

Factors Influencing Purchasing Decision of Butter Oil Substitute in Vietnam

Hà Nam Khánh Giao

(Faculty of Post Graduate Studies, University of Finance and Marketing, Vietnam)

Abstract: The study was aimed at determining the impacts of factors that influence the purchasing decision of Butter Oil Substitute (BOS) in coffee roasting industry. The study was carried out in Ho Chi Minh City on 88 customers using face to face interview and structured questionnaire as the instruments for data collection. Questions were designed to find out how consumers behave in relation to BOS for coffee roasting.

The study showed that the purchase of BOS in coffee roasting industry is influenced mostly by the customer's price consciousness, relationship between buyer and seller, and customer service. The study can be used as references for the planning of marketing strategies and as the basis for future researches in the customer behavior with regard to bakery customers (another application of BOS) and specialty fats in general.

Key words: butter oil substitute; coffee roasting industry; purchasing decision; Vietnam

JEL codes: L66, O53, P23

1. Introduction

Vietnamese coffee is roasted differently from coffee in other regions of the world, a unique process, involving butter oil and techniques that bring out the highest development of flavor without over-roasting or burning the coffee. Coffee beans are generally roasted in what is referred to as butter oil substitute (BOS). Butter oil substitute is widely used in the coffee roasting industry to replace the expensive dairy-based butter oil. The functionality of BOS is similar to that of butter, which is to smoothly, fatty beans. The unique characteristics of the BOS product are its strong butter flavor and a deep yellow color. BOS has been hot in recent years in Vietnam due to low price & convenience for coffee roasting industry.

There are about 350 coffee roasters in Vietnam nowadays. All most all of coffee roasters are using BOS to add in roasting process. Dosage is about 3%-5%. BOS's volume from import statistic estimates about 7,000 MT per year, almost from Malaysia, Indonesia. The sales volume for the specialty fats segment in Viet Nam has reached \$49 million for a volume of 35,000 MT in 2010.

2. Literature Review

Buying behavior in this study will focus on the industrial buying behavior (hereafter IBB). IBB is a complex process that involves interaction between several persons, both within and outside an organization (Webster &

Hà Nam Khánh Giao, Doctor, Associate Professor, Head of the Faculty of Post Graduate Studies, University of Finance and Marketing; research areas/interests: marketing, international business, tourism, service. E-mail: khanhgiaohn@yahoo.com.

Wind, 1996). Many authors have researched this issue and there is a general agreement that the major components of industrial buying behavior are: the buying process; the buying center; and factors affecting the buying process and the buying center (Baptista, 2001). Each of these areas consists of several parts.

Wind and Thomas (1980, p. 242) have described the industrial buying process in the following way: “From the time at which a need arises for a product or service, to the purchase decision and its subsequent evaluation, a complex myriad of activities can take place”. The elements in the buying process are: overall buying process, identification of needs, identification of alternatives, set purchase and usage criteria, evaluate alternative buying actions, purchase decisions, and post-purchase evaluation.

The major determinants of industrial buying behavior can be divided into four groups of factors (Baptista & Forsberg, 1997): environmental factors (environmental determinants of buying behavior which include physical, technological, economical, political, legal, and cultural influences), organizational factors (organizational determinants of buying behavior that include technology, structure, tasks, and people), interpersonal factors (interpersonal relationships among the members in the buying center, that is, interpersonal determinants of buying behavior that include different roles played by the participants, how they influence each other, and their relationships), individual factors (individual characteristics of the member, including motivation, cognitive structure, personality, learning processes, and perceived roles).

The term “buying center” was first used by Robinson et al. (1967, p. 101) as “The individuals who are related directly to the purchasing process, whether users, buying influencers, decision makers, or actual purchasers”. Webster and Wind (1972) came to the conclusion that only a subset of the organizational actors are involved in a buying situation. Further, they proposed five roles performed by buying center members: Users are those in the organization who use the purchased product, Buyers are those with formal responsibility and authority for contracting with suppliers, Influencers symbolize those who influence the decision process by providing information and criteria for evaluating alternative buying actions, Deciders refer to those with authority who choose among alternative buying actions, Gatekeepers designate those who control the flow of information into buying center.

