Risk Management Literacy Level Among Oil Palm Smallholders in Malaysia

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Abstract

Risk management literacy is very important in influencing an individual's decision-making when taking preparatory steps to handle anticipated risks. This includes oil palm smallholders who are constantly exposed to various types of risks. Therefore, this study aims to analyze the level of risk management literacy among oil palm smallholders in Malaysia. The data of the study was obtained from the online questionnaires distributed to oil palm smallholders using a random sampling method. The data obtained from the final sample of 200 smallholders were analyzed to examine the level of risk management literacy among oil palm smallholders using a mean score analysis. The results found that the risk management literacy level among oil palm smallholders in Malaysia is at a moderately high level. Furthermore, the mean score for the preference for saving instead of expenditure was the highest i.e. 4.40, indicating that smallholders possess high awareness of the importance of saving as one of the tools for risk management. The study' findings allowed relevant authorities to formulate new programs, such as training and awareness campaigns for risk management, on a continuous basis. This could assist smallholders to prepare for any potential risks and subsequently create sustainable sources of income.

Keywords: *risk management, literacy level, oil palm smallholders, palm oil sustainability, Malaysia*

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Introduction

The oil palm industry is one of the largest sectors contributing to the Malaysian economy. Based on the statistics from the Department of Statistics Malaysia, the agricultural sector contributes as much as 7.1% to the total gross domestic product (GDP) of Malaysia in 2021, with the palm oil industry being the largest contributor (DOSM, 2022). The export value of the agricultural sector in 2021 increased to RM154.5 billion (2020: RM118.7 billion), and 35.2% of this value was contributed by the palm oil industry (DOSM, 2022). In addition, the oil palm industry is also an important element in the socio-economic development of the rural population. According to Ahmad et al. (2020), the palm oil industry in Malaysia has provided employment opportunities to rural people, and subsequently improved their standard of living (Azhar et al., 2017; Ayompe et al. 2021; Mohd Hanafiah et al. 2022).

In Malaysia, there are 650,000 smallholders consisting of independent smallholders and organized smallholders (e.g. FELDA, FELCRA, or RISDA, government agencies that support oil palm and rubber smallholders) (Senawi et al., 2019: Ahmad et al., 2020). In general, these oil palm smallholders have a farm area of less than 50 ha and cultivate with other smallholders; usually, family members are the main workforce. Oil palm smallholders are highly exposed to occupational safety and health risks (such as accidents, injuries, and wild animal threats), natural disaster risks, and other risks such as animal risks and palm oil price volatility. As most private oil palm smallholders depend solely on the

sale of oil palm fruit as their main source of income, exposure to risk can affect their source of income. Therefore, the knowledge and understanding of risk management are critical for oil palm smallholders to be better prepared to address various uncertainties in the future.

Risk management is a systematic process that identifies and assesses an organization's or individual's exposure to losses, and then chooses and implements the most appropriate techniques to deal with that exposure (Redzuan et al., 2022). It is also a proactive measure used to reduce potential losses by reducing the likelihood of a risk occurring, as well as its impact if it does occur. Risks occur beyond our expectations, and therefore, we must take proactive measures to avoid any unanticipated events. This risk can be reduced through understanding good risk management strategies. Risk management can anticipate uncontrollable losses and reduce future losses. The current necessity of risk management possess great significance in effectively managing potential losses. Furthermore, it can seize the opportunity to reduce costs. Furthermore, various risks that frequently occur and threaten a person's life are caused by personal health or financial problems. In fact, risk management has a significant impact on waste control and cost reduction.

Therefore, this study aims to analyze the level of risk management literacy among oil palm smallholders in Malaysia. Risk management literacy refers to the understanding of how we want to deal with risks that arise. According to Ishak et al. (2021), the oil palm smallholders in

Malaysia tend to avoid risk as their knowledge on risk management is limited. In fact, oil palm smallholders in Malaysia face a number of risks and challenges, such as unpredictable weather and inconsistent oil palm prices (Siti-Dina et al., 2023). Furthermore, oil palm smallholders may face risks, such as plant diseases, which can affect the productivity of oil palm production and cause these oil palm smallholders to lose their source of income. In addition, risks in the agricultural production process cannot be eliminated because the agricultural process is highly dependent on nature (Ajah et al., 2022). Murphy et al. (2021) also explained that the challenges faced by the palm oil industry in the 2020s are inconsistent palm oil prices, the increase in new and existing pests and diseases, and a general lack of climate resilience, particularly related to high temperatures and increasingly erratic rainfall patterns, as well as downstream issues related to supply chains and consumer sentiment. Therefore, this risk management literacy study will facilitate and support the management of the risks faced by oil palm smallholders. Additionally, this study can contribute to relevant authorities, such as the MPOB, in raising awareness and knowledge on risk management, so that effective measures can be taken to minimize risk exposure among oil palm smallholders. It will also improve and organise the management of the Sustainable Oil Palm Growers Cooperative (KPSM) better and more organized.

