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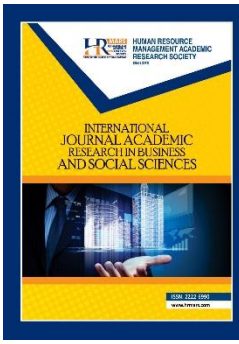
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Oil Palm Smallholders Level of Satisfaction towards Oil Palm Integration Programme

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Abstract
Oil palm integration is an activity that integrates oil palm with other economic activities such as crops and livestock. The oil palm integration practice was found to provide direct benefits to the oil palm smallholders such as increasing their income, diversifying crops and land use. Therefore, there is a diversity of patterns and practices of oil palm integration among the oil palm smallholders. However, the extent of oil palm smallholders' satisfaction with the oil palm integration practices have yet to be assessed. Whether there is a difference in the oil palm smallholders' level of satisfaction varies according to the implementation category, implementation cost and the income from oil palm integration. Hence, the main objective of this article is to measure the oil palm smallholders' level of satisfaction on the oil palm integration practices and to identify the differences in the level of satisfaction according to the implementation category, implementation cost and income from the oil palm integration. In addition, the oil palm integration patterns and practices will also be explained. A total of 140 smallholders working on oil palm integration were analyzed in this discussion. The descriptive statistics and Anova tests were used to answer the objective of the discussion. The study results show that majority of the smallholders are satisfied with the oil palm integration they are implementing. Their level of satisfaction is also significantly different between the types of implementation, implementation cost and the oil palm integration income. This means that the oil palm integration should be given due attention by the smallholders as it has proven to increase their

income. More than that, the oil palm integration also gives them satisfaction and this is something positive and it should be implemented continuously.
Keywords: *Satisfaction, Oil Palm Smallholders, Crops Integration, Livestock Integration, Income*

Introduction

The Malaysian government through the Eleventh Malaysia Plan (11MP) still placing the palm oil industry as one of the country's economic contributors (Malaysia 2016). Therefore, the productivity of production should always be improved (Vivien et al. 2016). In this case, the oil palm smallholders are not excluded as their oil palm plantation accounts for 40% of the country's total oil palm Mamat 2014).

In an effort to increase the productivity of production and the oil palm smallholders' income, the government through MPOB has implemented and provided various forms of aids, such as the Smallholders Oil Palm Replanting (TSSPK) and the Smallholders New Oil Palm Cultivation (TBSPK) which began in 2011 (Warta sawit 2016a). Among the latest, the Oil Palm Integration Incentive Scheme (ITa) and the Oil Palm and livestock Incentive Scheme (ITe) amounting to RM48 million were created to increase the oil palm smallholders' productivity and income (Warta Sawit 2016b).

Previous studies have shown that the integration of oil palm with other crops and livestocks is able to generate the oil palm smallholders' income (Tohiran 2016; Zaimah et al. 2016; Zaimah et al. 2017). Hence, the oil palm integration activities (crops or livestock, or both) among the smallholders are strongly encouraged and expected to be continously carried out. The question is, to what extent does the oil palm integration practices give satisfaction to the smallholders? Hence, the main objective of this discussion is to measure the oil palm smallholders' level of satisfaction towards the oil palm integration practices that they have and are currently implementing. At the same time, the oil palm smallholders' level of satisfaction is also examined according to the implementation category, implementation cost and the oil palm integration income. In addition, the oil palm integration patterns and practices will also be identified.

Literature Review

The oil palm integration programme is a programme that integrates oil palm with other economic activities such as cattle and goats breeding (Dahari & Mahri 2014). The oil palm integration programme is one of the strategies to increase the oil palm smallholders' income through the cooperation of the Malaysian Palm Oil Board (MPOB) in Malaysia (Malaysia 2016; Sjakir et al. 2015; Awang et al. 2016). The implementation of this programme is expected to help the smallholders to earn an income while waiting for the oil palm to mature and increasing their current income.

