

## Factors Affecting The Collective Trademark Building Intention Of Fruit Farming Households In Phong Dien District, Can Tho City

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### -----ABSTRACT-----

*The study was conducted to identify factors affecting the collective trademark building intention of fruit farming household in Phong Dien district, Can Tho city. The data was collected through a survey of 205 fruit farming households using stratified random sampling. Using the Structural Equation Modeling (SEM) approach, the study found that the collective trademark building intention was affected by four factors: benefit - cost, assistance, intangible resources and tangible resources. In particular, the cost-benefit element has the strongest influence on the collective trademark building intention of the fruit farming households.*

**KEYWORDS** - intention, collective trademark, fruit trees, farming household, Phong Dien district

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### I. INTRODUCTION

According to the Department of Agricultural Product Processing and Market Development (Ministry of Agriculture and Rural Development), 90% of Vietnam's agricultural products are still exported in raw form with lower prices than those of other countries. Notably, in Vietnam over 80% of the agricultural commodities have not been built, such products have no logos, labels, forced to sell in the world market through foreign brands. At the same time, according to data from the National Office of Industrial Property (Ministry of Science and Technology), about 80% of agricultural products are sold in the domestic market without trademarking (Bao Tran, 2016). This reduces the value added of products, lowers the competitive advantage in the market and reduces the export turnover of agricultural products, causing damage to the economy. At present, only a few brands of farm products in Vietnam have trademarks in the domestic market, such as Nam Roi pomelos, green skin pomelo, Lai Vung pink mandarin, Tam Binh oranges, Ba Den custard apple, Thanh Ha litchi, Thai Nguyen tea, Hai Hau rice, Buon Ma Thuot coffee, Hoa Loc mango ... This is really a significant bottleneck of the Vietnamese agriculture.

Phong Dien is an agricultural district located in the south of Can Tho city (Vietnam) and about 15 km from the city centre. Phong Dien district has many favourable natural conditions to develop agriculture, especially the advantage of planting fruit trees of high economic value. By the end of 2016, the region has more than 6,300 hectares of fruit orchards, forming more concentrated production areas such as Giai Xuan star apple with an area of over 300 hectares, Ha Chau mulberry area of Nhon Ai commune with an area of over 350 hectares, Truong Long longan area of Nhon Nghia commune with an area of over 150 ha / area. Initially, the areas specialising in agriculture have brought specific successes; however, there are still many difficulties, especially in consumption, and the added value of agricultural products. Facing that situation, the solution to build a collective trademark for fruits in Phong Dien district is vital. However, for this activity to be implemented and bring about positive results, it is necessary to understand the perception and collective trademark building intention of fruit farming households. This is the primary objective of this study.

### II. RESEARCH METHODS

#### 2.1. Theoretical background and research model

Collective trademarks of Agricultural Products are signs of the geographical origin, materials, production patterns or other common characteristics of the goods or services of different farmers using the same collective trademarks. (Gabriela Head et al., 2013). Building the brand for agricultural products is one of the critical solutions to enhance competitiveness and increase agricultural added value (Vo Thi Loc, 2008).

According to Ajzen (1991), the intention to engage in a particular action is the willingness to perform a specific behaviour of an individual, and this intention is assumed to be highly correlated with actual activity. The collective trademark building intention in this study is defined as the self-commitment and insight of an individual who intends to build a collective fruit trademark and actively undertake it in the future.

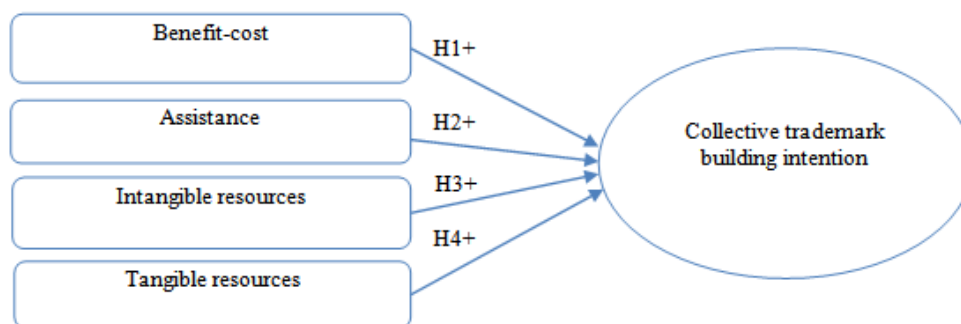
From the literature review, the collective trademark building intention was influenced by a variety of factors, such as investment costs, benefits received, support from the agricultural sector, resources of the farming household, etc. The study was based on a group discussion (qualitative research) with eight experienced farming households participating in the collective trademark building process, and then the proposed research model includes four factors affecting the collective trademark building intention of fruit farming households in Phong Dien district. That is, benefit-cost, assistance, intangible resources and tangible resources.

