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Assessment of Farmers' Readiness to Face Challenges of the Post-Movement Control Order (MCO) in the Central Zone of Malaysia

Jasmin Arif Shah[1,2], Nur Izzatie Mazlan[1], Nur Bahiah Mohamed Haris[1]

[1]Department of Agricultural Technology, Faculty of Agriculture, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia, [2]Institute for Social Science Studies, Universiti Putra Malaysia, Putra Infoport, 43400 Serdang, Selangor, Malaysia
Email: jasmin.arifshah@upm.edu.my

Abstract

Farmers' readiness to manage agricultural issues determines their capacity to anticipate, prevent, and adapt to upcoming threats and shocks. Farmers' readiness to face challenges by the Movement Control Order (MCO) causes the new challenges faced by the agricultural community. On the 18th March 2020, the Malaysian government implemented the MCO to control the spread of COVID-19 pandemic cases in Malaysia. Restriction of movement affected the agricultural sectors as farmers were unable to manage their farms and sell their products routinely. There is miscommunication between farmers and distributor where all agriculture transportation activities ceased during MCO, thus affect the dump of excess of vegetables. Farmers face various obstacles to crop diversification, such as lack of capital, lack of support, marketing problem, and production risks. Thus, this study aimed to determine the factors that influenced farmers' readiness to face challenges post-MCO phase within the central zone of Malaysia. The study used quantitative procedures. The study employed a simple random sampling method and utilized a survey methodology consisting of six sections of questions. A total of 85 vegetable farmers were selected as respondents. The data for this study was collected through two methods, namely online data collection via Google Form and manual data collection via face-to-face approach. The findings indicated that technology, implementation, leadership, and decision-making skills significantly show a moderate to a high level of farmers' readiness to face challenges post-MCO. The highest factor contributing to farmers' readiness is decision-making skill. The adjusted R2 value of 0.533 implies that the decision-making skill explains about 53% of the variance in the farmer's readiness in this study. Hence, this shows that decision-making skills was the major empirical findings can lead to farmers' empowerment and readiness to face challenges post-MCO. This study points out that there is a need to address the research on information and communication technology (ICT) factors that influence the farmers' readiness to face risk to empower and boost agricultural productivity.

Keywords: Farmers' Readiness, COVID-19, Technology Skill, Implementation Skill, Leadership Skill, Decision-Making Skill, Agriculture Extension, Assessment

Introduction

Farmers' readiness in facing challenges is crucial in maintaining successful agricultural practices. Challenges to the agriculture sector in Malaysia can occur in numerous ways, such as natural disasters in the form of floods, earthquakes, landslides, droughts, and human-made disasters. At the end of 2019, the world began to face a new type of challenge with the emergence of a novel coronavirus (SARS-CoV-2) or generally known as COVID-19.

The first case surfaced in Wuhan, China (Wang et al., 2020) before spreading fast globally. The first COVID-19 outbreak in Malaysia was detected in January 2020 and soon affected the agricultural sector. The Malaysian government imposed a nationwide lockdown or MCO to curb the spread of COVID-19 by restricting the movement of the people and enforcing social distancing (Prime Minister's office, 2020) during the outbreak. Until now, the MCO was extended and it was known as MCO3. Every MCO having their special term and condition. Due to the increase number of Covid-19 cases, it was predicted to be prolong for many months from now.

The agricultural sector witnessed slow growth during the MCO1. People were instructed to stay at home and were restricted from going out freely. These strict restrictions exerted negative impacts on the agricultural sector as there were limited movement and technical support from extension agents to farmers. Farmers faced difficulties as they were left with limited stock and inputs of fertilizers, herbicides, pesticides, and other farm tools

Because of the disrupting the agriculture supply chain during MCO1, the farmers could not operate their businesses and faced a significant loss of product and income. The movement control order restricted the flow of agriculture products from farmers to wholesalers, and from wholesalers to retailers and from retailers to customers. In addition, during the MCO1 period, customers also limited and avoided to do the shopping activities, while at the wholesalers and retailers' side, they also reduced the quantity of ordered products due to decrease demand. It resulting imperishable agriculture products like fruits and vegetables was being dumped since it cannot be transported and marketed. Due to this condition, some of the farmers were forced to change their marketing strategies and channels as they could manage their farm and sell their products as usual. This explained condition or problems occurs only in MCO1 and it was managed to be resolved in MCO2. For the current MCO3, there are no problems about the supply chain of agriculture inputs at all since the government give approval to the agriculture sector activities to be operated as usual.

