



A causal relationship model of purchasing behavior of consumers in Thailand regarding processed fish products

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Abstract

This research developed a causal relationship model of purchasing behavior of consumers in Thailand regarding processed fish products. The research sample of 700 consumers of fish products in the southern part of the country was recruited using a multi-stage sampling method. The results indicate that the model was consistent with the empirical data ($\chi^2 = 1960.84$, $df = 403$, $\chi^2 / df = 4.87$, $RMSEA = 0.07$, $CFI = 0.92$, $TLI = 0.91$, $SRMR = 0.06$). The results of data analysis showed that factors related to both consumers and external factors had direct and statistically significant influence on the consumer purchasing behavior of processed fish products. The factors related to consumer comprised—perception of product quality, effect of family member, mood-related product, attitude of consumer, and health consciousness—had a direct and positive influence on consumer purchasing behavior at levels of 0.397, 0.163, 0.145, 0.144, and 0.099 respectively. The external factors—suitability of product price and suitability of store environment—directly and positively influenced consumer purchasing behavior at levels of 0.290 and 0.156, respectively. In addition, the consumer purchasing behavior regarding processed fish products was indirectly but positively and significantly influenced by factors related to the consumers and the external factors. Consumer family members, consumer experience, and perception of product quality had an indirect but positive influence on consumer purchasing behavior at levels of 0.082, 0.074, and 0.013, respectively. The external factors of suitability of product price and convenience-related product indirectly but positively influenced the purchasing behavior of consumers at levels of 0.318 and 0.277, respectively. The results also showed that these causal variables could mutually explain 58 percent of the variance of consumer purchasing behavior regarding processed fish products.

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Introduction

Currently, the food industry generates a large amount of revenue for the country. Processed fish products such as Surimi, are processed by mixing with various food components to make ready-to-cook food products, which are widely accepted as part of the present day fast pace of living. Most people are faced with time constraints and

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need to attend to a variety of activities. This context has contributed to a continuing growth in sales of processed fish products. This is confirmed by the sale value of processed fish products in 2010 and 2013, of 1,471 million baht and 2,159 million baht, respectively (Euromonitor International, 2014, pp. 4–5).

Despite the continuing popularity of processed fish products, the business still has problems with unequal sales of certain products which are not regularly sold. Some products have very low sales and some have relatively low sales, while some have pretty high sales. The low volume products cut down the overall product sales. As a result, a business may fail to achieve its overall sales target. It is important that the seafood processing business operators know what factors affect consumer purchasing behavior regarding processed fish products. Research on the buying behavior of the consumers of processed fish products is needed in enabling the entrepreneurs in this area who access the findings and solutions to use them as a means of achieving their sales goal. Therefore, they will be able to apply this knowledge to develop their sales activities to meet their business target by turning the low-volume products into high-volume products, and at the same time, meet the needs of and satisfy their consumers.

However, research on the buying behavior of processed aquatic products in the past has been relatively limited. In addition, in the research done by Choo, Chung, and Pysarchik (2004) and Brčić-Stipčević and Petljak (2013), some factors of consumer behavior such as health considerations, consumer experience, emotions associated with the product, product quality awareness, and effect of family members were not studied. Therefore, the current research aimed to consider these various factors to give an overall view and understanding of the consumer purchasing behavior regarding processed fish products. This research is hoped to fill the gaps in consumer behavior research for appropriate solutions to sales problems associated with processed fish products. This research aimed to develop a causal relationship model of consumer purchasing behavior regarding processed fish products in Thailand.

Literature Review

The consumer behavior of purchasing processed fish products is related to several types of variables including: 1) external factors, such as convenience related product, price suitability, and suitability of the shop environment; 2) factors related to consumers, such as effect of family members, consumer attitudes, product-quality awareness, emotions associated with the product, consumer experience, and health considerations; and 3) the decision making process, for example, awareness of the problem and searching for information (Kotler & Keller, 2009).

