

# Factors influencing the Cocoa Smallholders Behavior Decision Making in Hilir Perak

**Norlizah Mohd Yusof, Syahrizan Syahlan,  
Farahida Zulkefli, and Muhammad Aliuddin Bakar**

Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA (Melaka)  
Malaysia

DOI: 10.6007/IJARBSS/v7-i10/3418 URL: <http://dx.doi.org/10.6007/IJARBSS/v7-i10/3418>

## **ABSTRACT**

A survey had been done in the Hilir Perak with the association of the Malaysian Cocoa Board (MCB) to study on factors affecting cocoa smallholder behaviour at MCB Hilir Perak. In this case study, the factor used as the independent variable to determine the smallholder attitude are, prior knowledge, facilitating condition, subjective norm and also the perceived behaviour control. Whilst, for the dependent variable is the cocoa smallholder behaviour. 59 respondents were randomly selected from the smallholder name list given by the MCB. Data collected pooled and analyse by using SPSS software to find the correlation of the factor. Prior knowledge and facilitating condition factor show significance difference towards cocoa smallholder attitude ( $P < 0.05$ ). This case study proves that the social pressure and motivation from people surrounding are not enough to change the smallholder attitudes. It must also being supported with conducive condition and adequate knowledge to the smallholder in order to change their attitudes and indirectly will increasing the cocoa production.

**Keywords:** Cocoa Smallholder, Perceived Behavior Control, Prior Knowledge, Social Norm, Facilitating Condition.

## **Introduction**

The average of cocoa production at all main production area in world is still low compared to the demand from the people around the world where the production average is only 1 tone/ha/year (Cocoa Producer's Alliance, 2008). In detail, the average cocoa production for West African countries is only 0.2-0.3 tone/ha/year, follow by Brazil and Indonesia with the average cocoa production is about 0.5-0.6 tone/ha/year and lastly Malaysia, the average production is 0.8-1.0 tone/ha/year.

According to Yusof et al. (2000), well-managed cocoa farms produced cocoa bean at average 2.0-4.6 tones/ha/year. This means that, well develop or well management of the cocoa plantation can increase the cocoa production. Well management of the cocoa plantation does not only mean that the farmers have most advance technology in their plantation, but the farmers also need to change their attitude during managing their plantation. For example, the farmers need to operate their plantation by follow the example from the MCB during their training period before.

The purposes of this case study are twofold:

1. To observe farmers knowledge of cocoa plantation.
2. To study the factors that will influence the cocoa smallholder behavior.

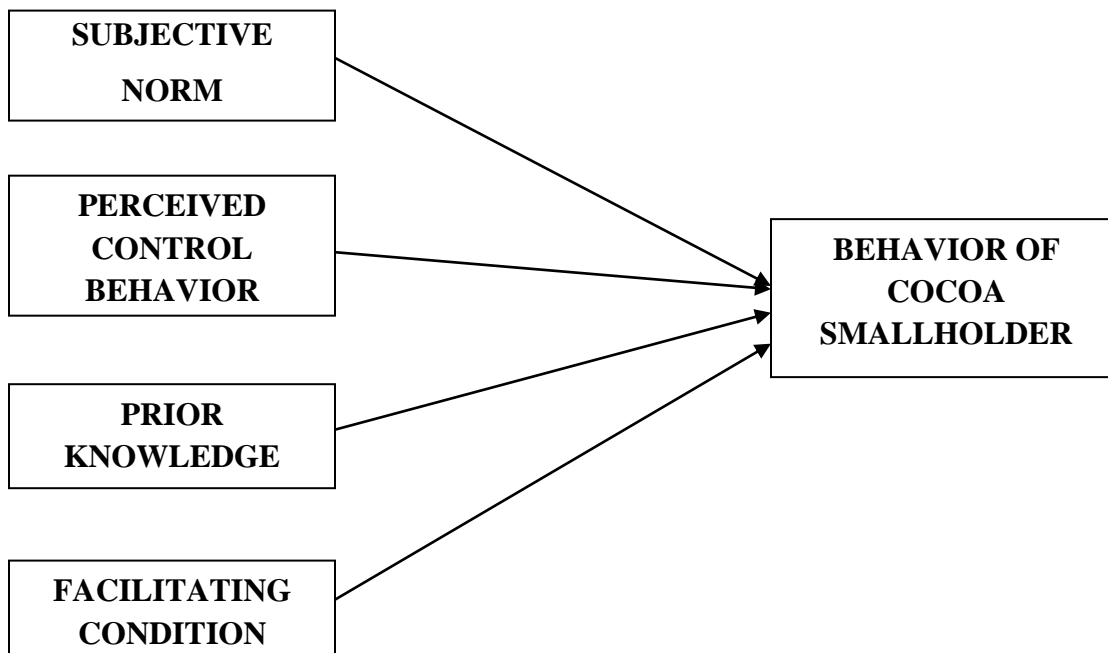
The study is important to be conducted because from this case study, the researcher can measure the effectiveness of the programs that has been organized by the MCB for the cocoa smallholder. This is because; the fresh started cocoa smallholder will receive full support from the MCB whether from raw material, planting material and also guidelines to set up their cocoa plantation.