However, the MCO keep continuing from week to week and from month to moth until now and the farmers need to be ready physically, mentally and financially. This pandemic Covid-19 was categorized under the health risk. This risk could not predict before by us particularly government, agriculture agencies and even the farmers themselves to be the one of the huge impacts to agriculture sector. Thus, the farmers' readiness in facing these new challenges and risk is very critically important. They need to rearrange, be prepared with new strategies in operation, selecting the new marketing methods and setup the backup in financial etc. The connection with the service provider agriculture extension agencies also disrupted due to MCO. Since it was happening, the farmers at majority make their own decision and judgement without waiting for advisory service from agriculture agencies. Thus, the readiness to overcome the problem caused by MCO required the certain skills possess by the farmers. They

also need to be prepared to make decisions and implement self-thought quick actions to survive the challenges.

Therefore, a need arises to conduct this study to determine farmers' readiness to face challenges imposed by the COVID-19 outbreak. The factors that contributing to farm planning and decision making will be also identified.

Literature Review

COVID-19 Pandemic

COVID-19 is the short-form of coronavirus disease 2019. The first outbreak began in December 2019 and was detected in China (Singhal, 2020). COVID-19 is considered a catastrophic calamity that rapidly spread globally unexpectedly. COVID-19 is transmittable via respiratory droplets and other organs such as the eyes, mouth and nose (Wang et al., 2020a). In Malaysia, the first case of COVID-19 was detected in January 2020. The case was found on an infected non-local tourist who visited Singapore and subsequently travelled to Malaysia (Sundarasen et al., 2020). According to (Sundarasen et al. (2020), the first case of COVID-19 in a Malaysian was detected on 4th February 2020. Two days later, another Malaysian was reported as COVID-19 positive. The infected person had contracted the coronavirus through transmission via the respiratory system.

By March 2020, the local COVID-19 positive cases started increasing. A few weeks later, Malaysia was recorded as the South East Asian nation with the highest number of positive COVID-19 cases (Sundarasen et al., 2020). The sudden outbreak resulted from the main cluster in Sri Petaling, Kuala Lumpur, where scores of people, including foreigners, had participated in a four-day spiritual gathering event (Barker, 2020). During this four-day event, COVID-19 was transmitted among the participants. The virus infected many participants from Malaysia, Brunei, Cambodia, Indonesia and other neighboring countries (Yasmin, 2020). According to (Hossain, 2020) the 'new norm' and 'new normal' - as some are calling it - affected the agriculture activities in many Asian countries. FAO (2020) stated that those who are hardest hit by the COVID-19 outbreak are the poorest, most vulnerable populations as well as smallholder producers whose household incomes and food security are at risk.

Movement Control Order (MCO) in Malaysia and Its Impact to Agriculture Sector

A rapid rise in the number of cases exceeding 500 COVID-19 positive cases in Malaysia was reported in March. The situation forced the Malaysian government to impose MCO on 18th March 2020, aiming to prevent the rapid spread and transmission of coronavirus within the population. Implementation of MCO encompassed the restriction of movement, banning social gathering, restricted travelling, and closure of education sectors, government and private premises (Prime Minister's office, 2020). The imposed lockdown and social distancing helped reduce interactions with infected people due to strict isolation over a long time. These unprecedented rules and drastic measures undertaken by the Malaysian government had significantly altered the people's daily livelihood (Sundarasen et al., 2020). On a macro level, the closure of businesses and services, along with the travel and movement controls will have outsized impacts on private consumption and business investment (Aziz et al., 2020). In addition, the enforcement of MCO potentially inflicts severe consequences on the domestic demand of fish and seafood as a result of food service closure, halt in tourism and change in consumer purchasing pattern (Waiho et al., 2020).