The smallholders are encouraged to implement the oil palm integration activities because there are many benefits that can be derived from them. Integration among the oil palm smallholders can have a positive impact on productivity as the total production derived from the integration system is higher than the one type agriculture system. Crops and livestock integration activities will not only contribute to increase the income, but also for a higher crop productivity as it gives two or more yields from a piece of land cultivated (Liyama et al. 2007).

Crops and livestock integration are very relevant to be applied because the principle of crops and livestock integration is to improve the efficiency level by utilizing internal inputs (Prasetyo et al.

2002). Livestock farming is important in reducing poverty (Upton 2004). This is because livestock is one of the sources of food, providing income sources and job opportunities. Cattle integration could save the cost of weed control from RM185.15 to RM67.18 hectares a year (Ismail 2002). The implementation of oil palm integration (cattle/cattle breeding) has succeeded in increasing the farmer's income (Ervayenri & Siswati 2013). In fact, the implementation of oil palm integration is also able to reduce the farming cost, especially the weeding cost.

The oil palm integration practice also helps to increase the diversity of crops in a piece of land cultivated. This situation will reduce the economic impact in the event of oil palm price volatility. In fact, it also reduces the risk of operators or farmers from losing and reducing economic risks (Liyama et al. 2007; Wilkins 2008). However, implementing the oil palm integration is also faced with some challenges, such as capital, labour and land. Lack of sufficient capital is a barrier to farmers and breeders to acquire new technologies. A small land size is also a barrier to the farmers to diversify the crops or to practice the oil palm integration.

In addition, the fertilizers' quantities play an important role in the farmers 'probability to engage in diversifying the crops or integrating them. Abundant fertilizer quantities are also able to provide additional incentives to the farmers to diversify the crops and vice versa (Sichoongwe et al. 2014). The education factors were among the contributors to the increase (Ogundari 2013). The oil palm integration can have a positive impact on the increase in productivity and income among the oil palm smallholders if it is well implemented.

Method

The discussion of this article is part of the research results of the MPOB-UKM Endowment Grant, EP-2014-018. The design of the study is quantitative using survey method. The study population was the oil palm smallholders who practice the oil palm integration in several districts in Johor (ie.Tangkak, Muar, Pontian, Ledang, Segamat, Batu Pahat dan Kluang). Sampling technique is aimed at getting the oil palm smallholders who implement oil palm integration. The data collection instrument was using questionnaire. As a result, a total of 140 oil palm smallholders were interviewed by the enumerators of the study. Descriptive analysis using the frequency and percentages were used to describe the overall study result. The oil palm smallholders' satisfaction was measured based on 13 statements using scale; 1=not at all satisfied, 2=slightly satisfied, 3=moderately satisfied, 4=very satisfied, 5=extremely satisfied. The oil palm smallholders' level of satisfaction towards the oil palm integration was classified into three groups based on the satisfaction score obtained, namely, low (1.00-2.33), moderate (2.34-3.33) and high (3.34-5.00). Descriptive statistics and ANOVA tests were used to answer the objective of the study.

Results and Discussions

Respondents' profile and the oil palm integration information

The majority of the respondents are male (90.7%) and majority of the respondents were over 50 years old (62.9%). Young respondents were very small in number (15.7%) and the majority of the respondents are married (92.9%). Half of the respondents who are married, including single parents have between four to six children. The average level of respondents' education is secondary school (53.6%). Only a small number did not go to school (5.8%) and have degree (3.6%). About 55% of the

respondents earned income from the oil palm integration of less than RM1,500.00 per month. Only 20% earn more than RM4,000.00.

The age of the respondents' oil palm trees is mostly less than or equal to three years (87.9%). This is suitable for the respondents to implement the oil palm (crops) integration. More than half of the respondents only have less or equal to 5 acres (69.3%) of plantations. While other respondents have 6-10 acres (20.7%) and only 10% of the respondents have more than 10 acres. Majority of the respondents started implementing oil palm integration in 2011 and after (88.6%). Most of the respondents implemented their own oil palm integration (70.7%). While the rest are shared (10.7%) and operated by other parties (18.6%). The cost of oil palm integration is considerably big. Nearly half of the respondents (47.8%) were spending equal to or more than RM10,000.00 to implement the oil palm integration. It is parallel to the total area of the plantations owned or operated by the respondents.