The structure of this article is as follows, which briefly discusses the introduction of this study. It also demonstrates previous research on risk management literacy among smallholders. The methodological section follows, in which the researchers discuss the methods used to obtain data analysis results from the respondents. The examined research findings are presented in the study's findings and discussion. Finally, the conclusions and recommendations for future research are presented in the final section. Moreover, oil palm smallholders contribute a significant portion of oil palm production and play an important role in economic development (Rahman, 2020).

Risk management and oil palm smallholders Research on risk management in the context of oil palm smallholders is limited. According to Ishak et al. (2022), the performance of oil palm smallholders is often influenced by four main factors, namely the high cost of maintaining plantations and trees, problems, and labour costs of foreign labour. Foreign labours have increasingly powerful in demanding high wage for the work performed, couples with various compliance of palm oil fruit transportation regulations and the volatile market price of palm fruits directly affects the performance of oil palm smallholders. Therefore, appropriate policies are needed to address these issues, including strategies to reduce the uncertainty of commodity prices, foreign labour wage pressure, and flexibility of palm fruit transport vehicle regulations.

Furthermore, Hua and Choy (2019), who studied the sustainability of palm oil cultivation among smallholders in Sri Aman, Malaysia, and found that the palm oil industry has negative impacts, such as environmental pollution. Consequently, the Occupational Safety and Health Committee of KOKO Biotechnology Research Center has developed several essential agricultural practices manuals.

These manuals aim to establish a management system that promotes good agricultural practices and aligns with standards and laws to control and reduce dangers, risks, and impacts on agricultural production activities, particularly palm oil production. The implementation of this management system is expected to enhance productivity, ensure the safety and well-being of employees, maintain food safety, and contribute to environmental protection.

Abu Bakar and Md. Sum (2021) conducted a study on risk management in agriculture. The investigation stemmed from the persistently low contribution of agriculture to the Malaysian economy, despite extensive government support in the form of subsidies. This underperformance is attributed to the agricultural sector's susceptibility to a myriad of natural and unnatural risks, including unpredictable weather, pests, diseases, wildlife attacks, and fluctuations in input and output prices. The findings revealed that agricultural risk management comprises two primary categories: agricultural project risk and agricultural production risk. Agricultural project risk refers to events leading to project failure originating either from farmers or project operations. Farmer-induced risks include attitudes, lack of knowledge or training, absence of cooperation among farmers, and resistance to subsequent procedures. Business-related risk factors involve farm management issues, insufficient funds or capital, limited agricultural activities, failure to achieve key performance indicators (KPIs), and non-compliance with procedures. Furthermore, agricultural production risks have the potential to result in low production yields. Consequently, farmers employ risk management strategies, such as diversifying production, maintaining detailed agricultural activity logs, acquiring farm management skills and knowledge, diversifying farmers' tasks, and implementing comprehensive risk management policies to mitigate these risks. In fact, Yovi et al. (2023) emphasized that global warming has led to new risks associated with heat in the forestry and agriculture sectors. Prolonged exposure to high temperatures poses a significant threat to the health of workers in both sectors, particularly in the forestry sector. Yovi et al. (2023) also highlighted the crucial role of knowledge regarding to heat-related risks in influencing cautious behavior among forestry workers and paddy farmers.

Moreover, Ajah et al. (2022), in their study on risk management practices among farmers in Nigeria, revealed less encouraging agricultural results due to poor weather conditions and an incomplete transportation system. These factors have become the major risks faced by farmers. In managing these risks, farmers cultivate mixed crops, engage in mixed farming, make off-farm investments, and purchase crop insurance to protect against any losses. Similarly, Todor et al. (2020) highlighted that adverse weather conditions could lead to a negative impact on agricultural yields, as this sector is more vulnerable to weather conditions than other industries. Therefore, crop and livestock insurance are necessary for farmers to alleviate financial difficulties through insurance compensation if unforeseen adverse events occur.