The primary production sectors were severely affected by the measures such as lockdowns, strict isolation and social distancing, although the strict measures implemented reduced the

occurrence of new COVID-19 cases in Malaysia. According to (Man, 2020), stated that the agricultural sector is hugely affected by the COVID-19 outbreak. Farmers were unprepared to face the COVID-19 outbreaks' effects and the MCO implemented by the Malaysian government. The pandemic has affected agricultural activities and halted the link between farm productions and final consumers (Poudel et al., 2020). The shrinkage of farmers' income and the observed deficiencies in essential inputs (including farm labor) are the two more obvious direct impacts of COVID-19 on agricultural production (Lioutas & Charatsari, 2021).
During MCO, the food supply chain was disrupted because logistics services and transportation of agricultural produce slowed down and sometimes stopped due to restriction of movement. According to [41], there is miscommunication between farmers and middlemen where during MCO all delivery have ceased and cause the dumping of vegetables which had to be discarded due to no buyers. The MCO affected the agriculture economy indirectly by changing consumer behavior and disrupting the production capacity and food distribution (Vaghefi, 2020).

Agricultural Extension

Oakley & Garforth (1985) defined agricultural extension as an educational process that teaches farmers to improve their agricultural productivity besides developing their knowledge and skills in handling agricultural activities. The definition of agricultural extension is a continuous educational process where farmers gain beneficial information and are guided in obtaining the knowledge, skills and attitudes. The farmers must implement and apply their knowledge on agricultural information and technology effectively to improve agricultural productivity (Rahim, 2008; 2010).
According to Ali et a (2018), agricultural extension services in Malaysia are offered by the public sector through the Department of Agriculture and private sectors. The extension agencies are responsible for disseminating knowledge, useful information and new technologies from extension agents to farmers.
Extension services provided by extension agents are vital for farming communities as they require immense assistance in agricultural activities (Ali et al., 2018). The success of extension services is heavily dependent on the skills of extension agents in disseminating information to farmers (Rahim, 2008; 2010). The effect of Covid-19 caused a large number of farmers to lose their source of income due to the paralysis of production and marketing chain support due to MCO. Thus, the role of extension agents is very important in helping this farmer to rise again even after Covid-19 ended (Samsudin, 2020). Agricultural Extension and Advisory Service (EAS) systems play an indispensable role at the frontline of the response to the pandemic in rural area, in order to adapt to the emergency context within the government regulations, EAS providers need to rapidly change their way of operating (FAO, 2020). Therefore, extension agents must be highly educated with the latest agricultural knowledge and advanced technologies, competent in doing work and qualified to disseminate information to farmers are different globally where it is categorized according to different standards. For example, in certain nations, extension services are used to deliver the national directives to rural areas. Supported by [54] extension agents can play an effective and efficient role in raising awareness of COVID-19 in rural areas to reduce the spread of the pandemic, while ensuring that rural producers have relevant and accurate information and services to support their agricultural production.
Agricultural extension programmes encompass a broad agricultural area (Oakley & Garforth, 1985). Agricultural extension services have provided many programmes that aimed to

improve the farmer's productivity. The beneficial value of the program is knowledge transmitted to farmers through research findings and information flows. Information and knowledge gained through agricultural extension programmes will empower the farmers, resulting in assistance when taking action and reacting to decision-making.
Therefore, extension agents need to carry out their roles in accordance with the organizational goals and fieldwork based on the guidelines developed (Toborn & Harvesting, 2011). Hence, agricultural extension services effectively provide the essential elements needed by farmers for improving their agricultural productivity.

Technology Skill
Technology skill is the farmers' ability to understand and apply agricultural equipment knowledge to boost their production and productivity. According to Lioutas & Charatsari (2021) it is critical to strengthen farmers' ability to fundamentally alter their operational paradigms to ensure the sustainability of their enterprises when external perturbations occur. Chi (2008). stated that farmers with a high education level would prefer to adopt technology for better agricultural practices. Farmers who exposed with technology can promote better agricultural yields that can reduce the dependence of middlemen (Samsudin, 2020). However, farmers who lack technology skills may prefer traditional agricultural practices as they are not confident and do not know how to use technology in handling yield production (Chi, 2008). Due to their low education level, the farmers may feel that it is difficult to understand and implement new technology and practices in agricultural activities (Haris et al., 2018).
Smart farming technologies emerged as a set of tools aimed at leading to agrifood systems transformation by helping farmers improve farm efficiency and overcome their reliance on human labor (Lioutas & Charatsari, 2021). The application of technology by farmers results in a production boost and improved farm productivity. According to (Olagunju, 2019), other studies found that technology skills are positively significant with work performance. From (Fabeil et al., 2020), some of the farmers are starting to switch to online sales either through social media and mobile application to save their operating cost during MCO. However, practices like online selling and home delivery were initiated, however, elderly consumers and individuals with chronic diseases or special needs who are more susceptible to infection are not always able to use these services (Lioutas & Charatsari, 2021). Hence, technological skills can facilitate farmers in reducing challenges through learning and adopting technology (Kahan, 2008). The widespread use of digital technology in community can cause the boosting transaction between farmers and consumers respectively (Rashid & Hassan, 2020). Thus, farmers need to undertake efforts to learn new technology usage and gain higher knowledge on their farming activities (Abdullah & Samah, 2013).

