, 2019). Furthermore, to attain long-term sustainable performance, Kotler (2011) recommended rethinking the marketing mix (product, pricing, location, and promotions). According to research, the marketing mix element is linked to company performance, implying that this approach will impact the firm, whether favourable or otherwise. Success in strategizing the product, pricing, place, and promotion factor can enhance business performance and profitability in the short and long run (Bahador, 2019).

Few studies have employed the market factor to examine sustainability performance (environmental, social, and economic) in the agriculture industry, specifically concerning green tea small-scale farmers (Tran & Goto, 2019; Sadollah et al., 2020), fruits producers (Enjolres & Aubert, 2018), vegetable producers (Mazibuko et al. 2019), and crops producers (Mazibuko et al. 2019; Meemkan, Veettil & Qaim, 2017). Past studies highlight the importance of addressing issues of market factors impacting the performance of farmers (Mariyono, 2019; Bosono& Gebresenbet, 2018; Ochieng et al., 2017). There are limited studies (e.g., Morgan et al., 2017; Bosona & Gebresenbet, 2018; Tefera et al., 2020) adopting the four-marketing mix model (product, price, place, and promotion) in studying its effect on the sustainability performance. Hence, this justified for this paper to employ the marketing mix model in examining sustainability performance from the perspectives of small farmers. By enhancing the marketing mix model of small farmers, it is expected to achieve their competitive advantage and sustain their performance in the market (Andersson et al., 2015; Yan, Teheggen, & Mithofer, 2017; Anh et al., 2019). This theory has been extensively used in the context of large

businesses and offers excellent justification and validity. It also explains many variances in agriculture within the context of farmers' market strategy. Moreover, Bahador (2019) concludes the importance for local and small companies to understand the market mix model to ensure business sustainability. Hence, this paper will discuss how the market model factor can contribute to a farmer's sustainability performance in the market from the issues above.

Sustainability Performance

The World Commission on Environment and Development (1987) defined sustainability as "the ability to meet present demands without jeopardizing future generations' satisfaction." The three conventional economic, social, and environmental pillars have long been contested as the definition of sustainability, according to research by Enjolras and Aubert (2018). There are many indicators proposed by the past study in each sustainability dimension. The sustainability indicators change based on the object measure and the geographical area of a research. A recent study indicates it is better to use the whole sustainability (social, economic, and environmental) dimension to assess small rural properties (Vian, Setti & De Lima, 2020). This study underlined many valuable indicators for evaluating the performance of rural properties and is expected to apply the indicators proposed as this model is obtained through qualitative review. On the other hand, Sadollah, Nasir and Geem (2020) have studied the four dimensions that could affect sustainable development: social, environmental, economic, and energy and resources. This study argues that other conditions, such as minimizing energy costs and other energy-related goals, need to be considered, especially in Asia, as there are vast populations compared to Europe that can focus on sustainable building.

However, there is a need to consider the unit analysis when employing the number of sustainable dimensions. Vian et al. (2020) argue that using the three bottom lines of sustainable development from the perspective of small farmers would be relevant. Meanwhile, Santos et al. (2020) also accentuate a few indicators in assessing farmer sustainability performance. One interesting finding is that collective action participation is an effective strategy for farmers. It decreases transaction costs and enables greater access to information and knowledge, thus improving farmers' sustainability. Vian et al. (2020) and Santos et al. (2020) emphasize the three dimensions to evaluate sustainability performance of farmer and rural properties. However, Santos et al. (2020) study examine and focus more on small farmers' collective action membership and its effect on these three sustainability dimensions.

Nevertheless, studies aiming at the three dimensions in Malaysia are still premature. Previous studies are limited to economic sustainability, but this is insufficient to explain the overall sustainable performance. Assessing farmer performance through economic dimensions does not entirely represent the farmer's ability to sustain in the market. Their performance assessment needs to be done in other dimensions, such as environment and social sustainability. Arumugum (2018) alleged that sustainability, environmental, and social sustainability contribute to Malaysia's sustainability. Hence, this calls for the need to investigate the impact of market factors which are product, price, place and promotion on sustainable performance by considering the three dimensions in the Malaysian context.