In order to make the best choice and succeed in business, organizations should base their choice of supplier upon critical evaluation criteria. Four classical criteria are quality, delivery, price and service, seemingly the importance between these have changed during the years (Table 1) (Bharadwaj, 2004; Lehmann & O’Shaughnessy, 1974; Matthyssens & Faes, 1985).

Table 1 The Importance of Different Classical Decision Criteria

Study	Rank order of decision criteria			
	1	2	3	4
Lehman & O’Shaughnessy (1974)	Delivery	Price	Quality	Service
Evans (1981)	Delivery	Price	Quality	Service
Lehman & O’Shaughnessy (1982)	Quality	Price	Service	Delivery
Wilson (1994)	Quality	Service	Price	Delivery

Lehman & O’Shaughnessy (1974) examined the importance of different choice criteria (attributes). Their study was conducted on the base of 17 attributes that are a breakdown of the four classical choice criteria, and thus somewhat interrelated. The authors found that the relevance of the attributes is mainly dependent on product type, the buying situation at hand and the perception of the buyers. These findings were also supported by prior

work from Kelly & Coaker (1976) where five of seven investigated choice criteria differed depending on organization as well as Dempsey's (1978) study of the importance of different attributes in industrial vendor selection. These researchers (Dempsey, 1978; Kelly & Coaker, 1976; Lehman & O'Shaughnessy, 1974) have found that generally the purely economical factors (including delivery, capability, quality, price, repair service, technical capability and past performance) were the most significant factors (Table 2).

Table 2 List of Common Choice Criteria in Prior Studies

<ul style="list-style-type: none"> • Adjustment to company' needs • Aid and advice • Attitude toward buyer • Performance history • Confidence in the salesman • Convenience of placing order • Control systems • Order cycle time • Reliability of delivery date promised • Suppliers accuracy in billing • Suppliers accuracy in order handling 	<ul style="list-style-type: none"> • Production facilities • Packaging capability • Data on reliability of product • Technical specifications • Ease of operation or use • Quality • Ability to fill emergency orders • Geographical location • Delivery capability • Price • Financial position • Financing terms
---	--

Factors such as quality, delivery, price and service are often seen as significant buying criteria when choosing suppliers. Whether these are controllable or uncontrollable depends on the situation at hand. The emphasis of these factors changes depending on the buying organization, specific buying situation and the individuals involved in the buying decision (Bharadwaj, 2004; Robinson et al., 1967, Webster, 1965).

Deng and Wortzel (1995) conducted a study of the supplier selection criteria used by US importers in three merchandise categories. In all categories, the most important criteria were price and product quality, followed by on time delivery. The geographical location of the seller and the brand name was of little importance in the supplier selection decision.

The importance of industrial customers can mean that they are able to negotiate on price, terms and specifications, means that it is both important and possible for sellers to form close, long term relationships with buyers. There are other reasons too for the importance of long term relationships between customers and suppliers.

This literature review suggests that five variables constitute the main explicative factors of regular and stable industrial buying behaviors. First, it is generally admitted that trust, commitment to the exchange relationship and satisfactory performance, are the important characteristics of a good buyer — seller relationship. Parallel to these variables, the effect of cooperation and non shared dependence (i.e., unilateral dependence of a customer to his supplier) on the length of the relationship have been, too, extensively studied in the literature (Han et al., 1993).

Satisfaction appears in the vast majority of the studies on regular and stable buying behavior. It is, very often, considered as the determinant variable of influence on the willingness to continue the relationship (Anderson et al., 1990). Although some recent studies underline that being satisfied is not enough for a customer to develop regular and stable buying behavior (Henning-Thurau & Klee, 1997; Reicheld, 1996), satisfaction can be considered as a necessary but not sufficient condition for the development of regular and stable buying behavior.

