

Original Research Paper

Can Contract Marketing Motivate Farmers to Go Organic? Measuring the Moderation Effect of Contract Marketing

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Abstract: The demand for organic food is growing in Malaysia due to consumer concerns for food safety, sustainable development and urban expansion. However, the share of farmers engaged in this type of agriculture in Malaysia is notably low with only 72 (0.02%) organic vegetable farmers out of a total of 272,000 farmers in the country. Therefore, it is crucial to understand why the majority of the farmers do not practice organic farming and suggest possible solutions through contract marketing as a motivating tool to enhance their participation in organic farming. In this study, a total of 329 conventional vegetable farmers were selected and interviewed through multi-stage systematic random sampling method via a structured questionnaire. Factor analysis and hierarchical multiple regression analysis has revealed that there is a moderating role by contract marketing to strengthen the relationship between attitude and public farmers' intention to practice organic farming. This study has identified contract marketing as a component which moderates the perceived behavioral control-intention to practice organic farming. Therefore, contract farming not only shapes the attitude of farmers but it also develops the control over the chain by channeling farmers' products to the buyers.

Keywords: Organic Farming, Contract Marketing, Intention to Practice, Hierarchical Multiple Regression

Introduction

There is an expansion in demand for organic crops and livestock products following trends set by globalization, market liberalization and consumer concerns about food safety and environmental issues. This concerns not only the end-product, but the entire agricultural practices linked to production and delivering of the agricultural produce (Rezai *et al.*, 2014; De Wit and Verhoog, 2007). This indicates that organic agricultural practices stop along the value chain and not at production level (Glover *et al.*, 2014; Acs *et al.*, 2007). The Malaysian government has encouraged organic production in the country to provide better quality food resources. With the establishment of the Malaysia Organic Standard in Year 2001, retailers such as AEON, Cold Storage and Tesco have setup a special "Organic Products Section" in their hypermarkets to motivate farmers to grow organic vegetables. According to the Economic Transformation Program 2013, the size of organic agricultural land coupled with the number of organic producers still remains relatively

low. According to the Department of Agriculture, there are only 72 farmers who have obtained organic certification in 2014 out of a total of 278,768 farmers in Malaysia and about 300 farmers have applied for organic certification in the past 14 years (DOA, 2014). The price difference between organic and conventional products cannot be over emphasized as organic vegetables sell at about 350% higher than conventional vegetables. This is presumed to gear the farmers to shift from conventional to organic production. However, in case of Malaysia, it is a reversed situation. High risk in implementing organic farming such as lack of distribution channels, possible drop in productivity and reduced income during conversion (Sgroi *et al.*, 2015; Mohamad *et al.*, 2014; Hanson *et al.*, 2004; Canavari *et al.*, 2007) may contribute to the factors affecting the adoption of organic farming in Malaysia. Therefore, studies are required to determine why farmers are not adopting organic farming and to suggest possible solutions such as contract marketing in order to motivate greater farmer involvement in organic farming. Currently, contract farming and contract marketing are being practiced to

motivate farmer's transition to modern agriculture in both developed and developing countries (Wang *et al.*, 2014). Contract marketing is a potential alternative in the agriculture system to establish a market linkage between smallholder farmers and the retailers (Man and Nawi, 2010; Kirsten and Sartorius, 2002). Motivation such as price premium for certified organic products, sales channel access capabilities, economic sustainability and valorizing the local development are among the main concerns for farmers' participation in organic farming (Peterson *et al.*, 2012). Contract marketing is an incentive and insurance for small scale farmers involved in environmental improvement activities such as organic practices. It also provides linkage to help farmers access the market, increase their income, reduce the risks of price fluctuation, increase labor incentives and introduce high value crops (Vorley, 2013; Shaffril *et al.*, 2010; Mkhabela, 2007). Given the paucity of research on this topic, a study on the impact of contract marketing to enhance the adoption of organic farming becomes crucial. The attitude of the farmers toward organic practices and the environmental and social impact of their role is important in understanding their intention to practice organic farming. Moreover, this study will look at the moderating effect of contract marketing on these latent factors which influence farmer's intention to practice organic farming.