External Factors

Convenience-related product refers to the simplicity, speed, and convenience of purchasing and cooking processed fish products. Kotler and Keller (2009) concluded that the factor of convenience-related product influences several factors such as consumer attitudes, health

consciousness, consumer experience, emotions associated with the product, and effect of family members. In addition, the findings from previous research showed that convenience related to product influences purchasing behavior regarding food products (Fitzgerald, Heary, Nixon, & Kelly, 2010; Olsen, 2003, pp. 199–203, 205–207).

Suitability of product price refers to the consistency of the price and value of processed fish products offered for sale at the outlet. Kotler and Keller (2009) explain that proper pricing influences the factors such as the consumers' emotions associated with the product, product quality awareness, and effect of family members. This concept is in line with the findings of Honkanen and Frewer (2009) and Radder and le Roux (2005) that the optimum pricing influences consumers to make a purchase.

Suitableness of store environment refers to the consistency of the store environment to consumer demand. In general, consumers will evaluate the environment outside the store before deciding whether they should step in. If the shop organizes both its external and internal environment well, the consumers will decide to enter the shop; if the inside of the store presents the product and creates a positive mood, the decision to make a purchase is easier. This is consistent with Turley and Miliman's (2000) and Chebat and Michon's (2003) findings which assert that if the store provides the environment, both external and internal, to attract customers appropriately, it will motivate customers to buy more products.

Factors Related to Consumers

The consumer, walking into any store after having a general idea of the product, usually has certain attitudes toward the product that may be positive or negative. This is a result of the store environment. If the supplier is able to provide the most positive environment, it can motivate consumers to be more likely to make a purchase. Ajzen and Fishbein (1980) assert that one's attitude influences one's behavior. Olsen (2003, pp. 199–201, 206–207) and Pieniak, Verbeke, Vanhonacker, Guerrero, and Hersleth (2009) in their studies assert that consumer attitude, based on an analysis of the overall store environment influences purchasing behavior.

In general, individual family members influence each other and they have to make a decision together. This concept is in line with the findings of Chikweche and Fletcher (2010) and Fitzgerald et al. (2010), showing that most purchasing behaviors are influenced by family members. Childers and Rao (1992) found that the influence of family members is a factor that affects problem recognition of the consumers. In addition, the effect of family members is also a factor affecting the perception of product quality and attitudes of consumers (Caruana & Vassallo, 2003; Hsieh, Chiu, & Lin, 2006; Labrecque & Ricard, 2001).

Perception of product quality normally depends on the senses perceived through the eyes, nose, mouth, and skin. Therefore, if the manufacturer can develop products to meet the needs of consumers through their sensory organs, sales of goods will be higher. Honkanen and Frewer (2009) and Radder and le Roux (2005) believe that the consumer decision to buy or not to buy a product is mostly the result

of their awareness of the product quality. Song, Lee, Kang, and Boo (2012) also maintain that the perception of product quality affects the problem awareness.

Mood-related product involves the consumers experiencing food products through their perceptive senses organs. If the perception is positive, the decision to buy the product is likely to occur, but if their perception is negative, the decision to buy the product will not happen. The positive emotion toward the product is an important issue because it can make consumers more easily make a purchase. The findings of Neumark-Sztainer, Story, Perry, and Casey (1999) and Prescott, Young, O'Neill, Yau, and Stevens (2002) support the idea that the decisions of purchasing will be easier whenever a consumer has a positive emotion toward the product.

Experience of consumers is the perception process related to the consumer food products, which can be sensed by the sensory organs. If the seller has created a satisfying experience for the consumer, the decision to buy the products again will be easily made. Mitchell and Dacin (1996) and Tsur (2008) also confirm that consumer experience has a major influence on awareness of the problem. In addition, the findings of Hernández, Jiménez, and Martín (2010) and Mak, Lumbers, Eves, and Chang (2012) show that consumer experience directly influences purchasing behavior.