Other than that, this case study also can measure how far that guidelines from the MCB help the cocoa smallholder in managing their cocoa plantation and also increase their income in order to get a better life during these challenging days. Besides that, the researcher also can find out how efficient is the MCB staff especially from extension department in doing their job that is distributing the new technology and also the additional input such as fertilizer to the cocoa smallholder.

The researchers also have an opportunity to observe the attitude of the cocoa smallholder during them working in their cocoa plantation. The attitude of the smallholder can be observe from many aspect such as how they will use the input that have been supplied by MCB to them, how about the time management when they manage their cocoa plantation, and also the researcher have an opportunity to observe how far does the smallholder apply what have they learn from the seminar and training that have been organized by the MCB.

### **Conceptual Framework**

Based on objectives and previous literature survey on this area, a conceptual framework was developed. Figure 1 represents a schematic diagram for the theoretical framework for factors contribute to cocoa smallholder behavior. This research will provide further insight as to what extent can four variables influence in the behaviour among the smallholders.



A total number of 59 respondent were choose randomly from the 70 population of a big group cocoa smallholder in Hilir Perak. The total number of respondents is based on the population table that was been developed by the Krejcie and Morgan (1970). In this table, the Krejcie and Morgan already formulate and calculate the estimated sample based on number of the population in a certain area. After number of respondent has been identified, then name of the smallholder were choose randomly by using simple random sampling technique. Then, the questionnaire that has been develop will be distributed to the targeted smallholder at the Hilir Perak. During data collection, the researcher distributes the questionnaire and gathers the data by face to face with the cocoa smallholder. By using this technique, the researcher have several advantages such as the researcher need a short period of time to collect the data as well as the researcher also can clarify the respondent problem about the questionnaire distributed on the spot. The researcher also may have advantages to elaborate more about the case study topics and make the respondent well understand before them answering the questionnaire.

## **Results and Discussion**

### **Reliability Test**

From table 1, the results of Cronbarch's alpha show a positive consistency on the data when Cronbach's Alpha value estimated was higher than the index of reliability test (0.6). This shows that there is consistency among the behaviour of the cocoa smallholders and it can be conclude that the study based on the questionnaires is fit for this study.

Table 1: Result Reliability Test.

<b>Variables</b>	<b>Cronbach's alpha</b>
Prior Knowledge	0.776
Facilities	0.837
Perceive Behabviour	0.791
Subjective Norm	0.900
Attitude	0.855

### **Descriptive Analysis**

Table 2 shows that the highest number of age among the respondent in the sample come from age more than 50 years old (83.1%), followed by age between 41 to 50 years old (11.9%). Only two individuals come from age 31 to 40 years old (3.4%). The lowest percentages in the sample is age between 21 to 30 years old (1.7%).

Smallholder gender shows that the male gender is the dominant cocoa smallholder at Hilir Perak. The male gender were dominant by the percentages of 69.5% (41 respondents), whereas the female gender were far away left behind with the percentages of only 30.5% (18 respondents).

About 96.6% (57 respondents) of the respondent come from Malays and only 2 respondents or can be represent in percentages as (3.4%) are Indian. The results shows that the majority background of the smallholder is Malay. In the Hilir Perak, there are only two races that operate the cocoa plantation. However, clearly can be seen from the table that most of the cocoa smallholder is Malay. From the chart obtained above, the majority of the cocoa smallholder marital status are 93.2% married, whereas, (1.7%) is single and others 5.1 % were divorced or separated (widower).