**Benefit-Cost:** Elena (2014) found that the cost factor has an inevitable impact on the decision to build and protect the trademark, which makes it difficult for manufacturers. Nguyen Van Phat et al. (2012) demonstrated that when producers build the trademarks for their products, they profit from increasing the value of their products while improving their competitive position in the market. At the same time, Vo Thi Loc (2008) argued that building trademarks for agricultural products are one of the key solutions to enhance competitiveness and increase the value of farm products. Therefore, it can be hypothesised that H1: Benefit-Cost has a positive effect on the intention to build collective trademarks of fruit farming households.

**Assistance:** The movement activities of the farming household community and the active support of the local agriculture through training programs and workshops are factors that influence the collective trademark building intention for agricultural products of farming households (Nguyen Thi Bao Chau, 2015). Ajzen (1991) asserted that different groups of references in society would govern the perception and intention of participating in the activities of each member in that society. Based on this, it can be hypothesised that H2: The support has a positive effect on the collective trademark building intention of the fruit farming households.

**Intangible Resources:** Nguyen Van Phat et al. (2012) assumed that perception is seen as a determinant of behaviour. The right awareness of trademark will drive the trademark building and development activities. According to Bui Huu Duc (2008), to successfully build a brand for agricultural products, farmers need to be aware of the importance and understanding of the processes to create the trademark, so knowledge is one of an essential factor. On the other hand, Nguyen Van Song et al. (2014) have demonstrated that the higher the educational level is, the higher the need for collective trademark building is. On this basis, it can be hypothesised that H3: Intangible resources have a positive effect on the collective trademark building intention of the fruit farming households.

**Tangible resources:** According to Sahni (1994), the stronger the financial capacity is, the more likely the decision on trademark building and development of the farming household is. In addition, Bui Dinh Hoa et al. (2017) demonstrated that income of a farming family is positively correlated with the need for collective trademark building. According to Nguyen Van Song et al. (2014), the farming scale positively influences the need for collective trademark building. On this basis, it can be hypothesised that H4: The tangible resources have a positive effect on the collective trademark building intention of the fruit farming household.



**Figure 1: The proposed research model**

**Table 1: Interpretation of observed variables in the research model**

Concept	Symbol	Observed variables	Reference source	Scale
Benefit-cost	BC1	Create trust, reputation in the market	Vo Thi Loc (2008), Nguyen Van Phat et al. (2012), Elena (2014)	Likert 1-5
	BC2	Enhance the added value of fruits		
	BC3	Increase the competitiveness in the market		
	BC4	Do not take much time		
	BC5	Do not cost much		
Assistance	AS1	Many agricultural extension programs guide collective trademark building	Ajzen (1991), Nguyen Thi Bao Chau (2015)	Likert 1-5
	AS2	Many programs support the collective trademark building		
	AS3	The community is holding a movement of collective trademark building		
	AS4	Local authorities encourage the collective trademark building		

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Intangible resources	IR1	Requires experience in building and developing a collective trademark	Bui Huu Duc (2008), Nguyen Van Phat et al. (2012), Nguyen Van Song et al. (2014)	Likert 1-5
	IR2	Requires high education level to grasp		
	IR3	Requires understanding and knowledge of the collective trademark		
Tangible resources	TR1	Labour force ensures the process of collective trademark building	Sahni (1994), Bui Đinh Hoa et al. (2017), Nguyen Van Song et al. (2014)	Likert 1-5
	TR2	Cultivation scale promotes collective trademark building		
	TR3	Financial ability ensures the collective trademark building		
Collective trademark building intention	CTBI1	I intend to participate in the collective trademark building.	Ajzen (1991), Group discussion	Likert 1-5
	CTBI2	I always respond to the collective trademark building movement		
	CTBI3	I will mobilise the community to participate in collective trademark building.		
	CTBI4	I am willing to contribute and support to build a collective trademark		

Source: Authors' compilation, 2017

### 2.2 Analysis method

The research model was tested through the following steps: verifying scale reliability by Cronbach's Alpha coefficient, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). In this study, the scales for evaluating the observed variables are in the form of a 5-level Likert scale, with level 1 = strongly disagree and increased to level 5 = strongly agree.

