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Measuring the customers' brand loyalty towards fertilizers of An Giang Agrochemical Co, LTD

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Abstract

The study aims to determine the factors affecting the brand loyalty of customers to fertilizers of An Giang Agrochemical Co, Ltd (AGAC). The authors collected data from 190 customers who are using the fertilizer of AGAC. The study applies exploratory factor analysis and multivariable linear regression for analyses. The study has pointed out five factors positively impacting the brand loyalty towards fertilizer AGAC include product origin, brand, perceived price, product quality, and brand association. In which, the perceived price has the most influence on customer brand loyalty of customers to the fertilizer of AGAC.

Keywords: Brand loyalty; Customer; Fertilizer, An Giang Agrochemical Co, LTD

1. Problem statement

Customer brand loyalty is the extent that any business wants to achieve. Loyal customers help companies save costs, make more transactions, and have positive word-of-mouth (Kotler et al, 1989). If a company loses a customer, it means they not only lose revenue from that customer, but they may lose many more customers (Kotler and Keller, 2005). Moreover, it costs much for the company to regain the number of lost customers if they want to maintain the growth speed.

A Giang Agrochemical Co, Ltd was established on September 9, 2009, up to now, with a long history of growing, AGAC is now a company with products such as fertilizers, pesticides, and crop protection agents. During its operation, AGAC is proud to be a reliable manufacturer of distributors and agents across the country. Currently, AGAC's products have been distributed in all provinces in Vietnam. AGAC expects to export all products to Cambodia, Laos, and Thailand.

Mekong Delta region has a long-standing developed agricultural economy with rice as the main food crop. Currently, the progress of science and technology and the increase of intensive farming have increased pest pressure on crops. Therefore, the demand for fertilizer in agricultural production grows. Currently, the fertilizer market develops in both quantity and product types provided by different manufacturers. A large number of fertilizer brands in the market greatly influence the choice and loyalty of farmers. Therefore, research on the loyalty of farmers to fertilizer brands is essential for enterprises. To meet the goals and the orientation of AGAC, the study "Measuring customer's brand loyalty to fertilizer of An Giang Agrochemical Co, Ltd" is necessary. Also, the study proposes scientific and practical management implications to help orient and develop AGAC.

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2. Theoretical framework and research model

Loyalty is a deep commitment to repurchase or re-visit a preferred product/service in the future, thereby causing a repetition of the same brand or re-ordering, despite circumstances and marketing efforts that may lead to behavioral changes (Oliver, 2000). Customers are considered to be brand loyal when they tend to buy multiple products of a certain brand and repeat purchases (Chaudhuri Holbrook, 2001). Loyalty shows the attitude of customers, if they trust and have a good impression of a brand, they will prioritize buying products of that brand (Yoo et al, 2000). Loyalty behavior focuses on the customer's value to the brand (Schultz Bailey, 2000).

2.1. The relationship between product origin and brand loyalty

Country of origin is considered an important factor affecting customer attitudes and acceptance towards product brands (Nghì and Viet, 2011). In a study in 2010, Thimangu has said product origin affects customer brand loyalty. Research by Saydan (2013) has shown that product origin is not only an impacting factor to customer brand loyalty, but it has the highest impact level when compared to others components of brand value. Therefore, the study proposed hypothesis H1: Product origin positively affects customers' brand loyalty to fertilizer of AGAC.

2.2. The relationship between product brand and loyalty

Branding is a tool to connect a company's customers and suppliers, and to maintain long-run relationships with the two parties (Chang and Chieng, 2006). Brands influence and assist customers in choosing a good product to satisfy their needs or demands. Yee and Yahyah (2008) have demonstrated that brand characteristics influence brand loyalty. Research by Thao (2014) has argued that product brand has a positive and important correlation to customer loyalty to that brand. Thus, the study suggested the hypothesis H2: Product brand positively affects customer's brand loyalty towards fertilizer of AGAC.

2.3. The relationship between perceived price and brand loyalty

If a product's perceived value is higher than its price, the customer will buy that product. Perceived price influences customers' choice preferences and decision to continue buying (Bucklin et al, 1998). The studies of Tuu (2007), Thao (2014) have confirmed the direct influence of perceived price on customer brand loyalty. From there, the study hypothesizes H3: Perceived price positively affects customers' brand loyalty towards fertilizer products of AGAC.

2.4. The relationship between perceived quality and brand loyalty

Perceived quality represents the customer's perception of the product quality that they expect about a brand. Perceived quality includes the quality of products and supplier-related services (Phuong, 2013). Researches by Thimangu (2010), Thao (2014) have demonstrated that perceived quality has a direct and positive influence on customer loyalty. Perceived quality influences brand loyalty (Yoo et al, 2000). The more loyal customers are to the brand, the more they believe that the brand will provide high-quality products (Ho Huy Tuu, 2007). Hence, the study proposes hypothesis H4: Perceived quality positively affects customer brand loyalty to fertilizer products of AGAC.

