

Social Adaptation Level towards Unstable Rubber Price among Malaysian Rubber Smallholders

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Abstract: National Key Economic Area (NKEA) for rubber involves three (3) Entry Point Projects (EPPs) and one of the targets is to ensure sustainability of the upstream rubber industry in Malaysia. This EPP aims to increase the area of replanting and new planting of rubber by independent smallholders to 24,000 hectares. More replanting exercises can also be expected following the government's rubber incentive to aid rubber smallholders suffering from weak commodity prices. Rubber smallholders produce 94% of the Malaysian rubber production. Nowadays, rubber smallholders need to face many challenges especially in rubber price fluctuation. The unstable prices of natural rubber could affect the income and socio-economics of the rubber smallholders. This paper employed survey data to identify smallholders' social adaptation level towards unstable rubber price among Malaysian smallholders. 400 of respondents who are rubber smallholders in four (4) districts area (Baling, Kulim, Gua Musang and Kuala Krai) were involved in this study. The results show that 76.5% of respondents are male and the rest of 23.5% are female. The most predominant age group of the respondents are more 56 years old which are 42.0%. For the marital status of the respondents, there were 90.0% are married, 1.5% are single and 8.5% are widow and widower. 35.0% respondents went to primary schools while about 38.5% went to secondary schools. Meanwhile, only 4.0% had college/university education and 22.5% did not get any formal education. In general, the income level of smallholders is still low (68.5% less than RM1000). The main factors affecting the income of the smallholders are the current rubber price and the old age of the trees. The overall mean for social adaptation level of smallholders towards the impact of unstable rubber price is 2.501 considered as a moderate level of perception.

Keywords: rubber price; rubber smallholders; social adaptation level

I. Introduction

Rubber (*Hevea brasiliensis*) is the second most important plantation crop after oil palm in Malaysia in terms of employment opportunities for rubber smallholders' families, export earnings and downstream activities. Malaysia is the world's fifth largest producer of natural rubber after Thailand, Indonesia, Vietnam and China. Moreover, rubber is one of the first commodity crop planted in large scale in Malaysia, besides cocoa, palm oil and tobacco (Chandrasekhar et al., 2005).

Rubber plantation in Malaysia is divided into two (2) main sectors, namely estate sector and smallholder sector. A rubber estate sector was defined as all areas, contiguous or noncontiguous, aggregating not less than 40.47 hectares (100 acres), planted with the crop or on which the planting of the crop is permitted and is under a single legal ownership. However, a rubber smallholding was defined as all areas, contiguous or non-contiguous, aggregating less than 40.47 hectares (100 acres) planted with the crop or on which the planting of the crop is permitted and is under a single legal ownership (Department of Statistics Malaysia, 2015). Smallholders dominate the rubber planted area in these countries and produce 94% of the Malaysian rubber production, working on 95% of the country's rubber planted land. Ever since grade SMR (Standard Malaysian Rubber) was developed in 1965, the smallholders have been only the suppliers of rubber latex to factories, a role inherited from the time rubber first become a commodity in Malaysia. In the value chain of rubber, the smallholders form a tiny cluster and hardly making any marked financial gains compared to the giants at the top monopolising the processing of and producing high end rubber product. Undoubtedly, they form the primary component of Malaysia's rubber industry and give a high contribution to the Malaysian economy.

Nowadays, rubber smallholders need to face many challenges especially in rubber price situation. The market is expected to decline by the world economic condition, currency movements as well as the market direction of both physical and futures markets. Various supporting schemes for rubber development have been implemented in these countries. Government involvement in the development of rubber smallholders in Malaysia is larger than in Indonesia, while in Thailand the government had totally supported the development of rubber smallholders (Manivong et al., 2003). The major constraints of rubber farmers included shortage and high cost of labour, inadequate credit, poor rubber prices and storage facilities were the most important and significant problems faced by respondents (Giroh et al., 2012).

II. Review of Literature

According to World Bank (1989), the experience of developing countries showed that economic growth does not always translate into the elimination of poverty and the improvement of income distribution. In 1990, poverty still hit the developing countries and it was estimated that one million people were affected by poverty, especially in South Africa, Africa, Sub-Saharan and Latin America. Policies and strategies to address the poverty experienced by the developing countries varied according to the phases of development. In the 1950s and 1960s, the emphasis was on growth to reduce poverty and improve the living standards. The spillover from economic growth was less effective to overcome poverty; so another approach was tried in 1970 which emphasized the provision of health, education and nutrition as well as land reforms and integrated rural development.