Many researches also show that trust is determining in the continuity of industrial relationships. The

customer feeling confident won't have any real reason to switch from his supplier and, in this stable relationship; he will easily become a regular consumer. More, as the length of the relationship increases, the feeling of confidence grows (Anderson & Weitz, 1992). In conclusion, satisfaction, trust, commitment can reflect customer loyalty (Jarvis & Wilcox, 1977).

From these studies, this study can conduct the independent variables and dependent variable with their components in Table 3.

Table 3 Scale Using for Independent Variable

Independent variable	Components	Explain
Relationship	Trust	Customers' perception of trust of seller to customers' choices
	Commitment	Customers' perception of commitment of seller to customers' choices
	Satisfaction	How satisfaction performance influence customer buying behavior
Pricing	Promotion	Customers' buying patterns based one promotion
	Rebate	Customers' buying patterns based one rebate
	low initial price	Customers' buying patterns based one initial low price
Customer service	Debt term	Influence of debt term to customers' choices
	Solve complaint	Ability to solve customer's complaint quickly.
	Good Attitude	Importance of attitude toward customer behavior
Channeling	on time delivery	Ability to deliver on time indicated.
	urgent order	Ability to adapt an urgent order toward customer behavior.
	guarantee	Importance of guarantee delivery to customer choice
Quality of product	texture	Smoothly texture of product affect to customer choice.
	flavor	Unique flavor of product affect to customer choice.
	packing	Packing of product (tin, carton, pail) affect to customer choice.
	design	Design easy to use affect to customer choice.

According to what mentioned above and based on qualitative research, the hypothesis for this study is presented as below:

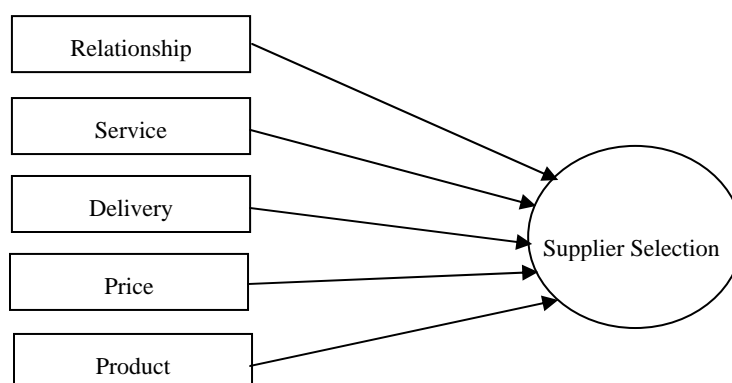


Figure 错误!文档中没有指定样式的文字。 **The Conceptual Model of Selection BOS Supplier**

3. Data Analysis

In the qualitative research, face-to-face interview and focus group were conducted to explore potential factors that may have an impact on the buying decision of customers in relation to coffee roasting industry. One group of six distributors was recruited for focus group discussion. Face-to-face interview was applied for

managers, staff of sales & R&D in the BOS supplier.

In the quantitative research, the survey is conducted with face-to-face interview. There would be a list of roasting coffee customers from associate data which should be chosen randomly as samples for this research. Each customer has the same probability of being chosen for samples. Therefore, Simple Random Sampling method was used in this study and interviewers were chosen randomly from sampling frame of current customers (Trong & Ngoc, 2008). Total current coffee roasting customers in Viet Nam is over 350. The sample includes 55 men and 33 women, aged from 30 to over 40 years old with the majority 97% of respondents. Almost all of them (near 90%) have used BOS for coffee roasting for over a year. Of 88 respondents, 38% is director of company, 29% is technical chief, Purchasing staff take about 29% and the others (vice director) about 7.9%. It means that the decision maker depend mostly from owner, due to their small business.