Analytical Framework

The framework of this study explains the relationship between intention predictors (attitude, subjective norms and perceived behavioral control) and intention by distinguishing the moderation role of contract marketing (Ajzen, 1991). Three groups of variables are found to predict farmers' intention to practice organic farming. The first variable was attitude, which concerns the farmers' opinions towards organic farming, such as profitability, their concerns about environmental

protection, concerns about the workers' welfare and farming environment. The second variable is the subjective norms, which measures the influence of the surrounding factors toward farmers' organic practices, such as family members, friends, other farmers, buyers and suppliers. The third variable is the perceived behavioral control which measured the control power over the outcome such as ability to learn new planting technique, paper work and staff training and finding a proper buyer. After the factors which influence the intention of farmers to practice organic farming are outlined, contract marketing variable is then used as a motivator to explore its moderating impact on the relationship between attitude, subjective norms and perceived behavioral control with the farmers' intention. Figure 1 presents the conceptual framework of the study.

The sampling frame for this study is made of conventional vegetable farmers within Peninsular Malaysia. Multistage systematic random sampling technique was applied where the state (in Peninsular Malaysia) with the most populated farmers was identified based on data provided by Department of Agriculture Malaysia. After that, the list of conventional vegetable farmers were collected from the state or district department of agriculture. From the list, every tenth farmer was randomly selected as the respondent for this study. After making an appointment with the farmers, they were interviewed face to face during a 30 min time period via the structured questionnaire. The data collection took about 8-9 weeks from December 2014 to January 2015. The first part of the questionnaire included statements regarding intention's predictors (ATT, SN, PBC) and contract marketing using a seven-point Likert scale where 1 = strongly disagree and 7 = strongly agree. In the second part of the questionnaire intention to practice organic farming was measured using semantic differential statements (from 1-7).

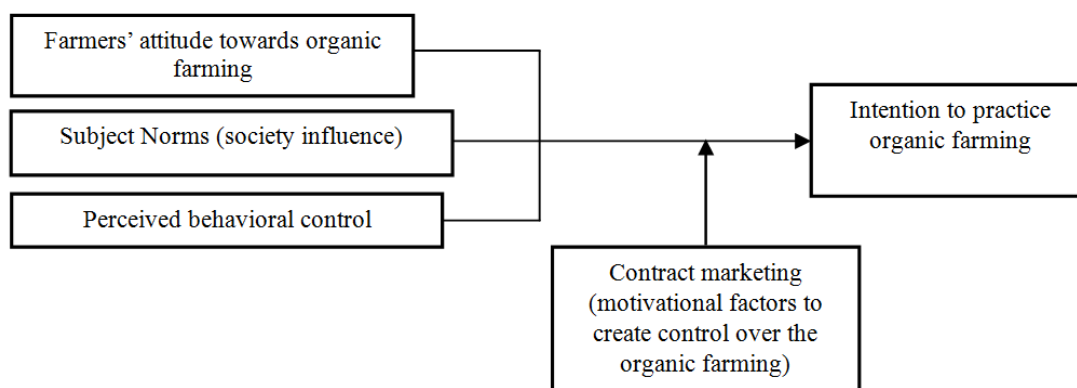


Fig. 1. Hypothesized relationship between intention and its predictors moderated by contract marketing (Adopted and modified from TPB, Ajzen, 1991)

Statistical Analyses

Descriptive analysis was used to explain the socio-demographic profile of the farmers and reliability analysis was run to ensure internal consistency by measuring Cronbach's alpha. In addition explanatory factor analysis and hierarchical regression analysis were performed to measure the interaction effect of contract marketing on the relationship between dependent variables (intention) and its predictor independent variables (Attitude, SN, PBC).

Results and Discussion

The Cronbach's alpha was measured to test the consistency and reliability among all the variables in the questionnaire. The value of Cronbach's alpha was 0.918 which indicates consistency among the proposed model's construct.

Socio-Demographic Information

A total of 329 farmers were interviewed from different states in Peninsular Malaysia. The result shows that there are 97.3% male and 2.7% female. Most of the respondents were between 31 to 40 years of age (104 farmers, 31.6%). In terms of race, 66.9% of them were Malay and 32.2% of them were Chinese. For the farm size, most of the farmers were smallholder farmers with

less than 5 acres (53.2%). Besides, 70.6% of the farmer have less than 15 years of farming experience (Table 1). Most of the farmers operated a family based operation where 64.7% of the farmers have 2 to 5 family members to help them on the farm. Furthermore, the majority of the farmers employed less than 5 employees (80.8.0%), while 7.5% of them employed more than 11 employees. In terms of education, most of the respondents had received primary education (36.5%), followed by secondary education (27.7%), non-formal education (24.0%), STPM or holding a diploma (7.9%) and lastly holding a degree (3.6%).