Ayob (1994) states that the farmers were the poorest in society, particularly in developing countries. He said that although the agricultural sector had received allocations since independence, poverty among small farmers could not be eliminated altogether. Poverty in the rural areas was due to the size of the land, uneconomical crops, low technology, the system of land tenancy and limited opportunities to increase revenue.

Moreover, the declines in the world rubber economy have drastically affected the price of the natural rubber in India. This adversely affects the income of small-scale rubber growers and the socio-economic conditions of rubber tappers (Anishkumar, 2014). Such findings are supported by recent study accomplished by Husin and Abdullah (2012) stated that the agriculture sector is not stable in terms of the income of the settlers because the prices of commodities such as palm oil and rubber are always volatile. Palm oil production is seasonal and other factors such as the age of the trees and their care affect the monthly income of the settlers.

Adaptation refers to adjustments in ecological, social or economic systems in response to actual or expected climatic stimuli and their effects or impacts (Smith et al., 2006). The past study from Halady and Rao (2010) also reported that the best adaptation practices should consist of both reactive responses (responses in the event of a disaster) and proactive responses (preparation for disaster).

Therefore, extension agencies play an important role to disseminate the new information to farmers. Extension services were used as a measurement for government performances in distributing information for farmers' access (Doss, 2006). According to Rosegrant and Cline (2003), farmers' level of productivity can be increased by improving their knowledge of new techniques and technologies. Nevertheless, farmers' adoption based on their own experience and neighbors' experience. The previous study highlighted that farmers' probability absorption of new technology via observation the behavior of neighboring farmers including their experimentation of the technology (Uaiene et al., 2011).

The general objective of this study is to identify the social adaptation level of rubber smallholders towards unstable rubber price. The specific objectives of the study are to:

- 1) To study the level of respondents' social adaptation towards unstable rubber price.
- 2) To examine the association between selected socio-demographic factors of respondents and the level of respondents' social adaptation towards unstable rubber price.

III. Methodology

The primary data collected directly from the study of materials such as using questionnaire filled by the rubber smallholders as a respondent. The survey questions design according to the objectives of the study. A total of 400 rubber smallholders in the four (4) districts area (Baling, Kulim, Gua Musang and Kuala Krai) where most people are from rubber community and also the main occupation and income are from rubber. Interviews for this surveys consisted of several structured questions such as demographic characteristic, respondents' farm profile, impact of unstable rubber price, social adaptation (The perception of risks; the ability to cope with changes; the level of interest in change; the ability to plan, learn and organize; employability; working, family characteristic; attachment to the occupation; business size and approach; financial status; agriculture dependence; local environmental knowledge; environment awareness, attitudes and beliefs; access to technology, information and skills; relationship between agricultural extension agencies with smallholders and access to credit) toward the unstable rubber price, agricultural extension services and others. Descriptive analysis was used to analyze the data which including the percentage and frequency. Frequency analysis was done to obtain information such as age, gender, marital status, education level, years of involvement and farm profile.

IV. Result and Discussion

Socio-demographic Profile of Respondents

Descriptive analysis was carried out to discuss the results on the demographic profile of respondents such as age, gender, ethnic, marital status and education level. Table 1 shows the demographic profile of respondents in the study area. From the table, we can see that the most predominant age category among the respondent are more than 56 years old. There was 42.0% of the total respondents are in the age category,

followed by 46 to 55 years old with 31.0%, 36 to 45 years old with 18.0% and 26 to 35 years old with 9.0%. From this statistic, it shows that the youths are not interesting to involve in agriculture sectors. Since the highest frequency age of the respondent is more than 56 years old, it can be concluded that most of the farmers are in the old age range because they do not have any options unless to utilize their land by agriculture activities.

In terms of gender, 76.5% of respondents are male and the rest of 23.5% are female. It shows that most of the respondents involve in rubber farming activities in the surveyed area are male. For the marital status of the respondents, there were 90.0% are married, 1.5% are single and 8.5% are widow and widower. The finding from the survey shows that 22.5% of respondents did not get any formal education. There were 35.0% went to primary schools while about 38.5% went to secondary schools. Meanwhile, only 4.0% had college/university education. It can conclude that most of the farmers in Malaysia have low education level.