Health consciousness is the process of thinking about issues of physical health when deciding to buy food products. The consumers decide to buy non-toxic food products, hoping these will keep them in good health and have a strong body and a good, happy life. This is in line with the research findings of Weinstein, Bisogni, Frongillo Jr, and Knuth (1999) and Share and Stewart-Knox (2012). The results of these research studies show that most consumers focus on health when purchasing food products. Thus, health consideration has become one of the influencing factors for purchasing food for consumption. Olsen (2003, pp. 201–202, 205–207) also found that most consumers always pay close attention to buying health food products.

The Decision Making Process

Problem recognition is the situation when the consumers recognize their problems and what products to buy to correct these problems. When consumers are not satisfied with the product they have bought or the stored product has been used up or expired, the consumers will search for information on the products, they will need to buy. This condition complies with Kotler and Keller's (2009) and Hawkins and Mothersbaugh's (2013) notion that recognition of problems of the consumer brings about their search for information on the product to be purchased.

Information search is the process by which consumers obtain information to make a decision to buy a food product. In the search process the consumer may use a variety of sources such as a people, documents, books, or magazines. The study results of Bagozzi (2012) and Simpson, Griskevicius, and Rothman (2012) showed that a certain number of consumers did a serious search before

deciding to buy the products. Therefore, the search for information is a factor that influences consumer purchasing behavior at a certain level.

Purchasing Behavior Regarding Processed Fish Products

Purchasing behavior regarding processed fish products refers to the behavior of consumers related to the purchase of fish products, such as the amount of money spent on purchases and the number of purchases made in a month. Ali, Kapoor, and Moorthy (2010) and Chan (2001) explain that the amount and frequency of purchases reflect consumer purchasing behavior.

Consumer Behavior Theory

Kotler and Keller's (2009) Consumer Behavior Theory was the main theory applied in developing the model explaining the consumer behavioral patterns in buying processed fish products in the present research. Other theories such as the Theory of Consumer Purchasing Behavior (Hawkins & Mothersbaugh, 2013); the Food Choice Theory (Sobal, Bissogni, Devine, & Jastran, 2006), Utility Theory (Jevons, Walras, & Marshall, as cited in Perloff, 2009), and Incentive Theory (Myers, 1995) were also applied to supplement the purposed model.

Kotler and Keller (2009) describe in their theory the external stimulus for purchasing including the product, price, and location are factors leading to the internal or psychological factors of perception, experience, and consumer attributes including family members, all of which can influence their purchase decision and purchasing behavior in a sequence.

Hawkins and Mothersbaugh (2013) propose via Consumer Behavior Theory that the external influencing factors, such as family member and the internal influencing factors, such as emotions and attitudes, stimulate demand and this results in the purchasing decision process and subsequently in making purchases.

Sobal et al. (2006) describe the Food Choice Theory as involving factors that influence the purchase of food are in relation to: 1) the person's way of living (environment and personal concept); 2) influencing factors (mood-related product and family members); and 3) the personal food system (convenience of buying and preparing food, price related, and health related).

In addition, Perloff (2009) discusses the Utility Theory, proposed by Jevons et al., whereby individual consumers are aiming to make the most satisfying purchases; while Myers (1995) discusses consumer buying behavior as being based on the Incentive Theory concept, believing that the external factors or stimuli encourage purchases by consumers.

With reference to the results of the review of research papers related to purchasing behavior, it can be concluded that the abovementioned theories can effectively explain the behavior of consumer purchases. In addition the results presented in several other research studies—for example, Ali et al. (2010), Brčić-Stipčević and Petljak (2013), Fitzgerald et al. (2010) and Radder and le Roux (2005)—also support the significance of these theories in consumer behavior.

Hypothesis

The causal relationship model of consumer purchasing behavior regarding processed fish products in Thailand developed for this study is consistent with the empirical data.

Methods

This research involved a cross-sectional design study based on the quantitative research method, using a questionnaire as the tool to collect data. The unit of analysis was the individual level to examine the consistency of the causal relationship model with the obtained empirical data and the magnitude of influences of the causal factors on the resultant factors.