Dimensions of Farmers' Intention Towards Organic Farming

Exploratory factor analysis was used to group the set of variables into major underlying factors that influence the farmers' intention towards organic farming. The result of the Keiser-Meyer-Olkin (KMO) sampling adequacy test was 0.793 and the Bartlett's test of Sphericity was significant at the 0.01 level which indicates that factor analysis is appropriate for this study.

The factor loading from principal component analysis was obtained after varimax rotation was performed on the farmers' responses to 31 statements regarding their attitude, subjective norms, perceived behavioral control and contract marketing.

Table 1. Demographic profile of farmers

Item		Frequency	Percentage (%)
Gender	Male	320	97.3
	Female	9	2.7
Age (year old)	<20	0	0.0
	20-30	50	15.2
	31-40	104	31.6
	41-50	92	28.0
	>50	83	25.2
Race	Malay	220	66.9
	Chinese	106	32.2
	Indian	3	0.9
Farm size (ache)	<2	100	30.4
	5-Feb	42	12.8
	10-May	67	20.4
	15-Oct	42	12.8
	15-20	20	6.1
	>20	54	16.4
Experience (year)	<5	65	19.8
	10-Jun	68	20.7
	15-Nov	99	30.1
	16-20	34	10.3
	>20	63	19.1
Family work in farm	<2	113	34.3
	6-Feb	213	64.7
	10-Jun	6	1.0
Employee number	<5	266	80.8
	10-Jun	38	11.7
	>11	25	7.5

In total 4 factors were identified as important dimensions of respondents' intention and they account for 57.106% of the total variance, as summarized in Table 2. The statistical results show that Malaysian vegetable farmers place a relatively high level of importance on perceived behavioral control (having more control over the outcome), contract marketing (being able to sell and market to the right channels) and attitude to shape their intention towards organic practices (Table 2).

Moderating Role of Contract Marketing in Enhancing Organic Farming Intention

Hierarchical regression was used in this study to predict moderating effect of contract farming on the relationship between dependent variable (intention) and its predictors (AT, SN, PBC) where the average value was used for intention and the values for predictors and contract marketing were identified from factor analysis (factors with eigenvalues >1).

Table 3 presents the summary of hierarchical regression analysis. In the first step of the first model, the adjusted R² is 0.050 indicating that 5% of the variation in intention to practice organic farming is explained by attitude. In the second step by adding contract marketing into the model,

the adjusted R² value increases to 0.316. In the final stage, the moderating role of contract marketing appeared to make the attitude-intention relationship stronger (R² = 0.324, p<0.001). The findings from the second model indicate that there is no evidence to suggest the existence of contract marketing as moderator in the relationship between Subjective Norms and farmer's intention to practice organic farming. The statistical insignificant result is not surprising as the factors of friend, family and even village extension have done little in motivating the farmers towards organic farming. Also, farmers might want to participate in contract marketing mainly because of economic reasons. According to Koesling *et al.* (2008), potential converters (conventional farming to organic farming) are attractive in organic farming for financial reasons. This is also supported by Jessical (2011) as she has concluded that motivation is economic in nature through increasing demand for organic products and price premium for certified organic products. The last model presents that the relationship between perceived behavioral control and intention to practice organic farming is not significant. However by adding the interaction term (PBC*CM) not only does the relationship become positive but it also becomes significant (R² = 0.109, p<0.05).

Table 2. Dimension of farmers' intention towards organic farming

Item	F ₁	F ₂	F ₃	F ₄
Contract marketing				
Contract Marketing helps to gain market information easily	0.904			
Contact Marketing protects farmers in difficult times	0.872			
With Contract, I will be able to perform all the marketing activities for organic production on times	0.853			
Contract marketing helps farmer to plan for future planting schedule	0.850			
Contract marketing guarantees a secure income especially for organic farming	0.762			
Contract marketing makes starting organic farming easier	0.659			
Variance (percent of explained)	20.066			
Perceived behavior control related constructs				
I am confident in learning of organic farming, if I want to		0.883		
I am confident I can find buyers easily if I plant organic vegetables		0.809		
I can obtain organic certificate easily if I want to		0.770		
I can control and train my staff to start planting organic vegetables easily		0.767		
I am confident that I can get the organic paper works and documentation done easily		0.749		
Variance (percent of explained)		15.40		
Attitude related constructs				
I do care about environment and try my best to reduce the pollution in my daily farming work			0.954	
In my opinion, organic vegetables have better Ex farm price compared to conventional ones			0.946	
Organic certification such as SOM, IFOAM is important to prove my method of planting to consumers			0.821	
Variance (percent of explained)			11.68	
Subjective norm				
The input supplier encourages me to plant organic				0.862
The vegetable buyer/distributor encourages me to plant organic				0.848
There are more organic farmers compared to conventional ones in my village				0.778
Variance (percent of explained)				9.960
Total variance	57.106			