There are 47.2% of respondents who have BOS volume less than 0.5 MT per month; 27% of respondents who have BOS volume from 0.5 to 1 MT each month; 18% of respondents have 1 to 3 MT per month and only 6.7% of respondents have BOS volume from 3 MT per month. Regarding the customer experience, more than half of the respondents are above 3 years. The group of 1-3 years is the quite common with 30%. The others are under 1 year (11%).

Product attributes which affect the quality of a BOS such as “flavor” and “texture” are considered highly important with mean = 4.47 and 4.43 by most of the respondents. For Pricing factor, promotion & rebate are considered very high important with mean = 4.4 and 4.5. Among other factors, Ability to deliver urgent order, Supplier’s commitment with their products & service are considered important by the majority of respondents. Findings are shown in Table 4.

Table 4 Descriptive Analysis of Factors Influencing Customer Behavior

Variables	N	Mean	Std. Deviation
Quality - flavor	88	4.477	0.711
Quality - texture	88	4.432	0.770
Quality - packing	88	4.159	0.709
Quality - design	88	3.955	0.710
Service - payment	88	4.193	0.641
Service - complain	88	4.023	0.727
Service - attitude	88	3.830	0.874
Channel - time delivery	88	4.386	0.576
Channel - urgent order	88	4.455	0.545
Channel - guarantee	88	4.318	0.653
Relation - trust	88	4.386	0.576
Relation - commitment	88	4.455	0.545
Relation - satisfaction	88	4.318	0.653
Price - reduce	88	4.125	0.603
Price - promotion	88	4.420	0.562
Price - rebate	88	4.534	0.566

3.1 Reliability Analysis

In the reliability analysis, items that have total-item correlation smaller than 0.3 were removed from the scales. The remaining items were tested for reliability. The resulting Cronbach's alpha of each scale is presented in Table 5.

Table 5 Reliability Statistic of Five Independence Factors and One Dependence Factor

Reliability Statistics		
Factors	Number of items	Cronbach's alpha
Quality	4	0.697
Service	3	0.7387
Channel	3	0.7746
Relation	3	0.77
Price	3	0.78
Supplier selection	5	0.6714

According to reliability analysis, five independent factors and the dependent factor (supplier selection) have Cronbach's alpha value higher than 0.6 and corrected Item-Total Correlation higher than 0.3. So, they are accepted for next analysis.

3.2 Factor Analysis

Principal axis factoring with rotating Promax reflex data structure more exactly than Principal component with rotating Varimax (Gerbing & Anderson, 1988). After two steps, 13 reliable items continue with rotating Promax method which can minimize the number of variables with very high loading score on a factor, still 5 factors were withdrawn from 13 variables; KMO = 0.782 and the significant at .000, so it can be concluded that sample was suitable for factor analysis. Besides, these items explained 73.05% of the overall variance and Eigenvalues of five factors are greater than 1.0. The five factors with factors loading as in Table 6.

Table 6 Factor Analysis with Promax Method

	Component				
	1	2	3	4	5
Quality - flavor					
Quality - texture					
Quality - packing				.748	
Quality - design				.933	
Service - payment			.603		
Service - complain			.802		
Service - attitude			.937		
Channel - time delivery	.830				
Channel - urgent order	.806				
Channel - guarantee	.878				
Relation - trust		.809			
Relation - commitment		.729			
Relation - satisfaction		.852			
Price - reduce					
Price - promotion					.726
Price - rebate					.936
Cronbach's alpha	0.7746	0.7832	0.7387	0.6613	0.6472

3.3 Multiple Regression

Multiple regression is used to identify the association between the dependent variable and many independent variables. The table below shows the variance of this analysis.

Table 7 Anova Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.058	5	2.012	27.492	.000 (a)
	Residual	6.000	82	.073		
	Total	16.058	87			

Sig. value less than 0.05, so this model has high reliability level as well.

The coefficients and significant levels are illustrated in Table 8.