Implementation Skill
Implementation skill is the ability to undertake tasks in preparation for problem-solving (Tiraieyari et al., 2010). Implementation refers to the planned efforts to obtain evidence-based programs or known dimensional practices applied through effective change strategies (Damschroder et al., 2009). Implementation skill is necessary to accomplish strategic objectives and goals.
Farmers need implementation skills to perform good farming management and practices. An excellent implementation plan and management can assist farmers in reducing the loss of agricultural products and gain increased revenue. A high level of knowledge is crucial to

sustaining implementation skill towards good agricultural practices (Mondal, Haitook & Simaraks, 2014).

Sulong (2016) indicated that implementation is significant and highly contributes to work performance. The efficient and accurate execution of tasks time is important in implementation skills (Drucker, 2017). Research findings of past studies show that implementing and monitoring are significant with work performance (Nordin, 2017). Extension agents are responsible for disseminating the technology to the farmers for suitable technology implementation (Altalb et al., 2015).

The knowledge shared by extension agents influences the ability of farmers to practice and implement technology in farming activities. Baqutayan et al (2017) revealed that most farmers implemented technology in their farms after gaining knowledge and skills by joining a program to boost their agricultural production.

Leadership Skill

Leadership skill is the ability of a person to lead the vision and focus as well as identifying goals for improved farm productivity and efficiency (d'Arros, 2007). Farmers with leadership skills will comply with planning and organizing farming management to become more disciplined. During pandemic, leader who can handle the crisis need to have a character that can unite members of the organizations and have a calm attitude as well as think well before giving any response (Yazid, 2020). Leadership skills can be developed by leadership education programmes that aim to build farmers' knowledge and leadership skills to become potential leaders (Martens & McLean, 2002). Besides that, Ishak & Manaf (2020) found that farmers with moderate leadership levels heavily depend on a middleman in their farm management. Farmers are unable to lead themselves and manage their own farms with moderate knowledge and skills. Add by Rahayu et al (2020), the traditional leaderships are not suitable in nowadays especially during COVID-19 crisis.

Martens & McLean (2002) highlighted that the program's impact in Canada after 25 years is that the economic returns have significantly increased, while the agricultural industry has strengthened. The findings by Isah (2018) proved that leadership skills are significant to the performances' potential. It is supported by Olagunju et al (2019); Isah (2018) analyses that revealed that leadership skills are positive and significant towards work performance.

Decision-making Skill

Decision-making is a key action in management. Farmers should have sufficient required agricultural information to draw an effective decision (Kahan, 2008). One of the several economic factors that play a crucial role in decision-making by farmers is long-term security (Ketteler, 2018). The farmers can decide to changes their old traditional way of marketing their product by marketing direct goods to the consumer's home via digital app. Educated farmers will inhibit wrong decision-making. Farmers with decision-making skills can understand the consequences of the decision made through their own skills. On the other hands, farmers who lack decision-making skill will have poor time management as they are unable to manage time properly in gathering information and consume more time for decision-making, resulting in delayed final action (Ali et al., 2018).

Demiryurek et al (2008) stated that agricultural knowledge is an important factor for better agricultural management. The knowledge aids farmers in making good decisions concerning the knowledge and information provided by extension agents, researchers and others. Olagunju et al (2019) revealed that decision-making skill is significant to work performance.

Similarly, Motolani et al (2017) proved that decision-making skill is a significantly needed skill in human resources development. According to Drucker (2017), when something unexpected happens, leaders need to be able adapt to sudden changes, improve the decision making, creative, decision through collaborative action and trustworthiness. Thus, farmers must possess decision-making skill to improve farm performance and boost productivity.