(Source: Survey, 2015)

Table 3. Model summary of hierarchical regression

Step	Variable entered	Beta			R ²	Model F (or ΔF)	ΔR ²
		1	2	3			
1	Attitude	0.225	0.225	0.225***	0.050	17.391	0.050
2	Contract marketing		0.325	0.325***	0.316	126.739	0.266
3	Att*CM			0.271***	0.324	3.869	0.008
1	Subjective norm	0.099	0.099	0.099	0.010	3.255	0.010
2	Contract marketing		0.325***	0.325***	0.284	124.611	0.274
3	SN*CM			0.201	0.002	0.796	0.796
1	Perceived behavioral control	0.057	0.057	0.057	0.003	0.332	0.003
2	Contract Marketing		0.325***	0.325***	0.109	11.995	0.106
3	PBC*CM			0.205*	0.109	0.002	0.000

Note. Variables are standardized (Z-scores) and beta coefficients are non-standardized. N = 329. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

This result has indicated that there is an evidence to suggest the existence of contract marketing as moderator in the relationship between perceived behavioral control and farmer's intention to practice organic farming. This result is consistent with Doris and Hugh (2010) who has stated that farmers' ability in undertaking organic farming play an important role in affecting their intention to practice organic plantation.

Summary and Discussion

This study attempts to find out the latent factors that contribute to farmer's intention to practice organic farming and examine the effects of contract marketing on enhancing the relationship between the latent factors and farmer's intention. The extracted factors explained the different dimensions that influence farmers' intention in practicing organic farming. Four factors that are significantly associated with farmers' intention in organic farming are: 'Contract marketing', 'perceived behavioral control', 'attitude' and 'subjective norms'. Out of these four factors, 'contract marketing' by far has produced the largest effect. The current research has revealed that the majority of the respondents were concerned about income that can be generated from organic practices, particularly emphasis on market channel and a higher price. The attitude on the other hand has also allied greatly with marketing issues. Due to the fact that most of the farmer are earning their living through their farming income, there is no doubt that they were very concerned about the marketing channel and price. Currently in the organic industries, the traditional supply chain does play an active role. Organic products are not well distributed through the current distribution channel due to a lack of buyers in the traditional distribution market. Currently, most of the well-established Malaysia organic farms such as ZenXin, Sunshine, Titi Eco Farm are dealing directly with Hypermarkets such as Tesco and AEON. These organic farmers have their own logistics team and cool storage facilities for storage and delivery of their products. In this situation, the capital capacity serves as a barrier to the

smallholder farmers who wish to start organic farming. Although most of the farmers have agreed that organic products have a better price, are healthier and environmental friendly, yet the marketing issues remain a barrier to stating organic practices. From this study, it has been suggested that most of the farmers welcomed contract marketing, where they believed that it could make income more certain. With the certainly of income, farmers believed they could handle or solve technical issues in organic planting such as looking for input suppliers, training of staff and learning organic techniques. Furthermore, the results of hierarchal multiple regression have indicated that contract marketing has played a significant role on motivating the farmers. Especially on factors that underlie attitude and perceived behavioral control on marketability farmers feel more confident in controlling the output with contract marketing. This result is in line with the study of Herath (2013) on the impact of motivation on farmers' decision to adopt technology. Their study has concluded that attitude is the main contributor to develop intention in Czech farmers. In particular extrinsic motivation has a great contribution in this regard. While in Sri Lanka, the highest contribution to develop intention is shown by the perceived behavioral control, followed by attitude. Evidence has shown that the impact of promoting organic farming is minimal on the farmers as the marketing issues remain unsolved (Testa *et al.*, 2015). Therefore, the policies which have been put into effect must match the demand by farmers to provide more control over marketing issues. Developing more contract marketers within the industry will be a wise strategy to consider. Contract marketing is a strategy used by most business entities to stabilize prices and supply quantities. With contract marketing, farmers will be more confident to practice organic plantation by dedicating parts of their farm land to organic farming.

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Author's Contributions

All authors equally contributed in this work.

Ethics

This article is original and contains unpublished material. The corresponding author confirms that all of the other authors have read and approved the manuscript and no ethical issues involved.

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