Participants

The population of this research was consumers who purchased processed fish products from stores in the 14 southern provinces of Thailand. The sample was 700 consumers who purchased processed fish products from stores in seven southern provinces in Thailand. The research sample was selected using a multi-stage sampling technique. The sampling process consisted of three steps: 1) a simple random sampling technique was used to select 7 from the 14 provinces in southern Thailand; 2) A stratified sampling technique was used to select stores from the seven selected provinces in southern Thailand; 3) an accidental sampling technique was used to select consumers who purchased the processed fish products from those stores in step 2, resulting in 700 consumers.

Data Collection

Data were collected using questionnaires answered by using questionnaires 700 consumers who purchased processed fish products. The data collection period was from 4 October to 13 December 2015. The questionnaire used in this study had been validated using the content validity index (CVI) and Cronbach's alpha coefficient was applied to make sure that each question has a content validity index of 0.8 or higher. The content validity of the whole questionnaire was 0.91. In addition, each questionnaire had a reliability level ranging from 0.708 to 0.948.

Data Analysis

Data obtained from the questionnaire were entered into the SPSS program and saved as a DAT file. Then, data were analyzed using Structural Equation Modeling (SEM). The parameters of the model were estimated using the Maximum Likelihood method, then the model conformance with the empirical data was validated by considering the consistency of the variance and covariance matrix of the model with the variance and covariance matrix of the empirical data using the measure of association statistics: $CMIN/DF < 5$, $RMSEA \leq 0.08$, $CFI > 0.85$, $TLI \geq 0.90$, and $SRMR < 0.10$. Finally, the hypothesis of the research was tested.

Results

Structural Model

The results of the consistency investigation of the causal relationship model of consumer purchasing behavior

Table 1
Influence of causal factor to resultant factor

Causal factor	Resultant factor	Direct effect	Indirect effect	Total effect
Perception of product quality	Purchasing behavior regarding processed fish products	0.397***	0.013*	0.410***
Suitableness of product price		0.290***	0.318***	0.608***
Influence of family member		0.163**	0.082***	0.245***
Suitableness of store environment		0.156***	—	—
Mood-related product	Information search	0.145**	—	—
Attitude of consumer		0.144**	—	—
Information search		0.142**	—	—
Health consciousness		0.099*	—	—
Convenience related product	Problem recognition	—	0.277***	—
Experience of consumer		—	0.074**	—
Problem recognition		0.801***	—	—
Experience of consumer		0.652***	—	—
Influence of family member	Influence of family member	0.399***	—	—
Perception of product quality		0.117***	—	—
Convenience related product		0.705***	—	—
Suitableness of product price		0.152***	—	—
Convenience related product	Mood-related product	0.769***	—	—
Suitableness of product price		0.137***	—	—
Convenience related product		0.893***	—	—
Convenience related product		0.748***	—	—
Suitableness of product price	Perception of product quality	0.635***	—	—
Influence of family member		0.090*	—	—
Convenience related product		0.620***	—	—
Influence of family member		0.382***	—	—