Farmers' Readiness to Face Challenges Post-MCO

Farmers cannot avoid challenges in the future because stated that risk remains a part of agriculture. Farmers were ill-prepared during the MCO and were heavily affected by the impact of the COVID-19 pandemic [8]. Farmers must be prepared to face challenges post-MCO period. Therefore, farmers need to have alternative ways to deal with risk for initial protection. Farmers need to possess skills beyond their basic knowledge in farm management and production (Fitch, 2007).

According to Ishak & Manaf (2020), highly educated farmers have farm management skills and knowledge. They implemented good agricultural practices in their farms and further improved their productivity through future planning. Farmers' readiness correlated with farmers' knowledge as higher knowledge level led to higher farmers' readiness (Fairuz et al., 2018).

The education level of farmers is significantly related ($p < 0.05$) to planning implementation in managing agricultural challenges (Ali et al., 2019). This finding was also supported by (Haris et al., 2013), who found that knowledge positively correlates with farmers' productivity. Both findings proved that a relationship exists between farmers' educational level and their risk management plan implementation.

George et al (2007) asserted that education and practices significantly improve farmers' knowledge and skills for better risk management. These farmers demonstrated that improved knowledge and skills led to agricultural sustainability. Subsequently, the farmers are ready to face future challenges. Therefore, it is crucial for farmers to gain new knowledge and skills in order to be prepared for future challenges in the agricultural sector.

Methodology

This study had employed quantitative methods by using structured questionnaires comprising of six sections. Section A was made up of close-ended questions. Sections B, C, D, E and F, were composed of six-point scale type questions. The questionnaires were distributed online and manually to 85 selected vegetable farmers in the central zone of Malaysia. The respondents were chosen using a simple random sampling technique. Additionally, the data were analyzed using IBM SPSS (version 25) software.

The level of technology skill, implementation skill, leadership skill, decision-making skill, and farmers' readiness to face challenges post-MCO was described using the range levels comprising low, moderate and high. A brief calculation was done to categorize the response level based on the six-point scale data (1 to 6). The calculation is [(6-1)/3]. Therefore, the minimum mean score for the low level is one, and the maximum mean score is (1 + 1.67) = 2.67. The mean score for the moderate level begins from 2.68 to 4.35 after the addition of 1.67. For the high level, the mean score ranged from 4.36 to 6.00.

Results and Discussion

Demographic Profile of Respondents

The respondents' age groups were divided into five groups, namely 20 to 29 years old, 30 to 39 years old, 40 to 49 years old, 50 to 59 years old and finally, 60 years old and above. As shown in Table 1, 22 farmers from the 30 to 39 years old age group represented the majority of respondents with 26.0%. Farmers from 20 to 29 years of age group made up 22% of the respondents, whereas farmers from the age group 40 to 49 years old and 50 to 59 years old represented 21% and 20 % of the respondents. Meanwhile, the lowest representation of respondents were farmers above 60 years old with 11% representation.

The findings indicated that most farmers were from the adult age group, while old-aged farmers were the least. According to the respondent's gender categorization, most respondents were men, with 78 respondents or 91.8%. Only seven respondents, or 8.2%, were women. Although men dominate vegetable production in the central zone of Malaysia, there are women participation in agricultural production.

Table 1
Profile of Respondents

Profile	Frequency	Percentage (%)
Age		
20-29	19	22
30-39	22	26
40-49	18	21
50-59	17	20
≥60	9	11
Gender		
Male	78	91.8
Female	22	8.2

Level of Technology Skill, Implementation Skill, Leadership Skill, Decision-making Skill and Farmers' Readiness to Face Challenges Post-MCO

4.2.1 Technology Skill

The level of technology skill was evaluated based on their perspective. There were three categories of level, which are low, moderate, and high. In technology skill, a high level was obtained with a higher percentage of 51.8%. The low level scored the least percentage with 1.2%. The mean level of technology skill was 4.35, indicating a high level.

Table 2
Level of Technology Skill

Level	Frequency[1]	Percentage (%)	Mean	Standard Deviation
Low (1.00 – 2.67)	1	1.2	**4.35**	**0.74**
Moderate (2.68 – 4.33)	40	47.1		
High (4.34 – 6.00)	**44**	**51.8**		

[1] Note: 1-strongly disagree, 2-disagree, 3-not agree, 4-quite agree, 5-agree, 6-strongly agree

Implementation Skill

Table 3 shows the level of implementation skill. The mean score for implementation skill is 4.28 indicating a moderate level. Besides, according to the analysis of each level, the moderate level scored the highest percentage with 56.5%. The low level obtained the lowest percentage at 2.4%. The findings demonstrated that the dimension of implementation skill is at a moderate level according to most respondents' perceptions.