In addition, Birthal et al. (2021) highlighted in their study that smallholders in developing countries are more exposed to climate risks. Most of them rely solely on traditional

measures to minimize the effects due to a lack of access to institutional risk management measures, such as agricultural insurance. The results of this study revealed that risk reduction is the most preferred loss prevention strategy by smallholder farmers, followed by risk management and risk transfer strategies. The study concludes that improving farmers' access to agricultural information and financial institutions is crucial to increasing their acceptance of technology adoption and the use of modern technology. This aligns with Hansen et al. (2019) findings, supporting that climate change poses a major risk to smallholders and livestock farmers, especially in dry climate countries. Therefore, climate risk management can minimize the impact of these risks through access to available technologies, credit, and market operations, contributing further to reducing rural poverty rates.

Murrja et al. (2022) also found that market risk management plays a crucial role in business development in the agricultural sector. Using qualitative and quantitative methods, their study assessed market risk in intensive poultry breeding and production operations for egg and meat marketing. Farmers were found to have limited control over the market forces that determine commodity prices, and seasonal or economic fluctuations lead to over-or underproduction. Other factors, such as changes in consumer income, economic stability, government trade policies, and exchange rates, affect the demand for goods. Therefore, among the measures needed to respond to these risks, farmers must implement a robust marketing strategy and handle their financing to ensure that business objectives are not compromised.

Ali et al. (2019) concurred that climate change, manifested in natural disasters, has adversely affected the farming community and stakeholders not only in Malaysia and Asia but also globally. Therefore, farmers' knowledge of agricultural risk management is crucial to the decision-making process. The study examining Malaysian farmers' perceptions of their knowledge of agricultural risk management found that farmers in the research area have awareness about the social and economic impacts of agricultural risk management. However, their knowledge of planning, cost analysis, and proper concepts and approaches in agricultural risk management is still limited. Furthermore, the study found that knowledge of agricultural risk management among farmers was at a moderate level.

Furthermore, Hussain et al. (2018) discovered that middlemen face risks posed by smallholders, producers, and buyers of palm oil, including lending to smallholders, market competition, threats to climate and weather, and a lack of resources and capital. The use of risk management strategies and business policies will help middlemen manage risk more efficiently.

Prior research highlights the crucial role of risk management literacy in effectively handling various potential risks. Nevertheless, there is a noticeable gap in the exploration of risk management practices, specifically among smallholders. Drawing from existing studies, it is evident that smallholders need to maintain constant awareness of risk management to anticipate and address potential challenges, such as crop damage. The absence of robust risk management measures not only adversely affects

smallholders themselves but also has broader consequences for others. Hence, it is imperative for smallholders to acquire knowledge and an understanding of effective risk management strategies.

Methods

Sampling procedure and data collection A survey was used to determine the level of risk management literacy among oil palm smallholders. The sample for this study was Malaysian oil palm smallholders, of which there were approximately 650,000 smallholders in 2019 (Ahmad et al., 2020). According to Roscoe (1975), the appropriate sample size is between 30 and 500. This study employed random sampling, as it involves oil palm smallholders across Malaysia. This method is less biased and provides a high level of generalization compared to other sampling types (Sekaran & Bougie, 2013).

Furthermore, an online questionnaire was used to collect data in this study. According to Mohanty et al. (2020) and Ilieva et al. (2002), online questionnaires can reduce costs and time. This technique was found to be suitable for a wide geographical area, such as this study which focuses on respondents who are smallholder farmers across Malaysia. Accordingly, online questionnaires were distributed to oil palm smallholders to obtain data. A total of 232 respondents answered the questionnaire, but 32 of them were incomplete and discarded. As a result, the final sample for this study consists of 200 respondents. The questionnaire format developed in this study consists of two parts, namely Part A and Part B. Part A consists of 14 questions that were designed to determine the background of the respondents, while Part B contains 25 questions which aimed to examine the level of risk literacy among oil palm smallholders. It is measured using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Each question in Part B was developed based on the risk literacy concept, which refers to an individual's ability to handle an event that may occur in the future in an effective way (Gigerenzer, 2008). It includes risk communication, risk knowledge, risk attitude as well as developing required skills (Nikiforidou et al., 2012). Furthermore, the items in Part B were adapted from several previous studies (Safriyana et al., 2018; Abdullah et al., 2022; Nur Nadia & Nur Ain, 2022; Mulyasari et al., 2023), as research on risk management literacy among oil palm smallholders is limited. All collected data were tested to determine the level of reliability using Cronbach's alpha value, where a value greater than 0.7 indicates consistent results (Bond & Fox, 2015; Taber, 2018).