Purchasing behavior of processed fish products (R^2): .58

***significant at the .001 level, **significant at the .01 level, *significant at the .05 level

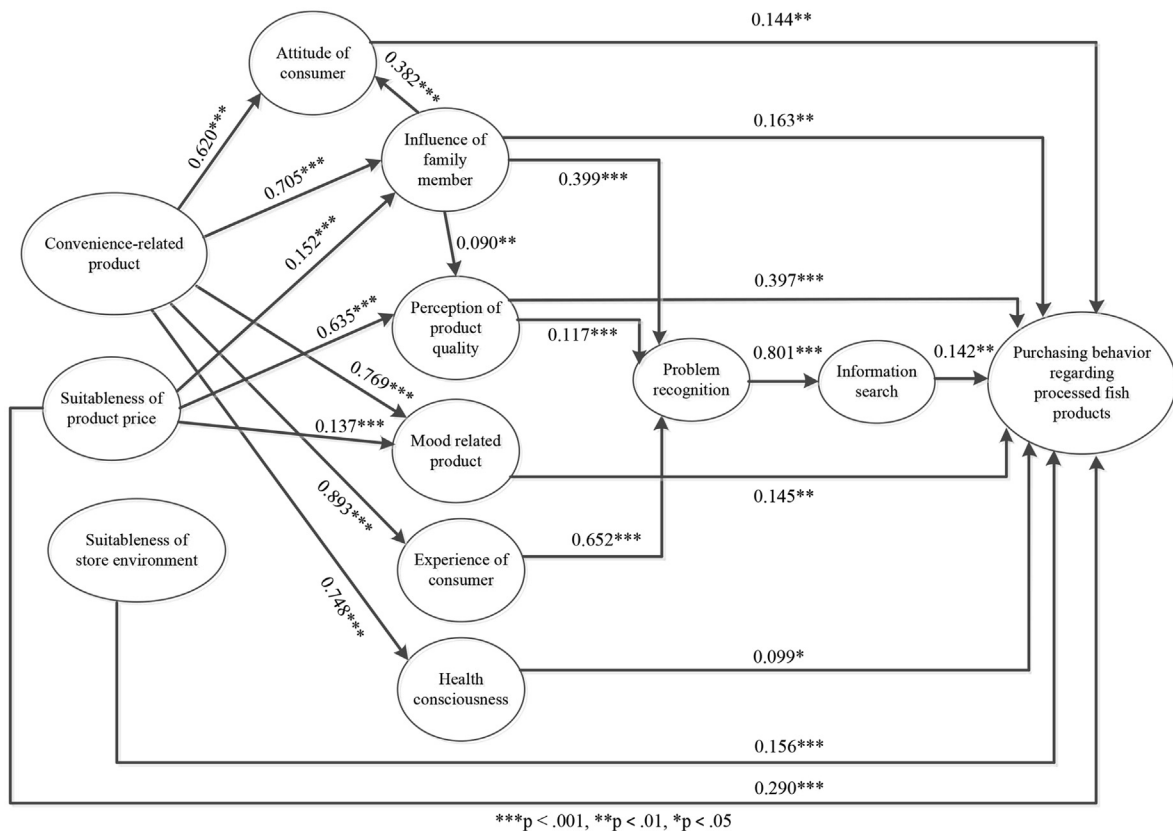


Figure 1 Causal relationship model of consumer purchasing behavior regarding processed fish products

regarding processed fish products in Thailand with the empirical data showed that the model developed in this research was consistent with the empirical data with supporting parameters of $\chi^2 = 1960.84$, $df = 403$, $\chi^2/df = 4.87$, $RMSEA = 0.07$, $CFI = 0.92$, $TLI = 0.91$, and $SRMR = 0.06$.

Causal Relationship Between Factors

The results of the data analysis showed that different causal variables had a direct and positive influence on the purchase behavior of the processed fish products in the range 0.099–0.397. The perception of product quality had the highest directly positive influence on purchasing behavior (0.397) at a statistical level of .001, followed by suitability of product price (0.290) at a statistical level of .001.

In addition, many variables had positive but indirect influence on consumer purchasing behavior regarding the processed fish products in the range 0.013–0.318. Suitability of product price was a factor that indirectly affected the buying behavior at the highest level (0.318) and was statistically significant at .001, followed by convenience-related product (0.277), statistically significant at .001. In total, the causal variables such as attitudes of consumer, effect of family members, perception of product quality, information search, mood-related product, health

consciousness, suitability of store environment, and suitability of product price could explain 58 percent of the variance of purchasing behavior regarding processed fish products (Table 1).

The results of the analysis can be categorized using the causal relationship model of consumer purchase behavior regarding processed fish products in Thailand as shown in Figure 1.

Discussion

The results of the model validation with the empirical data showed that the proposed model was consistent with the empirical data, as the statistics approving the model compliance were higher than for the criteria set. The researchers of the present study developed the model based on the theoretical concepts proposed by Hawkins and Mothersbaugh (2013); Kotler and Keller (2009) and Sobal et al. (2006), who believe that consumers have a variety of external stimuli, such as the right product price, product convenience, suitable store environment, incorporated with factors related to consumers, such as attitudes, effect of family members, perceptions of product quality, emotions, experiences, and health considerations. These stimuli will lead to the consumer process of awareness of problem,

search for information, and finally making a decision to purchasing the processed fish products.