Years of involvement variable illustrated that 34.0% of the respondents have been involving in rubber farming for more than 35 years. Meanwhile, 28.0% of respondents have experience in rubber farming between 16-25 years, 24.0% between 6-15 years, followed by 14.0% between 26-35 years and 5.0% below than 5 years. Based on the result, we can conclude that majority of the respondents have enough experience to manage their farming activities since most of them have a long years involvement in rubber farming. In term of economic status, their income indicates 68.0% of them had earned less than RM1000 per month. According to Husin & Abdullah (2012), the main factors affecting the income of the settlers are the old age of the trees, the advanced age of many of the settlers and the land area for crops is not increasing. This represents most of respondents are low earners even though they had involve many years in rubber farming activities.

Table 1: Demographics profile of the respondents (n=400)

Variables	Parameter	Frequency	(%)
Age	≤ 25 years	0	0.0
	26-35 years	36	9.0
	36-45 years	74	18.5
	46-55 years	122	30.5
	>56 years	168	42.0
Gender	Male	306	76.5
	Female	94	23.5
Marital status	Single	6	1.5
	Married	360	90.0
	Widow/Widower/Divorce	34	8.5
Number of household	1 to 3	138	34.5
	4 to 6	144	36.0
	More than 7	118	29.5
Education Level	Never been to School	90	22.5
	Primary School	140	35.0
	Secondary School	154	38.5
	College/university education	16	4.0
Years of Involvement	≤ 5 years	2	0.5
	6 -15 years	94	23.5
	16-25 years	110	27.5
	12-35 years	58	14.5
	35 years and above	136	34.0
Income (RM [*])/Month	≤ 1000	274	68.5
	1001-2000	116	29.0
	2001-3000	10	2.5
	≥ 3001	0	0.0

*RM = Ringgit Malaysia

Level of Respondents’ Social Adaptation towards Unstable Rubber Price

In this study, the overall mean score was categorized into three levels which is low (M = 1.00-2.33), moderate (2.34-3.66) and high (3.67-5.00). The highest mean score was recorded using the aspect “the perception of risks” (M = 2.944), while the lowest mean score was recorded using “access to climate technology, information and skills” (M = 1.580) (Table 2a).

Table 2a: Overall Social Adaptation Perception Level (n=400)

	Social Adaptation Factors	Level	Mean	SD
1.	The perception of risks	Moderate	2.944	0.278
2.	The ability to cope with changes	Moderate	2.834	0.404
3.	The level of interest in change	Moderate	2.666	0.472
4.	The ability to plan, learn and organize	Moderate	2.844	0.363
5.	Employability	Moderate	2.980	0.140
6.	Working (age, level of education)	Low	1.580	0.504
7.	Family characteristic	Low	2.095	0.294

8.	Attachment to the occupation	Moderate	2.995	0.071
9.	Business size and approach	Low	2.205	0.428
10.	Financial status	Low	2.225	0.441
11.	Agriculture Dependence	Moderate	2.830	0.367
12.	Local environmental knowledge	Moderate	2.465	0.509
13.	Environment awareness, attitudes and beliefs	Moderate	2.940	0.237
14.	Access to technology, information and skills	Low	1.710	0.454
15.	Relationship between agricultural extension agencies with smallholders	Low	2.240	0.427
16.	Access to credit	Moderate	2.630	0.483
	Social Adaptation Overall Mean Score		2.511	

Table 2b: Social Adaptation Perception Level (n=400)

Level	Mean	SD
High (3.67-5.0)	2.511	0.147
Moderate (2.34-3.66)		
Low (1-2.33)		

Even though most of these aspects recorded moderate scores, it should be further strengthened. The smallholders indicated that they are aware of unstable rubber price and this issue is the main topics discussed amongst their colleagues and family members. Hence, assessing their levels of adaptation will assist the relevant agencies in understanding the readiness of the community to be transferred and to learn new skills about rubber sector.

V. Conclusion

This study impacts give a clear picture and better insight in smallholders’ social adaptation towards unstable rubber price. The result shows that the impacts of unstable rubber price on socio-economic situations of smallholders was very high. Moreover, the level of social adaptation towards unstable rubber price was moderate. Assessing their levels of adaptation will assist the relevant agencies in understanding the readiness of the community to be transferred and to learn new skills about rubber industry. This study indicates that there is a need to be strengthened for increase productivity through appropriate planning and proper extension services. Agricultural extension services has played a role in providing knowledge and information to improve smallholders’ social adaptation. Thus, all parties such as smallholders, government agency and private sector should involve ensuring that the objectives or targets to enhance the rubber industry will achieve.

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