Table 2: Demographic profile

Respondent's Demographic	Variable Type	Frequency (Number of Smallholder)	Percentage (%)
Age (Years)	21-30	1	1.7
	31-40	2	3.4
	41-50	7	11.9
	>50	49	83.1
Gender	Male	41	69.5
	Female	18	30.5
Race	Malay	57	96.6
	Indian	2	3.4
Marital	Married	55	93.2
	Single	1	1.7
	Others	3	5.1
Education	No Formal Education	6	10.2
	Primary School	37	62.7
	Secondary School	11	18.6
	Vocational Education	3	5.1
	College / Universities	2	3.4

The average age of the cocoa smallholder were more than 50 years old and almost of them were married. That indicate that most of the cocoa smallholder that have average age of 50 years and this means that the cocoa smallholder can be categorised already retired. Thus this will create an opportunity to the smallholder to concentrate and managing to their cocoa plantation 100%.

Majority of the smallholders in this case, have education background, although for the majority (67.8%) smallholder only attend on primary school. About (18.6%) attendance on secondary school, following by (5.1%) of smallholder were never attendance on formal school and were unable to read and write and other (8.5%) smallholder were has higher education level such as vocational education and college or university.

All of the smallholder were guided or receiving training under the program organize by MCB. Most of the smallholder were owner operators. It important to note that all these characteristics of the respondents discussed have telling effect on prior knowledge, perceive

behaviour, subjective norm and reception facilities provided in influencing attitude of smallholder in managing their farm.

**Relationship between Factors Contributed to Cocoa Smallholders Behaviour**

Pearson Correlation Analysis was used to identify the relationship between the independent variables (subjective norm, perceived control behaviour, prior knowledge, facilitating condition) that affect the dependent variable( behaviour)

Table 3: Significance Level Between the Dependent Variable with the Independent Variables.

Independent Variable	R	Dependent Variable (Smallholder’s behaviour)
		p
Knowledge	0.261	0.046
Perceived Control Behaviour	-0.188	0.450
Facilitating Condition	0.386	0.003
Subjective norm	0.057	0.666

From table 3, we can see a significant value between the dependent variable and the independent variable and the results of this study. Based on table 2, clearly seen that the facilitating condition have a significant relationship because the value of significant, p = 0.003 at p<0.05. Although there was a significant relationship between the two variables, but the relationship was weak because the r – value was in the range of 0.20 until 0.39, which categorized as weak. Thus , there was a significant weak positives relationship between the facilitating condition and behaviour. The second factor; prior knowledge, have also a significant relationship because the value of significant, p = 0.046 at p<0.05. Although there was a significant relationship between the two variables, but the relationship was weak because the r – value was in the range of 0.20 until 0.39, which categorized as weak. Thus, there was a significant weak positives relationship between the knowledge and behaviour.

**Conclusion**

As a conclusion, from this case study, there are several important factors that can change the smallholder behavior. The important factors are prior knowledge and facilitating condition. The researcher can stated that, with the enough and adequate knowledge that supply by the MCB combine with the enough facilitating condition that have been supply by the private or government sector can influence the smallholder behavior toward positive attitude and thus simultaneously will increase the smallholder cocoa production. Even though, the subjective norm and the perceived behavior factor have no significance different, but it does not mean these factors do not contribute anything towards the smallholder behavior.

Recommendation for this study is that the cocoa smallholder should have closer relationship with the MCB extension agent. It is because the extension agent can guide the cocoa farmer to manage their plantation and also becomes as useful resources to gain a new knowledge. For example, if there is any doubt about the fertilizing process for the young seedling of cocoa tree, the smallholder should directly ask the extension agent in order to get the right answer and make the right decision. This relationship is very important to prevent the same accident to happen again to the smallholder, where one of the respondent that have been interviewed have lost most of their young cocoa tree after the smallholder apply the wrong type of fertilizer because the smallholder did not ask the extension agent but they apply the fertilizer based on their own assumption.

### **Corresponding Author**

Syahrizan Syahlan

Faculty of Plantation and Agrotechnology,  
Universiti Teknologi MARA (Melaka), Malaysia.