Majority of the respondents implemented crop integration (92.1%) compared to livestock integration. Two types of plants cultivated by the respondents are bananas (42.9%) and pineapples (32.9%), the rest planted various other crops such as sweet potato, sugarcane, papaya, and galangal. Meanwhile, three types of livestock reared by the respondents are goats, cattle/buffaloes and chickens. The three oil palm integration patterns practiced by the respondents, namely, oil palm operated by the farmers themselves (70.7%), shared with other parties (10.7%) and operated by others (18.6%). Factors that cause a small percentage of the respondents not to carry out their own integration were also identified, among them are health factor, age factor, lack of capital, no time, no experience, no workforce and no wide land area.

The respondents' level of satisfaction towards the oil palm integration

Table 1 shows the respondents' level of satisfaction in implementing the oil palm integration. On average, the respondents were very satisfied with the oil palm integration capability in maximizing the use of land (Mean=4.45), preventing the land from becoming bush (Mean=4.43), encouraging the farmers to frequent the plantation (Mean=4.36) reduce weeding cost (Mean=4.34) encourage faster oil palm growth (Mean=4.30), nourishing the land (M=4.30), fill the leisure time (Mean=4.25), increase the farmers' income (Mean=4.12) and create side income (Mean=4.10). That means, most of the respondents agree that implementing the oil palm integration could provide many benefits to them including providing side income and increasing their income.

Table 1. Level of satisfaction towards the oil palm integration

No.	Statement	Level	Mean	Standard
1	Maximize land use	High	4.45	0.641
2	Preventing the oil palm plantation becoming bushes	High	4.43	0.722
3	Encourage me to frequent the plantation	High	4.36	0.620
4	Reduce weeding cost	High	4.34	0.710
5	Encourage faster growth of the oil palm	High	4.30	0.710
6	Nourishing my plantation land	High	4.30	0.721
7	Fill my free time	High	4.25	0.722
8	Increase my income	High	4.12	0.819
9	Create my side income	High	4.10	0.771
10	Strengthened my family ties	High	3.93	0.931
11	Provide job opportunities to my family members	High	3.75	0.951
12	Increase the villagers' cooperation	Moderate	3.51	1.311
13	Provide job opportunities to the villagers	Moderate	3.44	1.332
	Cumulative Score = 4.25			

Furthermore, the statement-10 and statement-11 also show a high degree of satisfaction with the average score of 3.93 and 3.75 respectively. Whereas the statement-12 and statement-13 showed moderate satisfaction with the average score of 3.51 and 3.44. These four statements illustrate more about the social benefits obtained by the smallholders from the oil palm integration.

Comparison of the respondents' satisfaction level with the implementation category, implementation cost and oil palm integration income

Table 2 shows comparisons of the levels of satisfaction with the implementation categories, implementation costs and oil palm integration income. Anova test, F(df=2, 137, p<.005=5.512) is significant indicating that there is a difference between respondents' satisfaction level with the oil palm integration implementation category carried out by them. The Tukey HSD test results showed that the respondents who implemented the integration themselves level of satisfaction were significantly different from the respondents who allowed others to implement the integration on their oil palm plantation (p=.003). In other words, comparatively, if the respondents are working on their own oil palm integration, it will give them a higher satisfactory level.

The Anova test, F(df=2, 137, p<.033=3.494) shows that there is a significant difference between the respondents' level of satisfaction and the cost of implementing the oil palm integration carried out by them. The Tukey HSD test results showed that the satisfaction level of the respondents' who spent less than RM5,000.00 on the integration cost were significantly different from the respondents who spent equal to or more than RM10,000.00 (p=.026). In other words, the respondents who spend bigger implementation costs are more satisfied with the oil palm integration. This is most likely to have relevance and in accordance to the returns that they earned.