### 2.3 Data collection

The study used a stratified random sampling technique to collect data. Criteria for stratification are geographic location, cultivation scale, fruit type. Structural Equation Modelling (SEM) requires a large sample size because it based on the sample distribution theory (Raykov & Widaman, 1995). To achieve reliability in SEM model testing, a sample size of 100 to 200 is acceptable (Hoyle, 1995). According to Hoelter (1983), the sample size limited in the SEM is 200. In fact, the study collected 205 observations by direct interview and the respondents were farmers who were cultivating fruits trees in Phong Dien district, Can Tho city. Thus, the sample size satisfies the sample size requirements, ensures the reliability to test the model.

## III. RESEARCH RESULTS AND DISCUSSION

### 3.1 Testing the reliability of the scale

Testing the reliability of scale based on Cronbach's Alpha coefficient is used to test the degree of tightness and correlation between observed variables. According to the test results in Table 2, all scales have a Cronbach's Alpha coefficient higher than 0.6. The corrected item-total correlation of the observed variables in the factors was greater than 0.3, so no variables were excluded from the research model (Nunnally, 1978; Peterson, 1994; Slater, 1995). Therefore, all observed variables are satisfactory and are used for further exploratory factor analysis.

**Table 2: Reliability testing of the scale**

Factors	Number of observed variables	Minimum of the item-total correlation coefficient	Cronbach's Alpha coefficient
Benefit-cost	5	0,719	0,893
Assistance	4	0,640	0,877
Intangible resources	3	0,703	0,854
Tangible resources	3	0,639	0,815
Trademark intention	4	0,684	0,864

Source: Survey data, 2017

### 3.2 Exploratory Factor Analysis (EFA)

After testing of the reliability coefficient, the study conducted an Exploratory Factor Analysis (EFA). The results of the analysis are as follows: (1) Reliability of observed variables with Factor loading > 0.5; (2) test the suitability of the model with  $0.5 < KMO = 0.882 < 1$ ; (3) Bartlett's test for the correlation of observed variables with Sig coefficient = 0.000 < 0.05; (4) The cumulative variance test is 61.90% > 50% (Gerbing &

Anderson, 1988). The results have formed five factors with Eigenvalue coefficient = 1.064, and there is no disturbance in observed variables between factors, so the names of the original factors remain unchanged.

**Table 3: New Factors Formed by Exploratory Factor Analysis (EFA)**

Symbol	Observed variables	Name of factors
F1	BC1, BC2, BC3, BC4, BC5	Benefit-cost
F2	AS1, AS2, AS3, AS4	Assistance
F3	IR1, IR2, IR3	Intangible resources
F4	TR1, TR2, TR3	Tangible resources
F5	CTBI1, CTBI2, CTBI3, CTBI4	Collective Trademark Building Intention

Source: Survey data, 2017

**3.3 Confirmatory Factor Analysis (CFA)**

After the Exploratory factor analysis (EFA), the study conducted a Confirmatory factor analysis (CFA) to test the convergent validity, discriminant validity, unidimensionality and reliability of the scale. The test results show that the Chi-square = 278,875, P-value = 0.000 and Chi-square by CMIN /df = 1.964 < 2 (Carmines McIver, 1981), TLI = 0.940 and CFI = 0.950 are all greater than 0.9 (Bentler & Bonett, 1980) and RMSEA = 0.069 ≤ 0.08 (Nguyen Dinh Tho & Nguyen Thi Mai Trang, 2008). From that, the model is found to be consistent with the market data.

Based on the CFA result, the correlation coefficient between errors is less than 1, so the measurement model is unidimensional. The standardised weights of the concepts are greater than 0.5, and the unstandardised weights are statistically significant, so the concepts reach the convergent validity. Also, the correlation coefficient with the standard deviation is <0.9, so the research concepts reach discriminant validity. Results of composite reliability and total variance extracted shows that value of composite reliability (smallest 0.81) and total variance extracted (smallest 0.59) are acceptable (Joreskog, 1971; Fornell & Larcker, 1981). At the same time, the Cronbach's Alpha coefficient of factors is more significant than 0.6, so the condition is satisfied (Nunnally & Bernstein, 1994). Thus, research data are consistent with market data, convergent validity, discriminant validity, unidimensionality and reliability.