Table 8 Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.750	.341		2.201	.031		
	Quality	.011	.053	.015	.201	.841	.791	1.264
	Service	.192	.053	.273	3.633	.000	.810	1.235
	Channel	.032	.068	.036	.464	.644	.740	1.350
	Relation	.229	.057	.327	4.025	.000	.691	1.446
	Price	.377	.068	.425	5.509	.000	.765	1.308

The relation between purchase decision and other factors is demonstrated by the following equation:

$$\text{PURCHASE DECISION} = 0.75 + 0.192 \cdot \text{SERVICE} + 0.229 \cdot \text{RELATION} + 0.377 \cdot \text{PRICE}$$

The relative importance of each predictor can be estimated using beta value. In the equation, Price has the biggest absolute beta value (0.425), followed by Relationship (0.327) and Service (0.273), while quality and channel are not accepted statistically (sig. = 0.841 and 0.644 respectively). As a result, Price has the strongest influence on the tendency of supplier selection for BOS in coffee roasting industry, followed by Relationship, then Service.

The Adjusted R^2 of the multiple regressions is 0.604 (Table 9), means that the remaining three factors account for about 60.4% of the variance in the dependent variable. It implies that there may be other factors that can be used to explain the tendency of supplier selection of BOS in coffee roasting industry. Those factors are not uncovered through this multiple regression analysis.

Table 9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.791(a)	.626	.604	.27050	1.733

Variance inflation factor (VIF) value of 5 variables is under 2; therefore, it can be confirmed that this model is not violated by multi-collinearity (Trong & Ngoc, 2008).

4. Recommendations

As revealed by the study, customers of BOS products appeared to be influenced by the pricing, relationship

and services with suppliers (the BOS seller). As customers increasingly care about their cost saving, and aware of quality of products and delivery, the BOS seller tends to play the role of a professional consultant. The best promotion strategy therefore will be the one that targets the sellers. Direct-to-customer promotion and rebate based on volume can be used to stimulate the supplier selection.

Regarding pricing strategy the study provides an implication that may be of interest. As widely recognized, BOS are usually generics that have many substitutes so that the price is elastic. The suppliers could further incentivize sales to not sell on price by structuring their quarterly bonus around the obligation of maintaining an average gross profit percentage, and provide sales team with power to make deals successfully.

Developing the buyer-seller relationship can be seen as a process of how to reduce the uncertainty and the gap between them; of how to enhance both actual and perceived commitment. The suppliers should try to impress the customers, to encourage them to raise feedback. Salesperson should spend more time to visit customers, the higher frequency of visiting the customers the more feedbacks they get. Besides suppliers should implement other methods such as loyalty program, or special offerings.

Regarding the customer service, staff's attitude, payment term and technical support to solve problem play the important roles in meeting customers' requirements. The lack of follow-up and responsibility of action creates lower customer. Salespersons should contact customers directly, deliver service directly to customers and at the same time receive suggestions and complaints from customers, so salespersons play very critical roles in contributing to service quality. Therefore, improving the qualification of these staff will be the best way to enhance buying decision of customers.

5. Conclusion

The volume of BOS for coffee roasting industry in Vietnam has developed rapidly at the growth rate of about 10% per year. This gives the chance for domestic manufacture to expand their business activities. Demand of BOS is forecasted to increase continuously in the next coming years.

The research was based on the qualitative method which used focus groups and discuss with experts to explore the potential factors, and the quantitative method using questionnaire to test the model.

This study showed that pricing has the strongest influence on customers' behavior of BOS in coffee roasting industry, in which the customers care much about promotion and rebate program. The relationship and customer services also play important roles in buying decision; while the quality of BOS and the channels of distribution have no statistical impacts on the buyers' purchasing decision. These findings can help suppliers' management in adjusting their strategy and policies of selling BOS.

The research site was conduct at the quota sampling of relatively small sample ($n = 88$), therefore, implications for market segmentation were not obtained. The generalization of the results would have been better if research would be conducted on a larger sample.