Table 2. Comparison of the level of satisfaction *vs* implementation category, implementation cost and oil palm integration income

	F	**Sig.**
Implementation Category: Self-implemented Shared implementation Implemented by others	5.512	.005
Implementation cost: < RM5,000.00 RM5,000.00-RM9,999.00 ≥ RM10,000.00	3.494	.033
Oil palm integration income: < RM1,500.00 RM1,500.00-RM3,999.00 ≥ RM4,000.00	9.685	.000

The Anova test, F(df=2, 137, p<.000=9.685) shows that there is a significant difference between the respondents' satisfaction level with the oil palm integration income implemented by them. The Tukey HSD test results reconfirmed that the respondents' level of satisfaction is significantly different between the amount of income that they generate from the oil palm integration. This means that, respondents who earn higher income also have a higher level of satisfaction with the oil palm integration.

Conclusion

The main objective of this article is to measure the oil palm smallholders' level of satisfaction towards the oil palm integration practices and to identify the differences in the oil palm smallholders' level of satisfaction according to the implementation category, implementation cost and oil palm integration income. Based on the responses of 140 oil palm smallholders that were discussed, it was found that majority of the smallholders had high levels of satisfaction with the oil palm integration practices. This is because oil palm integration practices provide some side benefits in managing and care of the oil palm and also increasing their income (Tohiran 2012; Zaimah et al. 2016; Zaimah et al. 2017).

In addition, the results of the study also found that the oil palm smallholders' level of satisfaction varies according to the implementation of integration category, implementation costs and income from the oil palm integration itself. The self-implemented oil palm integration provides a higher level of satisfaction than the shared integration implementation and integration implemented by other parties. A higher cost of integration provides a higher level of satisfaction as it is parallel to the land area and the number of trees or livestock. Certainly, it provides a relatively higher returns (Liyama 2007; Upton 2004). This is evident when the smallholders with higher income feel a greater satisfaction with the oil palm integration (Ismail 2002).

The pattern of oil palm integration practices practiced by the oil palm smallholders are self-implemented, implemented jointly with other parties and implemented by other parties. Most of the

oil palm smallholders are cultivating their own oil palm integration because they are still capable of operating the oil palm integration. There are several reasons given for the smallholders' shared implementation of the oil palm integration, namely, unhealthy, age factor, lack of capital, no time, no experience and lack of workforce (Sichoogwe et al. 2014).

The oil palm integration with crops is more implemented by the oil palm smallholders compared to the oil palm integration with livestock. Pineapple and banana are the farmers' main choice in implementing the integration of these crops as both get high demand in the market. The cost of oil palm integration is related to the land area and the type of integration undertaken. The cheapest oil palm integration cost is RM500.00 and the highest integration cost is RM130,000.00. For the shared oil palm integration implementation pattern, majority of the oil palm smallholders shared with their friends. In fact, the form of partnership is also more focused on cultivating on the land rather than the lease, without charging any fees. Benefit distribution is mostly 50:50, although there are also cases that a hundred percent of the benefit were given to partners working on integration in their plantations.

For other integration implementation patterns, on average the oil palm smallholders allow their friends to use their plantations, other farmers and relatives. Most of them allow their land to be used for integration without receiving any payment or benefit distribution. This happens because when they allow their plantation to be used for oil palm integration (especially crops integration), their oil palm plantations will also be managed and sustained. Meanwhile, two major factors of the oil palm smallholders not implementing the oil palm integration themselves is due to unhealthiness and old age. Overall, the oil palm integration practices among the oil palm smallholders were able to increase their income (Tohiran 2012; Zaimah et al. 2016; Ervayenri & Siswati 2013). This factor is a key determinant to their level of satisfaction in the implementation of oil palm integration. Additionally, the oil palm smallholders were also satisfied with the side benefits they get from the practice.

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