Economic Sustainability

Economic sustainability mainly measured the profitability by comparing revenue and cost or income variables such as farm income. It is where the farmers' productivity measures the ability of production factors to generate output (Latruffe, Diazabakana, Bockstaller, Desjeux, Finn, et

al., 2016). On the other hand, Bottani, Tebaldi, Lazzari, and Casella (2019) define economic sustainability as generating substantial economic growth, generating income, and employment for the population's livelihood. The recent research proposed to assess economic sustainability are developing the study of economic sustainability. It is proven by a recent study that examines economic sustainability at monetary income by indicating land and labour productivity (Santos et al., 2020). This study finds that the economic impact is more substantial than the social and environment. While on the other hand, Vian et al. (2020) class the economic dimension into economic and financial efficiency, degree of indebtedness, costs, infrastructure, and business and income diversification. Hence, this paper reviewed the economic sustainability as the ability of the farmers to sustain their monetary income and productivity.

Social Sustainability

Social sustainability has been identified as ensuring equity in quality of life and human well-being conditions, regardless of class and gender (Capone et al., 2016). In their paper, Latruffe et al. (2016) relate social sustainability to people, two main categories have been distinguished in this study. Firstly, the level of the farm community which related to the well-being of farmers and their families. Secondly, social sustainability is measured through the level of society on society's demands, depending on its values and concerns. On the other hand, a recent study indicates that social sustainability falls into three categories, which are the access to goods and services by stating the well-being of the farmers and the quality of rural life through the sufficiency of survival, satisfaction as a farmer, and perception to continue as a farmer. Also, social equity is measuring the monetary value that each family member must have for survival and livelihood (Santos et al., 2020). Different from Vian et al. (2020), who have examined education, sociocultural values, social inclusion, health and safety, food security, job, rural exodus and continuity, management, and administration as the indicator for social sustainability and proposed an expansion of instruments to include more rural property. Social sustainability has identified many hands to assess the ability of small farmers to cope with their well-being and people. Thus, this study is expected to enhance the small farmers' sustainability performance in the market by performing well socially.

Environmental Sustainability

Many environmental indicators were proposed in reviewing the literature due to the many themes covered and society's attention to this dimension. According to Latruffe et al. (2016), environmental sustainability has been more interesting than economic and social sustainability. A recent study indicates environmental sustainability by preserving the natural ecosystem by reducing polluting emissions and waste production (Bottani et al., 2019). Santos et al. (2020) indicate soil management's environmental sustainability by identifying the farmer's position regarding soil protection and erosion problems on the farm. This paper also estimates climate change trends and biodiversity conservation practices by examining pesticides and fire (Santos et al., 2020). Slightly similar to Vian et al.'s (2020) study also indicates environmental pollution, water, soil, and biodiversity/land use. This study has proposed the environmental sustainability indicator more precisely than Santos et al.'s (2020) study. By measuring the ecological sustainability performance of small farmers, this study comprehensively assesses the market factor and their contribution to sustainability. This study assumes that achieving environmental sustainability could create a competitive advantage in the small farmers' market.

Market Model and Sustainability Performance

Kotler (2011) stated that facilitating the traditional 4Ps such as product, price, place, and promotion could give more significant sustainability outcomes. Pomeroy (2017) indicated that Kotler (2011) emphasizes that market factors need to be more holistic and focus more on environmental sustainability. The study believes that social and economic will be impacted by focusing on the ecological dimensions. The three sustainable dimensions are known as the triple bottom line and are interrelated. This urge for the upcoming study to study the 4Ps with the sustainability pillars. Small farmer in many developing countries is known to be in poverty. Low-intensity farming, low yields, limited market access and insufficient profits are the issues faced by small farmers and this has prevented them from investing further in their sector (Meemkan & Bellemare, 2019). Market factor serves as a foundation and a result of economic progress. It encourages the input and output elements of the agricultural market to be linked. Employing the market factor in assessing the marketing capabilities is based on the size of the business. Hence, the marketing mix was found significant with the small size of the business of farmers as a previous study by Fitriah et al. (2018) that employed the marketing mix in assessing the performance of small farmers in fisheries.