Table 3
Level of Implementation Skill

Level	Frequency[1]	Percentage (%)	Mean	Standard Deviation
Low (1.00 – 2.67)	2	2.4	**4.28**	**0.76**
Moderate (2.68 – 4.33)	**48**	**56.5**		
High (4.34 – 6.00)	35	41.2		

[1] Note: 1-strongly disagree, 2-disagree, 3-not agree, 4-quite agree, 5-agree, 6-strongly agree

Leadership Skill

The level of leadership skill is exhibited in Table 4. The high level of leadership skill obtained the highest percentage with 63.5%, whereas the moderate level scored 35.3% in second place. The low-level leadership skill has the lowest percentage with 1.2%, as the frequency is 1. The mean level of leadership skill is 4.63, indicating a high level. The findings show that the dimension of leadership skill is at a high level according to the perception of the majority of respondents.

Table 4
Level of Leadership Skill

Level	Frequency[1]	Percentage (%)	Mean	Standard Deviation
Low (1.00 – 2.67)	1	1.2	**4.63**	**0.76**
Moderate (2.68 – 4.33)	30	35.3		
High (4.34 – 6.00)	**54**	**63.5**		

[1] Note: 1-strongly disagree, 2-disagree, 3-not agree, 4-quite agree, 5-agree, 6-strongly agree

Decision-making Skill

The level of decision-making skill is shown in Table 5. The high decision-making skill level has the highest percentage with 57.6%, while the moderate level is ranked second place with 41.2%. The low-level decision-making skill has the lowest percentage with 1.2%, as the frequency is 1. The mean level for decision-making skill is 4.54, indicating a high level. The findings show that the dimension of decision-making skill is at a high level according to the perception of the majority of respondents.

Table 5
Level of Decision-making Skill

Level	Frequency[1]	Percentage (%)	Mean	Standard Deviation
Low (1.00 – 2.67)	1	1.2	**4.54**	**0.81**
Moderate (2.68 – 4.33)	35	41.2		
High (4.34 – 6.00)	**49**	**57.6**		

[1] Note: 1-strongly disagree, 2-disagree, 3-not agree, 4-quite agree, 5-agree, 6-strongly agree

Farmers' Readiness to Face Challenges Post-MCO

Table 6 shows the level of farmers' readiness to face challenges post-MCO. The mean score for farmers' readiness is high, with a 4.49 score. Forty-six respondents responded highly on the level of farmers' readiness is high level, followed by a moderate level with 39 respondents. According to the respondents' perception, the findings show that farmers' readiness to face challenges post-MCO period established that most respondents are at a high level. From the respondents' perception, the findings revealed that the respondents are ready to face the challenges post-MCO by applying knowledge and skills to identify problems, plan, make decisions, and implement activities.

Table 6
Level of Farmers' Readiness

Level	Frequency[1]	Percentage (%)	Mean	Standard Deviation
Low (1.00 – 2.67)	-	-	**4.49**	**0.84**
Moderate (2.68 – 4.33)	39	45.9		
High (4.34 – 6.00)	**46**	**54.1**		

[1] Note: 1-strongly disagree, 2-disagree, 3-not agree, 4-quite agree, 5-agree, 6-strongly agree

Regression Analysis

The regression analysis was conducted to identify the relationship among independent variables (technology skill, implementing skill, leadership skill and decision-making skill) to determine the strongest variables that influence the dependent variable (farmers' readiness to face challenges post-MCO). Table 7 below shows the estimated coefficient for the farmers' readiness model.

The decision-making skill was found to be significant with the farmers' readiness in facing challenges post-MCO period. The p-value obtained for the relationship was 0.038, which is less than 0.05. The highest beta value found was 0.329 for decision-making skill compared to other skills. Thus, the findings proved that the decision-making skill affects the farmers' readiness to face challenges of the post-MCO.

Furthermore, technology, implementation, and leadership skills did not significantly impact farmers' readiness to face the challenges of the post-MCO period. The p-values for the three skills were more than 0.05 at 0.386, 0.449 and 0.132, respectively, as shown in Table 7. Hence, technology, implementation and leadership skills failed to contribute to the farmers' readiness in facing post-MCO challenges.