Data analysis Before the score analysis is carried out, the Cronbach's alpha test is performed to test the reliability of the instrument, i.e. the consistency and stability of a questionnaire or instrument. The goal of reliability is to determine whether a measure produces the same result when used to assess the same concept on the same respondents. This study then used a mean analysis to determine the level of risk management literacy among oil palm smallholders. This analysis explains the level of risk management literacy among oil palm smallholders. The advantage of this average score lies in the degree of validity of each of the following elements. The analysis is presented in the form of a table with

percentage, frequency, mean, and standard deviation.

The statistical package for social science (SPSS) was used to obtain means, frequencies, and standard deviations. SPSS transforms complex data into a form that provides information to explain a set of factors in a situation by arranging and adjusting the collected data (Sekaran & Bougie, 2013). This study is analysed descriptively, and the means obtained are interpreted according to the following categories, i.e. mean = 1.00 to mean = 2.00 is low, mean = 2.01 to mean = 3.00 is moderately low, mean = 3.01 to mean = 4.00 is moderately high and mean = 4.01 to mean = 5.00 is high based on the study by Nunnally and Bernstein (1994) as in Table 1.

Table 1 Interpretation of the mean value level of 5 level likert scale

Mean score	Level
4.01 to 5.00	High
3.01 to 4.00	Moderately High
2.01 to 3.00	Moderately Low
1.00 to 2.00	Low

Source: Nunnally and Bernstein (1994).

Results and Discussion

Respondent's descriptive analysis Table 2 shows the results of the descriptive analysis of 200 respondents in the study. Most of the respondents (61%) were men, and more than 66% of respondents were below 46 years old. It showed that most of the oil palm smallholders were relatively young. This study also revealed that a significant proportion of respondents hold a degree i.e., 37.5%, which suggests that oil palm smallholders in Malaysia were well educated. It is a good indication for the palm oil industry to attract the participation of well-educated growers to further improve farm management, including risk management, and subsequently improve their productivity. Furthermore, 104 respondents (52%) were full-time oil palm smallholders, while 96 respondents (48%) carried out oil palm cultivation activities on a part-time basis. This finding is comparable to Awang et al. (2017), which found that the majority of oil palm smallholders in Malaysia were full-time growers. In terms of MSPO certification, 48.5% of the respondents had obtained the certification and 13% were in the process of obtaining the certification. However, 38.5% of the respondents still did not have MSPO certification. These respondents might not understand the necessity of MSPO certification or are unaware of such requirements (Rahman, 2020).

In addition, the overall Cronbach's alpha value of the variable risk management literacy is 0.931, as shown in Table 3. Indeed, each item in the risk management literacy variable also had a value greater than 0.9, as demonstrated in Table 4. This suggests that all 25 items have high and good consistency, as Cronbach's alpha values of 0.7 or greater are considered sufficient and show consistent results (Nunnally, 1978; Nunnally & Bernstein, 1994; Bond & Fox, 2015). It was also consistent with Taber (2018) and Sürücü and Maslakçi (2020) who also examined the Cronbach's alpha

reliability value and reported a Cronbach's alpha range of 0.70 and above, representing the internal consistency of a study. The interpretation of Cronbach's alpha is summarized in Table 5.

Risk management literacy among smallholders The mean analysis in Table 6 showed that the overall mean score for risk management literacy was 4.00. It suggests that oil palm smallholders in Malaysia possess a good knowledge of the risk management principles in managing their palm oil palm cultivation activities as well as their financial management. Specifically, the mean score was between 3.445 and 4.400, which corresponds to a moderately high and high mean, respectively, with a standard deviation between 0.5931 and 0.9580. The mean scores for points 1 to 11 shows were moderately high level, ranging between 3.445 and 3.990, For points 12 to 25, the mean scores were at a high level, ranging from 4.010 to 4.400. The lowest mean was 3.445 for the item " I always follow the programs organised by MPOB to keep updated with the latest developments in the palm oil industry." This finding indicated that respondents were less interested in the programs organised by MPOB. This is supported by the findings of Azima et al. (2018), who discovered that some smallholders may not be interested in completing the training offered by MPOB. They were more interested in acquiring technical expertise from fertilizer retailers who often deal with them than MPOB representatives. As a result, they may lack adequate knowledge of good agricultural practices (GAP) emphasized by the MPOB, resulting in lower productivity and income (Mohd Suib et al., 2023).