First, perception of product quality was found to have the highest direct and positive influence on consumer purchasing behavior regarding processed fish products at the statistical significance level of .001, as the consumers were able to perceive and assess product quality using a variety of product quality indicators, such as the texture, color, smell, and taste of the product (Bernués, Olaizola, & Corcoran, 2003). These quality indicators contribute to positive attitudes towards consumer satisfaction. Then there is the need to buy such products; thus it is not surprising for consumers to pay more to buy processed fish products and often use the service of processed fish product stores.

This finding corresponds to the study results of Honkanen and Frewer (2009) and Radder and le Roux (2005), who stated that when consumers perceive product quality, it influences their buying behavior. This is also consistent with the Hawkins and Mothersbaugh (2013) and Kotler and Keller (2009) who proposed consumer behavior theories, describing consumer perception of product quality as a key psychological factor influencing consumer purchasing decisions. In the case of processed fish products, if the consumer is aware of the quality of the product and that it satisfies them, this will be followed by the purchase of such products for consumption. Such behavior is consistent with the Utility Theory proposed by Jevons et al., who believe that consumers generally aim to buy products to meet their maximum satisfaction (Perloff, 2009, pp. 74–106).

Second, price appropriateness had the second highest direct and positive influence on purchasing behavior regarding processed fish products at the statistical significance level of .001. If processed fish products have been set at a reasonable price, and the price is consistent with the quality of the product, this will encourage consumers to perceive that the product is worth their money. This will bring about a positive feeling that leads to satisfaction to purchase the product for consumption. This is in line with the findings of Honkanen and Frewer (2009) and Radder and le Roux (2005) which showed that pricing that matches the value of the products will have a positive influence on consumer purchasing behavior. This concept of price matching with product quality is also consistent with Kotler and Keller's (2009) Consumerist Theory of Consumer Behavior which states that the right price of the products will help encourage consumers to buy such products to eat. In addition, this concept is consistent with the principle of Incentive Theory that the right product price is a stimulus to consumers to purchase such product (Myers, 1995).

Conclusion and Recommendation

The model developed in this study was consistent with the empirical data and the assumptions set, indicating recognition of the product quality as the most direct and positive influence on consumer purchasing behavior regarding processed fish products. Other factors which had a significant and positive influence on the buying behavior of the processed fish products were: suitability of product

price, effect of family members, suitability of store environment, mood-related product, attitude of consumer, and health consciousness. The factors having significant positive but indirect effects on the purchasing behavior regarding processed fish products were: suitability of product price, convenience-related product, effect of family members, experience of consumer, and perception of product quality.

Therefore, it can be concluded that factors related to the consumer and external consumer factors are the key factors influencing directly and indirectly consumer purchasing behavior regarding processed fish products. In addition, the causal variables described 58 percent of the variance of the purchasing behavior of processed fish products.

Recommendation

To increase their sales, the processed fish products business operators should develop their products with regard to three aspects according to the research findings. First and most importantly, since the perception of the product quality was found at the highest level to encourage purchasing behavior, the quality of the product (such as product texture, taste, and smell) must be developed to meet the needs of the consumers. The shape of the product imitating the natural feature of aquatic animals and attractive packaging should contribute to purchasing behavior. Importantly, the product should be eaten easily. Second, an appropriate selling price which is consistent with the product quality is preferable to the consumers. Finally, the product should be advertised in a variety of media or sources that can easily be accessed and it must be aimed to encourage consumers to feel the need to buy products.

Based on this study, future research guidelines on processed fish products should consider the areas of consumer demand in various segments to develop the model concerning the appearance, quality, and price of the product to meet the needs of a specific group or sector of consumers, such as high-end consumers or working or office groups.

Conflict of Interest

There is no conflict of interest found in this study.

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