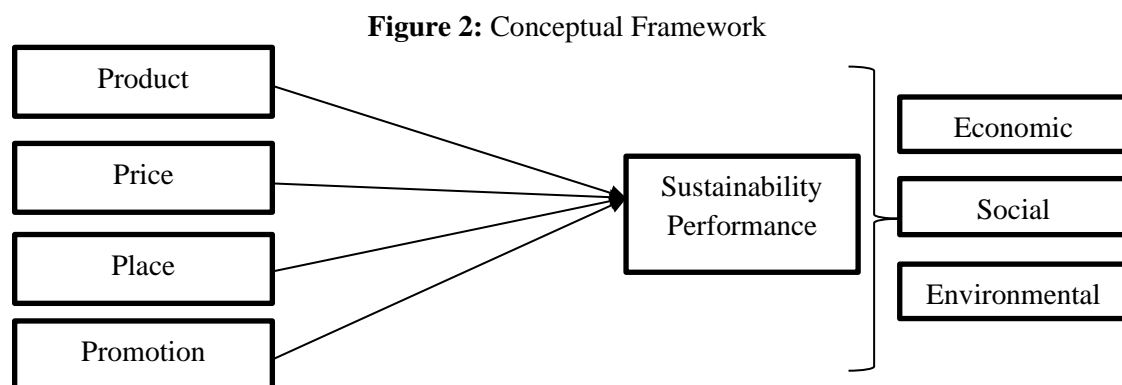
A variety of products and value-added products might enhance the output and be more marketable. Great product production may give the farmers higher economic and social benefits (Kyomugisha et al., 2018). In addition, Luna et al. (2019) asserted that environmental sustainability is linked with product quality. However, farmers need to manage their cost-efficiently as producing quality products and being concerned with the environmental sustainability practice can be costly. Coppola and Ianurio (2019) indicate that the farmer who produces a quality product is achieving social sustainability by practising environmental sustainability. Efficiently producing their products will impact the good health of the public and the environment. It is supported by a recent study by Vian et al. (2020), which found that economic, social, and environmental sustainability are interrelated. Overall the product quality are related to small farmers ability to produce a food crops that is accepted by market as a quality product may enhance the farmers economic, social and the environment performance.

The price factor is among the highest market factors rated as a reason for farmers to sustain (Siddique et al., 2018). The reason to exclude small farmers from the agribusiness market is due to a lack of market price information. As a result, they cannot interact with other market players and secure their credit (Yan et al., 2017). This study highlighted that insufficient price information would lead small farmers to dominate the other supply chain members. This matter has also made the farmers the price takers in the supply chain and willing to sell their products at any price without considering their production cost. By having this issues it will impact the farmers economic sustainability and their wellbeing also affected. Based on Rezaei, Ortt and Trott, (2018), to get a reasonable price, there is a need for the farmers and the middle person to negotiate so that the cost of production can be minimized. Any cost incurred in their transaction also drives them to sustain themselves in the market (Rezaei et al., 2018). Therefore, the price should include the cost calculation along with the productions that occurred. The cost of public goods should not be subsidized, but the cost can be reduced when more efficiency is utilized (Martin & Schouten, 2012; Pomeroy, 2017). Higher cost with low income might not motivate the small farmer to invest on their farm. By not investing in developing their farm it might impact the quality of their food crops, the land management and environment sustainability of the farmer. However, a limited study discusses the price market factor with specific sustainability dimensions.

The place factor becomes a relevant dimension to be examined because many small farmers have been dropped from a profitable market channel due to their place distance from the market. A long distance with a not good infrastructure have contribute to the cost of the small farmers. Market distance has also become a challenge for them to remain sustainable. Farmers' sustainability is affected by the high cost incurred during the transactions and the cost of moving their products to market. However, Mariyono (2019) argues that farming's distance and the place did not affect agriculture's profitability. The researcher indicates that by employing efficient transport, farmers have overcome the gap. Thus, this tactic did not impact the farmer's benefit because they have customers who will be picked up during harvesting and can share the transportation cost. To sustain by selling their production, the small farmers are left with no choice. They have to share the cost of transportation or be willing to cut the price of their productions. A little discussion has been conducted between the small farmer's place factor and its impact on the social and environmental dimensions. The study by He et al., (2019) reveal that long distances from the market may affect the environment, such as carbon footprint and the cost of paying middle people to supply the product. Besides, the long distance also hinders the farmer's access to credit since the potential of information asymmetry and cost occurs (Van & Khuong, 2020).

According to Ngenoh et al. (2019), promotion is a technique that may help small farmers become more effective by overcoming competition with high-value agro-food chains. To become valued, small producers of indigenous vegetables in Africa must advertise their farming operations. Thus, it may assist small farmers in getting a competitive edge by emphasizing their high-value crops. Ngenoh et al. (2019) and Musara et al. (2018) implicitly describe promotion as a factor for small farmers' economic sustainability, but neither study details the other two aspects of sustainability: social environment and environmental sustainability. Coppola and Ianuario (2018) explore how sustainable promoting practices have influenced fruit and vegetable producers' environmental and social well-being. Farmers will promote their environmentally friendly production practices, and safe food consumption will affect societal well-being. This study also shows that genuine environmental concerns of farmers are per social norms.