The highest mean was on the item "saving is better than spending money on unnecessary things" with a mean of 4,400 and is at a high level. This demonstrates that the respondents were aware of good saving practices. The respondents were conscious of the importance of saving to ensure survival, increase household welfare, and reduce poverty levels, as discussed by Ankrah Twumasi et al. (2020). Moreover, the agricultural sector is constantly exposed to various risks, requiring smallholders to be prepared for any eventuality. However, the findings of this study differ from the results of previous studies (e.g., suddin et al., 2020; Ugwuja & Onwuachu, 2020), which found that awareness of saving money among some smallholders is still low, exposing them to various scams and dealing with financial risk situations. Although oil palm smallholders had a positive perception of the importance of saving, it's not necessarily influenced their saving behaviour. Other factors such as financial capabilities, social backgrounds, economics condition or psychological factors should be also considered. For instance, Wongmonta (2023) found that financial capabilities influenced saving bahavior in Thailand, while Felipe (2019) highlighted the impact of economics crises on saving behaviour. Therefore, this study provides useful insights into smallholders' perceptions of the importance of saving, while also acknowledging the complex interplay of various factors that may influence smallholders' actual saving behaviours.

Table 2   Part A (Respondents background)

Respondents characteristics	Profile	Numbers	Proportion (%)
Gender	Male	120	61
	Female	80	39
Age	<20 years old	12	6
	20−35 years old	90	45
	36−45 years old	31	15.5
	46−55 years old	45	22.5
	56 years old and above	22	11
Nationality	Malay	176	88
	Indian	3	1.5
	Chinese	3	1.5
	Natives of Sabah/Sarawak	15	7.5
	Indigenous people	3	1.5
Status	Single	100	50
	Maried	88	44
	Single parent	12	6
Education	Primary school	19	9.5
	Secondary school	54	27
	STPM/Diploma	50	25
	Degree	75	37.5
	Masters/Ph.D	2	1
Monthly income	Below RM500	38	19
	RM500−RM999	17	8.5
	RM1000−RM1499	48	24
	RM1500−RM1999	35	17.5
	RM2000 and above	62	31
Household size	0	80	40
	1−3 people	65	32.5
	4−6 people	41	20.5
	7 people and above	14	7
Smallholders category	Private	108	54
	Land development scheme (e.g. FELDA, FELCRA, RISDA)	92	46
Land ownership	Private own	157	78.5
	Leased land	43	21.5
Employment status	Part time	104	52
	Full time	96	48
Farm size	< 3 ha	74	37
	3.1−6 ha	79	39.5
	6.1−10 ha	30	15
	10.1−15 ha	12	6
	>15 ha	5	2.5
Workers	Family members	124	62
	Other than family members	76	38
Number of workers employed	1−5 people	110	55
	6−10 people	14	7
	11−15 people	4	2
	16−20 people	2	1
	More than 20 people.	5	2.5
	Not related	65	32.5
MSPO certification ownership	Yes	97	48.5
	No	77	38.5
	In process	26	13

Table 3   Reliability score (Cronbach's alpha)

Variable	Number of item	Cronbach alpha
Risk management literacy	25	0.931

Table 4   Cronbach's alpha for each item

Items	Cronbach alpha
I always follow the programs organized by MPOB to keep update with the latest developments in the oil palm industry.	0.929
I am aware of the competition in the oil palm industry	0.928
I always update with current information about the palm oil market such as world palm oil prices.	0.930
The price and demand for palm oil fluctuates all the time.	0.929
I am well aware of the probability of agricultural losses due to unanticipated events.	0.929
I completed required training before getting involved in oil palm cultivation.	0.929
I have attended courses related to occupational safety and health organized by government/private/MPOB agencies.	0.930
Daily work in oil palm plantations is exposed to various risks that may cause injuries.	0.930
I provide all necessary and appropriate tools for agricultural activities such fertilising and poisoning.	0.927
Organic fertilisers are more environmentally friendly than chemical fertilisers.	0.928
I am aware of the right posture for the body when working in the oil palm plantation.	0.929
I always clean the farm to avoid the attack of wild animals.	0.928
Pest control in oil palm plantation is performed on a regular basis to reduce losses.	0.928
I only deal with licensed and trusted middlemen in the sale of palm fruit to avoid being cheated.	0.930
I understand the importance of risk management in one's life.	0.927
I am well aware that we are always exposed to risk.	0.929
I made financial plans to reduce the risk to myself and my family.	0.926
Risks can be managed with good financial management.	0.928
Saving is better than spending money on unnecessary things.	0.929
I am always prepared in a financial aspect to manage potential risks.	0.926
I have long-term plans to deal with unexpected situation.	0.928
I understand and aware regarding agriculture related insurance plans.	0.928
Takaful/life insurance is essential to prepare for unexpected situation.	0.928
I am aware that life insurance/takaful can help reduce financial burdens in the event of an accident.	0.929
Life insurance/takaful is one of the tools to manage risk.	0.930