Email: syahrizan@rocketmail.com

### **References**

- Ajzen, I. (1987). Attitudes, traits, and action: Dispositional prediction of behavior in personality, and social psychology. In L. Berkowitz (Ed.), *Advances in experimental, & social psychology* (Vol. 20, Pp. 1-60). New York : Academic Press.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational behavior and human decision processes*, 50, 179-211.
- Ajzen, I. (2006). *Behavioral Interventions Based on the Theory of Planned Behavior*. Retrieved from <https://people.umass.edu/aizen/pdf/tpb.intervention.pdf>.
- Azhar, I. (2009). *Malaysia Cocoa Board: Public Sector Role in Sustainable World Cocoa Economy: Malaysian Experience*. Trinidad and Tobago.
- Aziz, N. A. B. A., Aziz, N. N. B. A., Aris, Y. B. W., & Aziz, N. A. B. A. (2015). Factors Influencing the Paddy Farmers' Intention to Participate in Agriculture Takaful. *Procedia Economics and Finance*, 31(15), 237–242. doi:10.1016/S2212-5671(15)01225-3.
- Cameron, R. R. (2010). *Ajzen's Theory of Planned Behavior Applied to the Use of Social Networking by College Students*. Texas State University, San Marcos.
- David, S. (2007). Learning to Think for Ourselves. Knowledge Improvement and Social Benefits among Farmer Field School Participants in Cameroon. *Journal of International Agricultural and Extension Education*, 14 (2), 35-49. doi: 10.5191/jiaee.2007.14203.
- David, S., and Asamoah, C. (2011). The Impact of Farmer Field Schools on Human and Social Capital: A Case Study from Ghana. *The Journal of Agricultural Education and Extension*, 17 (3). doi: 10.1080/1389224X.2011.559076.
- Feola, G., Lerner, A. M., Jain, M., Montefrio, M. J. F., & Nicholas, K. A. (2015). Researching farmer behaviour in climate change adaptation and sustainable agriculture: Lessons learned from five case studies. *Journal of Rural Studies*, 39, 74–84. doi:10.1016/j.jrurstud.2015.03.009.

- Hoebink, P., Ruben, R., Elbers, W., & Rijsbergen, V. B. (2014). The Impact of Coffee Certification on Smallholder Farmers in Kenya, Uganda and Ethiopia, (February).
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities Robert. *Educational and Psychological Measurement*, 38(1), 607–610. doi:10.1177/001316447003000308.
- Kwadzo, M. (2015). Factors Determining Enterprise Shift Behavior among Smallholder Cocoa Farmers in the Mpohor-Wassa East District in the Western Region of Ghana, 6(10), 71–78.
- Meijer, S. S., Catacutan, D., Ajayi, O. C., Sileshi, G. W., & Nieuwenhuis, M. (2015). The role of knowledge, attitudes and perceptions in the uptake of agricultural and agroforestry innovations among smallholder farmers in sub-Saharan Africa. *International Journal of Agricultural Sustainability*, 13(1), 40–54. doi:10.1080/14735903.2014.912493.
- Meijer, S. S., Catacutan, D., Ajayi, O. C., Sileshi, G. W., & Nieuwenhuis, M. (2015). The role of knowledge, attitudes and perceptions in the uptake of agricultural and agroforestry innovations among smallholder farmers in sub-Saharan Africa. *International Journal of Agricultural Sustainability*, 13(1), 40–54. doi:10.1080/14735903.2014.912493.
- Melesse, T. M. (2015). Agricultural Technology Adoption and Market Participation under Learning Externality: Impact Evaluation on Small scale Agriculture from Rural Ethiopia.
- Mercy, A., Aneani, F., Ofori, S., and Branor, P. F. (2015). Analysis of Farmers Adoption Behaviour of CRIG Recommended Technologies as a Package: The Case of Some Self Help Cocoa Farmer Associations in the Eastern Region of Ghana. *Agricultural Sciences* 6, 601-608. Retrieved from <http://www.scirp.org/journal/as>.
- Pipitone, L. (Director a.i. of Economics & Statistics Division), (2012). FAO Committee on Commodity Problems: *The Future of the World Cocoa Economy: Boom or Bust?*. Rome, Italy.
- Sekaran, U., & Bougie, R. (2013). *Research Method for Business*. United Kingdom: John Wiley & Sons Ltd.
- Sebatta, C., Mugisha, J., Katungi, E., Kasharu, A. K., & Kyomugisha, H. (n.d.). What Drives Smallholder Farmers ' Behaviour in the Potato Market in Uganda, 4531, 330–343.
- Sharifzadeh, M., Zamani, G. H., Khalili, D., & Karami, E. (2012). Agricultural Climate Information Use: An Application of the Planned Behaviour Theory. *Journal of Agricultural Science and Technology*, 14(3), 479–492.
- Snv. (2012). A study on farmer behaviour change and household decision making in Svay Rieng Preface, 1–76.
- Sterve, H. (2008). Factors restricting adoption of sustainable agricultural practices in a upper Thukela region , South Africa Factors restricting adoption of sustainable agricultural practices in a Field supervisor : Rebecka Henriksson. *Governance An International Journal Of Policy And Administration*.
- Teguh, W. M. (2008). *The world scenario of cocoa production and consumption*. Indonesian Coffee and Cocoa Research Institute, Indonesia.