2.5. Relationship between brand association and brand loyalty

The brand association makes a difference, creates positive attitudes and feelings about the brand, and gives reasons to buy the product (Aaker, 1991). Brand loyalty results from customers' perception, that only one particular brand can satisfy their needs. Chin and Wen (2010) have shown the importance of brand association its great influence on brand loyalty. Similarly, Jan et al. (2013) have also confirmed the significance and strong impact of brand association on customers' brand loyalty. The study suggests hypothesis H5: Brand association positively impacts customers' brand loyalty to fertilizer products of AGAC.

Based on the literature review and research hypotheses, the research model is proposed as follows

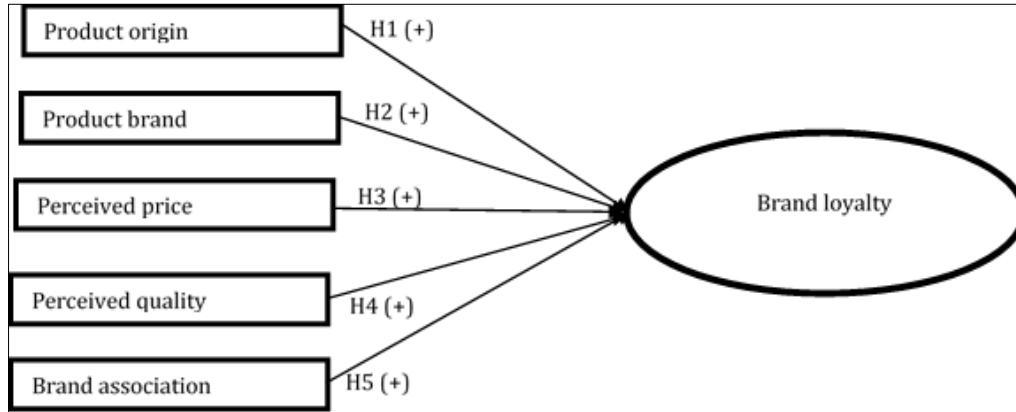


Figure 1 Proposed research model

Table 1 Interpretation of observed variables of the research model

Factor	Observed variables	Scale	Reference resources
Product origin (PO)	The origin of fertilizer products of AGAC is reliable.	Likert 1-5	Thimangu (2010), Nghi and Viet (2011), Saydan (2013)
	The origin of fertilizer products of AGAC is prioritized for selection.	Likert 1-5	
	The origin of fertilizer products of AGAC is more reliable than other brands.	Likert 1-5	
Product brand (PB)	The fertilizer product brand of AGAC is well known to many farmers.	Likert 1-5	Punniyamoorthy and Raj (2007), Yee and Yahyah (2008), Thao (2014)
	The fertilizer product brand of AGAC creates trust for farmers.	Likert 1-5	
	The fertilizer product brand of AGAC is distinguished from other brands.	Likert 1-5	
Perceived price (PP)	Fertilizer products of AGAC have reasonable prices.	Likert 1-5	Yee and Yahyah (2008), Tuu (2007)
	The price of fertilizer products of AGAC is stable and less changed compared with other brands.	Likert 1-5	
	Fertilizer products of AGAC are more economical than other brands.	Likert 1-5	
Perceived quality (PQ)	Fertilizer products of AGAC are high-quality.	Likert 1-5	Thimangu (2010),Nghiem (2012), Tuu (2007)
	Fertilizer products of AGAC are strictly tested for quality.	Likert 1-5	
	Using fertilizer products of AGAC ensures health safety.	Likert 1-5	
	Fertilizer products of AGAC have a higher quality compared to other brands.	Likert 1-5	
Brand association (BA)	When it comes to fertilizers, farmers immediately think of AGAC’s products.	Likert 1-5	Yoo and Donthu (2000), Chin and Wen (2010), Jan et al. (2013)
	Farmers easily visualize the packaging and color of AGAC’s fertilizer products.	Likert 1-5	
	When it comes to AGAC’s fertilizers, farmers immediately think of a reputable brand.	Likert 1-5	

Brand loyalty (BL)	Farmers think about AGAC when they have the demand for fertilizers.	Likert 1-5	Aaker (1991), Nghiem (2012), Jan et al. (2013)
	Farmers will not buy other fertilizer brands if AGAC's fertilizers are not available at the store.	Likert 1-5	
	Farmers are willing to pay more to use the fertilizer products of AGAC.	Likert 1-5	
	Farmers continue to buy fertilizer products of AGAC in the future.	Likert 1-5	
	Farmers will recommend fertilizer products of AGAC to others.	Likert 1-5	

3. Methodology

3.1. Analytical method

The quantification of the factors affecting customers' brand loyalty towards AGAC's product is carried out in 3 steps. Step 1: Use Cronbach's Alpha to test the internal correlation between observed variables. Step 2: Using the exploratory factor analysis (EFA) to test the convergent and discriminant validity. Step 3: Use multivariable linear regression to test the research hypotheses.