Table 7
Estimated Coefficient (Farmers' Readiness to Face Challenges Post-MCO)

Model	Coefficients			*t*	Sig.
	Unstandardised Coefficients		Standardised Coefficients		
	B	Std. Error	Beta		
(Constant)	0.573	0.409		1.402	0.165
Technology skill (X_1)	0.156	0.179	0.137	0.871	0.386
Implementation skill (X_2)	0.145	0.190	0.131	0.761	0.449
Leadership skill (X_3)	0.245	0.161	0.222	1.523	0.132
Decision-making skill (X_4)	**0.329**	**0.155**	**0.317**	**2.115**	**0.038**

Y = 0.573 + 0.329 (X4)

An equation model for the farmers' readiness to face challenges post-MCO in the central zone of Malaysia was established with the variation in percentage. As shown in Table 8, the regression analysis produced the value of adjusted R2 at 0.533. Hence, the decision-making skill explained 53.3% variance towards farmers' readiness to face challenges post-MCO in the central zone of Malaysia accounted for by the equation model. The remaining 46.7% is explained by the other factors excluded by this study. It shows that farmers in the central zone of Malaysia were capable of decision-making.

It can be concluded that farmers' decision-making skill is the most significant contributing skill toward farmers' readiness to face challenges post-MCO. In addition, the study has proved that decision-making skills are crucial and significant in human resource development skills (Fitch, 2007). The application of technology in the farmers' farms resulted in better agricultural management that helped to boost the farms' production and productivity.

In addition, decision-making is a crucial action in agricultural management. Thus, farmers who made ineffective decisions affect their agricultural practices, operations and productions (Ketteler, 2018). In addition, decision-making skills also require farmers to think objectively and make the right decision with confidence to achieve better performance.

Table 8
Model Summary

R	R^2	Adjusted R^2	Std. Error of the Estimate
0.745	0.556	0.533	0.57428

Discussion

The results showed that the level of technology skill, leadership skill, decision-making skill and farmers' readiness to face challenges post-MCO are at a high level. Only implementation skill is at a moderate level. All independent variables show positive and significant correlations with farmers' readiness to face challenges post-MCO.

The highest factor contributing to the farmers' readiness in facing post-MCO challenges is the decision-making skill. The decision-making skill leads to farmers' empowerment and readiness to face challenges post-MCO period. Thus, farmers and extension agents must highlight technology, implementation and leadership skills to increase farmers' readiness in facing challenges and boost their productivity.

Agriculture extension agencies must improve the farmers' skills to prepare them to manage risk in future. Therefore, an agricultural extension program that aims to produce resilient and advanced farmers with their own skills is essential. The first recommendation is the implementation of the Agricultural Technology Exploration program, one of the proposed development programs to improve farmers' technology skill.

This program assists farmers to improve their technology skill through experience-based learning taught by experienced supervisors in the agricultural field. This program should involve theoretical learning and incorporate practical learning that provides farmers with the exposure and opportunity to experiment with technology to increase their knowledge in new technology like smart farming.

Moreover, the findings suggested that relevant agencies should create agriculture educational programs or training according to the skills required by farmers to prepare them to face post-MCO challenges. In this training program, extension agents are required to train farmers to manage their agricultural affairs independently without the assistance of others. Farmers should be provided with the opportunity to act on their own. Thus, the farmers will be more experienced in undertaking agricultural affairs and analyze the problems or shortcomings in the implementation system.

Conclusions

COVID-19's health crisis is clearly having a significant impact on the economy as a whole, as well as on the agriculture sector. This study analyzes the farmers' readiness to face challenges of the post-movement control order (MCO) from Malaysian perspective. It was carried out as part of a quantitative study with selected vegetables farmers.

This study has shown that, even in the presence of a pandemic breakout, farmers are ready and prepare doing their utmost to maintain high levels of performance. Farmers trying to equip themselves with information, knowledge and skills in order to solve challenges they faced while conducting agriculture activities.

Farmers' decision-making is strongly reliant on information, expertise, and abilities. As a result, farmers will efficiently employ their information and knowledge in agricultural activities in order to sustain and improve their agricultural productivity. On the other hand, farmers realize that they can no longer depending on extension agents support and can empower themselves to make a right decision.

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Data Availability Statement

The data presented in this study are available upon request from the corresponding author.

Conflicts of Interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

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