References

- Anderson E. and Weitz B. (1992). "The use of pledges to build and sustain commitment in distribution channels", *Journal of Marketing Research*, Vol. 29, pp. 18-34.
- Anderson J. C. and Narus J. A. (1990). "A model of distributor firm and manufacturer firm working partnerships", *Journal of Marketing*, Vol. 54, pp. 42-58.
- Baptista C. and Forsberg L. O. (1997). "Industrial buying behavior in the Swedish and Polish mining industries — A comparative study", Licentiate Thesis, Luleå University of Technology.

- Bharadwaj N. (2004). "Investigating the decision criteria", *Industrial Marketing Management*, Vol. 33, pp. 317-323.
- David A. Reid and Richard E. Plank (2003). *Fundamentals of Business Marketing Research*, Haworth Press: Oxford.
- Dempsey W. A. (1978). "Vendor selection and the buying process", *Industrial Marketing Management*, Vol. 7, pp. 257-267.
- Deng G. and Wortzel L. H. (1995). "Importer purchase behavior: Guidelines for Asian exporters", *Journal of Business Research*, Vol. 32, No. 1, pp. 41-47.
- Geyskens I., Steenkamp J. B., Scheer L. K. and Kumar N. (1996). "The effects of trust and interdependence on relationship commitment", *International Journal of Research in Marketing*, Vol. 13, pp. 303-317.
- Han S. L., Wilson D. T. and Dant S. P. (1993). "Buyer-supplier relationships today", *Industrial Marketing Management*, Vol. 22, pp. 331-338.
- Available online at: <http://www.vietnamese-coffee.com>.
- Available online at: <http://www.wilmar-international.com>.
- Jagdish N. Sheth and Arun Sharma (2004). "Behavioral approaches to industrial marketing: Extant and emerging research", in: *Handbook of Industrial Marketing*, Gabler Verlag, pp. 147-173.
- Jarvis L. P. and J. B. Wilcox (1977). "True vendor loyalty or simply repeat purchase behavior", *Industrial Marketing Management*, Vol. 6, pp. 9-14.
- Kelly J. P. and Coaker J. W. (1976). "The importance of price as a choice criterion for industrial purchasing decisions", *Industrial Marketing Management*, Vol. 5, No. 5, pp. 281-293, doi: [http://dx.doi.org/10.1016/0019-8501\(76\)90023-7](http://dx.doi.org/10.1016/0019-8501(76)90023-7).
- Lehmann D. R. and O'Shaughnessy J. (1974). "Differences in attribute importance for different industrial products", *Journal of Marketing*, Vol. 38, No. 2, pp. 36-42.
- Martin Tina (2005). *Industrial Buying Behavior in the Telecommunication Market*, Lubla University of Technology.
- Morgan R. M. and S. D. Hunt (1994). "The commitment-trust theory of relationship marketing", *Journal of Marketing*, Vol. 58, pp. 20-38.
- Robinson P. J., Faris C. W. and Wind Y. (1967). *Industrial Buying and Creative Marketing*, Allyn and Bacon Inc., Boston.
- Sheth J. N. (1973). "A model of industrial buyer behaviour", *Journal of Marketing*, Vol. 37, No. 4, pp. 50-56.
- Sheth J. N. (1996). "Organizational buying behaviour: Past performance and future expectations", *Journal of Business & Industrial Marketing*, Vol. 11, No. 3/4, pp. 7-24.
- Trong H. and Ngoc C. N. M. (2008). *Analyzing the Dataset with SPSS*, Vol. 1 & 2, Hong Duc Publisher.
- Webster F. E. and Wind Y. (1972). "A general model for understanding organizational buying behavior", *Journal of Marketing*, Vol. 36, No. 2, pp. 12-19.
- Wilson D. T. (1995). *An Integrated Model of Buyer-Seller Relationships*, the Pennsilvlavina State University, No. 10-1995.
- Wind Y. and Thomas R. J. (1980). "Conceptual and methodological issues in organizational buying behavior", *European Journal of Marketing*, Vol. 14, No. 5/6, pp. 239-246.