Table 5 Cronbach's alpha score

Cronbach's alpha score	Reliability
0.9–1.0	Good, effective at a high level of consistency
0.7–0.8	Good and acceptable
0.6–0.7	Acceptable
< 0.6	The item needs to be refined
< 0.5	The item needs to be dropped

Source: Bond and Fox (2015).

Table 6   Mean and standard deviation

Items	N	Standard deviation	Mean score	Level
I always follow the programs organized by MPOB to keep update with the latest developments in the oil palm industry.	200	0.8950	3.445	Moderately high
I am aware of the competition in the oil palm industry	200	0.7720	3.795	Moderately high
I always update with current information about the palm oil market such as world palm oil prices.	200	0.6872	3.990	Moderately high
I completed required training before getting involved in oil palm cultivation.	200	0.9580	3.630	Moderately high
I have attended courses related to occupational safety and health organized by government/private/MPOB agencies.	200	0.9558	3.645	Moderately high
I am aware of the right posture for the body when working in the oil palm plantation.	200	0.8705	3.855	Moderately high
I have long-term plans to deal with unexpected situation.	200	0.7242	3.910	Moderately high
I understand and aware regarding agriculture related insurance plans.	200	0.8676	3.605	Moderately high
Takaful/life insurance is essential to prepare for unexpected situations.	200	0.7165	3.935	Moderately high
I am aware that life insurance/takaful can help reduce financial burdens in the event of an accident.	200	0.6973	3.965	Moderately high
Life insurance/takaful is one of the tools to manage risk.	200	0.6929	3.915	Moderately high
The price and demand for palm oil fluctuates all the time.	200	0.7700	4.010	High
I am well aware of the probability of agricultural losses due to unanticipated events.	200	0.6827	4.035	High
Daily work in oil palm plantations is exposed to various risks that may cause injuries.	200	0.7456	4.130	High
I provide all necessary and appropriate tools for agricultural activities such fertilising and poisoning.	200	0.6450	4.145	High
Organic fertilisers are more environmentally friendly than chemical fertilisers.	200	0.6679	4.310	High
I always clean the farm to avoid the attack of wild animals.	200	0.6755	4.145	High
Pest control in oil palm plantation is performed on a regular basis to reduce losses.	200	0.6679	4.190	High
I only deal with licensed and trusted middlemen in the sale of palm fruit to avoid being cheated.	200	0.7201	4.210	High
I understand the importance of risk management in one's life.	200	0.7137	4.135	High
I am well aware that we are always exposed to risk.	200	0.6180	4.255	High
I made financial plans to reduce the risk to myself and my family.	200	0.7659	4.080	High
Risks can be managed with good financial management.	200	0.6527	4.190	High
Saving is better than spending money on unnecessary things.	200	0.5931	4.400	High
I am always prepared in a financial aspect to manage potential risks.	200	0.6805	4.065	High
		Total	4.00	Moderately high

Conclusion

Oil palm smallholders in Malaysia often face various risks and challenges that can impact their productivity. Therefore, their understanding of risk management is very important, as it can influence their behavior in dealing with any challenges. Overall, oil palm smallholders in Malaysia are knowledgeable about the principles of risk management in their daily farming activities. The study also found that oil palm smallholders were less likely to participate in MPOB programs. Therefore, MPOB should aggressively encourage oil palm smallholders to participate in these programs to improve their knowledge of oil palm management, including effective risk management strategies. Moreover, oil palm smallholders in Malaysia perceived that engaging in savings is the best way to manage their finances for future needs. This study extends the existing literature on oil palm smallholders in terms of financial literacy. The findings suggest the importance of risk management knowledge and understanding to further improve oil palm smallholders' farm management. In fact, relevant agencies, such as MPOB, play an important role in developing an effective strategy to improve knowledge about risk among smallholders, as these oil palm smallholders contribute significantly to the Malaysia's agricultural sector and the GDP. As this study only focuses on risk management literacy, future study could extend this study by examining the impact of risk management literacy on the performance of oil palm smallholders.

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