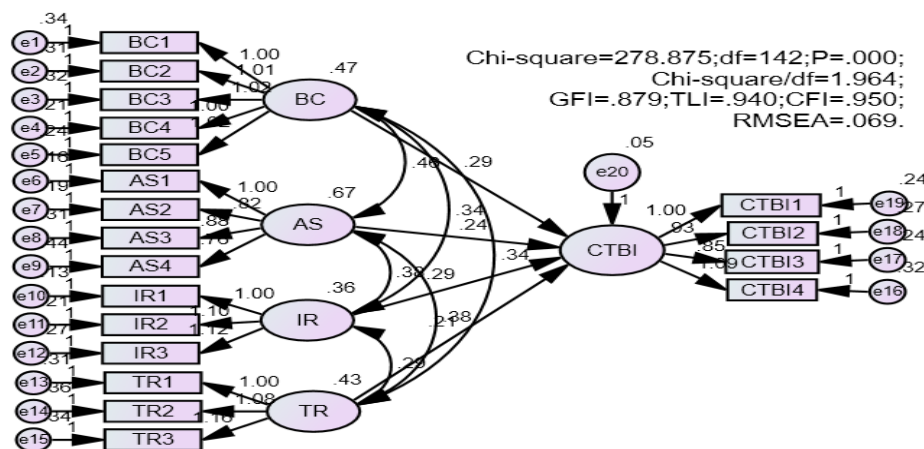
**Table 4: Scale reliability evaluation results**

Observed variables	Composite Reliability	Total variance extracted
Benefit-cost	0,89	0,63
Assistance	0,88	0,65
Intangible resources	0,86	0,68
Tangible resources	0,81	0,59
Trademark intention	0,87	0,62

Source: Survey data, 2017

**3.4 Structural Equation Modelling (SEM)**

After the Confirmatory Factor Analysis, Structural Equation Modelling (SEM) is used to test the research hypotheses. The results are shown in Figure 2.



**Figure 2: SEM results of the theoretical model (standardised)**

Source: Survey data, 2017

**Table 5: Test the relationship between the concepts in the model**

Relationship	Unstandardized			Standardized estimates	P-Value
	Estimated value	S.E.	C.R.		
CTBI <--- BC	0,290	0,117	2,486	0,291	0,013
CTBI <--- AS	0,237	0,075	3,175	0,284	0,001
CTBI <--- IR	0,291	0,120	2,427	0,255	0,015
CTBI <--- TR	0,207	0,089	2,331	0,199	0,020

Source: Survey data, 2017

Based on the results in Table 5, all four independent factors have a P-value of less than 5%, so all hypotheses are accepted. All elements: Benefit-cost, assistance, intangible resources and tangible resources have a positive impact on the collective trademark building intention of fruit farming households. This means that if the incomes and intangible benefits are higher than the cost of investing in building a collective trademark, the fruit farming households are more likely to participate in collective trademark building. Besides, if the assistance, encouragement of the local community and the collective trademark building movement is stronger, then the fruit farming households are more likely to participate in collective trademark building. At the same time, the study shows that the higher of educational level, knowledge and understanding of collective trademarks is, the more likely the collective trademark building intention of farming household is. Similarly, if the farming household has excellent human resources, financial and physical resources, they are more likely to participate in collective trademark building. In particular, the benefit-cost has the most substantial influence on the collective trademark building intention of the fruit farming households.

#### IV. CONCLUSION

With the objective of identifying the factors affecting the collective trademark building intention of fruit farming households in Phong Dien district, Can Tho city, the study identified four positive factors, namely benefit - cost, assistance, intangible resources and tangible resources. Based on the research results, some recommendations have been proposed to improve the ability to participate in collective trademark building of farming households in Phong Dien district including:

- (1) Raise awareness of the role and importance of building a collective trademark so that the farming households realise the efficiency of the investment through the difference between the benefits received and the costs incurred.
- (2) Enhance the collective trademark registration assistance for farming households through the agricultural sector and the local Farmers Association.
- (3) Promote cooperation between farming households and the business community in order to link consumption and cooperate in building a collective trademark from mutual benefits.

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