There are many discussions encompassed on the market factor as the factor for the small farmer sustainability. However, the realm of assessing sustainability from each dimension, especially on environmental and social sustainability, is still inadequate. Therefore, this study is expected to investigate further how the factors mentioned in maintaining small farmer sustainability ultimately in economic, social, and environmental performance. Figure 2 shows the proposed conceptual framework for this paper.



CONCLUSION

In conclusion, the fast-growing market might impact economic, social and environmental sustainability of small farmers in the market. Not being competitive enough in the market may affect their sustainability. Nowadays, technological advancement has made the small farmers' performance to be below par as the small farmers are lack with facilities, market knowledge, and infrastructure issues in their places. This study strengthens the idea of past research to examine the farmer's market factor as the tools for their competitive advantage in their performance. Maintaining market factors such as products, pricing, promotion, and place of farmers will impact their market performance. Besides, evidence of this study is expected to provide a theoretical contribution to help researchers gain in-depth knowledge of the small farmer farming situations and the sustainability practice factor. In addressing the food security issues, unemployment issues, and poverty issues, it is essential to highlight the small farmers as the contributors to minimizing this problem (Feliciano, 2019).

Food crops are confronted with a growing product demand globally as well as in Malaysia. this pressure small farmers to improve their performance. Small farmers have many insufficiencies, especially those in rural areas, this includes infrastructure issues, literacy issues, and market knowledge. Thus, understanding the basic market model such as product, price, place, and promotion might become fundamental for them to sustain their performance. A recent study by Nematollahi and Tajbakhsh, (2020) has outlined that the main lines of future research for sustainable agriculture are related to pricing, production, and transportation. Even though few studies have highlighted this topic, there is still insufficient attention from researchers and scholars. Considering all the evidence, the market factors are relevant to be studied and related to sustainability performance. This study proposed another variable to view in a future study. The relationship of marketing variables will be the other element to be investigated to strengthen their marketing strategy. Hence, it will be an advantage for small farmers to sustain their performance in the market. Besides, highlighting the transaction cost as the barrier will holistically explain the sustainability performance of the farmers.

IMPLICATION

In general, this research has several significant contributions to the theory. Previous studies have been limited in applying the marketing mix factor to the sustainability study. The marketing mix factor is known to be an important strategy for small-scale business; however, this theory has not been widely applied to sustainability studies. The majority of earlier studies have concentrated on industrial agriculture and the economic viability of small farmers. The sustainability of small farmers has been underlined as a key issue as it has an impact on other sustainability issues including food security, a low level of self-sufficiency, poverty, and others. This paper may enhance the small farmer sustainability performance measurement overall. As the previous study only examined the ability of small farmers to support themselves economically, it disregarded the performance of the other sustainability pillars such as their social well-being and environment. This paper may assist small farmers in better understanding how to gain a competitive advantage in their marketing strategy. Small farmers have typically been associated with a lack of product, pricing, location, and promotion-related marketing strategies. Small farmers may be encouraged to compete in the supply chain if they are aware of how to improve the market through their product, pricing, place, and promotion strategy. The ability to manage their marketing strategy might enhance their economic, social, and environmental sustainability. Besides, understanding the market factor that could trigger

market inefficiency will control the transaction cost. Transaction costs are known as a barrier that could impact the sustainability of small farmers in the market (Santos et al., 2020).

In this light, understanding the factors will provide insight to farmers and the farmers associations and the government. By identifying the key factor regarding marketing, the farmers association can address the key factor to have an effective marketing strategy. Hence the marketing strategy is known to be a tool to enhance the sustainability performance of small farmers which will directly contribute to the achievement of sustainable agriculture. This paper will also impact the credit policy for small scale farmers. By having the advantage to obtaining any credit from a financial institution may motivate small farmers to aim for the bigger picture in their food crops farming. Financial supply should make their terms and condition easy and flexible. Besides reaching out to small farmers in rural areas will be a great strategy for their farming activities to develop. The small farmers' product development plays an important role in sustaining their social performance. Producing quality food crops require high cost and getting an opportunity to obtain credit from a bank will motivate small farmers to produce quality food crops.

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