3.2. Data collection method

The study uses convenient sampling to survey 190 customers who are using fertilizer products of AGAC. According to Hair et al. (1998), in EFA, the observation/ measurement variable proportion should be 5:1, meaning that 1 measurement variable requires at least 5 observations. Tabachnick and Fidell (2007) have confirmed that the suitable sample size for regression is determined to be $N \geq 50 + 5 * m$ (where m is the number of independent variables). The above arguments show that the research sample size meets the reliability requirement for testing the research hypothesis.

4. Research results and discussion

4.1. Scale reliability test

Cronbach's Alpha coefficient helps eliminate "garbage" variables. Those with item-total correlation values less than 0.3 are excluded (Nunnally, 1978; Peterson, 1994) and the scale is satisfactory if it's Cronbach's Alpha is higher than 0.6 (Slater, 1995). Based on the result in table 2, the scales have high reliability (the minimum Cronbach's Alpha value is 0.8). Therefore, all variables are used in the EFA step.

Table 2 Scale reliability test result

Observed variables	Corrected item-total correlation	Cronbach's alpha if item deleted
Product origin: Cronbach's Alpha = 0.873		
PO1	0.746	0.831
PO2	0.726	0.849
PO3	0.800	0.784
Product brand: Cronbach's Alpha = 0.802		
PB1	0.644	0.732
PB2	0.715	0.653
PB3	0.589	0.787

Perceived price: Cronbach's Alpha = 0.893		
PP1	0.784	0.853
PP2	0.831	0.812
PP3	0.756	0.877
Perceived quality: Cronbach's Alpha = 0.800		
PQ1	0.672	0.719
PQ2	0.596	0.758
PQ3	0.637	0.738
PQ4	0.547	0.782
Brand association: Cronbach's Alpha = 0.855		
BA1	0.720	0.804
BA2	0.748	0.781
BA3	0.717	0.808
Brand loyalty: Cronbach's Alpha = 0.930		
BL1	0.867	0.904
BL2	0.792	0.919
BL3	0.827	0.912
BL4	0.741	0.928
BL5	0.856	0.906

Source: Survey data, 2021

4.2. Exploratory Factor Analysis (EFA)

Based on the EFA for the independent variables in the research model, the results achieved are as follows: The significance level (Sig.) is less than 0.05; KMO = 0.857 in the range from 0 to 1; factor loading indicators of all observed variables are greater than 0.5; total variance extracted reaches 75.57% > 50%. This shows that the research data is consistent. Thus, the analysis results create 5 factors, including product origin (3 observed variables), product brand (3 observed variables), perceived price (3 observed variables), perceived quality (4 observed variables), and brand associations (3 observed variables). The observed variables belong to the factors as proposed by the model, so there is no change in their names. Similarly, the EFA for the dependent variable "Brand loyalty" gives satisfactory results: The significance level of the model (Sig.) is less than 0.05 and KMO = 0.831 in the range from 0 to 1; factor loading values of all observed variables are greater than 0.5; total variance extracted is 78.25% > 50%. This shows that the research data is consistent. The analysis results create one factor, "brand loyalty".

4.3. Multivariate linear regression

After the EFA, multivariate linear regression is used to determine the factors affecting customers' brand loyalty to fertilizer products of AGAC. The results are shown in Table 3.

Based on the above table, the model's adjusted R² reaches 60.5%, which proves that the brand loyalty towards fertilizer products of AGAC is well defined by the model. The Sig.F coefficient of the model is much smaller than the $\alpha = 5\%$, so the regression model is significant. Durbin-Watson = 1.474 and VIF < 4, which proves that the model does not have autocorrelation and multicollinearity. There are five independent variables with statistical significance. This shows that the factors of product origin, product brand, perceived price, product quality, and brand association have a positive impact on customers' brand loyalty to AGAC's fertilizers. In other words, if customers appreciate the origin, brand, perceived price, quality, and brand association of a product, then their brand loyalty improves. In which, the perceived price factor has the most impact on customer loyalty to fertilizer products of AGAC.

Table 3 Multivariate linear regression result

Factor	Standardized estimated value	Significance level (Sig.)	Hypothesis
Product origin	3.532	0.001	H1: accepted
Product brand	3.153	0.002	H2: accepted
Perceived price	4.716	0.000	H3: accepted
Perceived quality	2.664	0.008	H4: accepted
Brand association	4.201	0.000	H5: accepted
Adjusted R ²	0.605		
Durbin-Watson stat	1.474		
Sig.F	0.000		

Source: Survey data, 2021

5. Conclusion

The study has demonstrated five factors that positively affect the brand loyalty of customers to fertilizer products: product origin, brand, perceived price, product quality, and brand associations. In which, the perceived price factor puts the strongest influence on the brand loyalty towards AGAC's fertilizer products. Based on the research results, several managerial implications are offered as follows: Firstly, improving the perceived value of customers for fertilizer products of AGAC. Secondly, improve the attributes related to the brand association of AGAC's fertilizers. Thirdly, strengthen customers' trust in the origin of fertilizer products. Fourthly, continuously improve the quality of products. Fifthly, strengthen the promotion activities and the brand awareness of fertilizer products.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that there are no competing or potential conflicts of interest.

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