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Three Factors Affecting Elderly Consumers' Decision-Making on Buying Food Materials: A Case of the Fresh Market in Putthamonthon District

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Abstract

This research aimed to study three factors--demographic, marketing, and behavior—that affect elderly consumers' decision-making on buying food materials in the fresh market in Putthamonthon District, Nakhon Pathom Province, Thailand. The researchers used a survey questionnaire to collect data from 400 residents in Putthamonthon District, selected by Taro Yamane method. The data were analyzed by descriptive statistics and a chi-square test for the relationship between the obtained variables. The results revealed that (1) the consumers were concerned with food material quality in terms of freshness, cleanliness and safety, and (2) other factors--price, place and promotion--were also important. The demographic factors influenced purchasing behavior, especially the relationship between the family income factor and the behavior factor.

Keywords: *Marketing factor, decision-making, food materials, fresh market, the elderly*

1. Introduction

Thailand has been approaching an aging society since 2005. In 2019, Thailand had a population of 66.5 million, and the elderly was 11.1 million or 16.73% of the total population. The Ministry of Public Health Thailand reported more than 12 million aged over 60 years old as 18% of the population (Department of Mental Health, 2020). In 2022, Thailand will be a complete aging society with 20% of 60 years old and above of the total population and 28% in 2033 (Foundation of Thai Gerontology Research and Development Institute (TGRI), 2021). A typical aging society holds equal to or more than 20% of 60 years old of the total population (Department of Older Persons, 2021). Aging people need to adjust their lifestyle after working to cope with expenses, and this type of economic pressure results in change in mindset and behavior (Sheridan et al., 2022). SCBEIC (2019) reported a declining trend of marriages from 3.13 in 2007 to 2.98, and the number of couples in 2017 decreased at 5.1%. Married couples feel comfortable living without children (Lee et al., 2022). In addition, Magrelli et al. (2022) pointed out

that some elderly though married and with children do not live with their children and grandchildren. Many seniors are changing their lifestyles after retirement due to economic and social pressure leading to more difficult conditions of life. Such a trend has caused a decrease in the average number of family members.

The elderly living in a large city have adapted into self-reliance away from their children. They have planned for a place to live on their own with good facilities. The researchers found in Putthamonthon District a large number of aging residents who enjoyed urban communities adjacent to Bangkok--connected to transport routes, tourist attractions, reputable educational institutions and local/ strategic development plans for the residential areas (Department of Older Persons, 2021).

Putthamonthon District has currently been responsive to the expansion of the aging society. This type of residential expansion has prompted new services for the elderly, particularly food markets. The researchers therefore would like to investigate these aging residents' consumption behavior and decision on purchasing food materials and the factors involved in their decision-making process. The business sectors need such information to be able to deliver the types of products and services in accordance with food quality and good nutrition for the elderly. It is a good business opportunity for entrepreneurs to move along with the trend of aging society in terms of social structural changes and varied consumer demands due to demographic factors of the newly emerging target group. In this regard, the local government agencies need to adjust their management plan to accommodate the options of life preferred by the elderly.

2. Major Concepts in the Study

2.1 The Concept of Marketing Factors 4P's

Kotler (2016) explained the four marketing factors as follows:

(1) Product: Goods or services are intended to be sold. The business owner is needed to add value and differentiation for greater advantage.

(2) Price: The amount of money to be paid as trade-off for a product and willingness to afford.

(3) Place: The channel for the product to be delivered from the business to the customer.

(4) Promotion: The message and content that the business needs for the client to recognize in the value of the product. The intention of promotion is for the customer to buy the product.

2.2 The Concept of Decision-Making Process

The decision-making process is in five stages:

(1) Data Recognition: The first step is for the customer to perceive the information in varied channels. The business owner is concerned with how to make the targeted audience recognize the presented data.

(2) Data Searching: After data recognition, the customer will find out more details both online and offline. This is important for the business owner to know what the customer is looking for to be able to do a strategic plan on how to provide sufficient information for the customer to have alternatives [chosen products].

(3) Alternative Assessment: In general, the customer would concentrate on specific information of each alternative by comparing the benefits of all alternatives to reach a suitable outcome.

(4) Purchase Decision: For this stage, the customer will select the alternative that gives the best benefits.

(5) Satisfaction after Purchase: It is feedback from the customer after buying the product and utilizing its benefit. This stage is important as a direct impact on the branding of business.

2.3 The Concept of the Elderly

The United Nations (UN) defined the elderly or older persons as people both male and female aged 60+ years old and customized three levels of the aging society as follows; (Sukhothai Thammathirat Open University, 2014):

(1) Aging society - Country or society with people aged 60 years old and above more than 10% of the total population, or people aged 65 years old and above more than 7% of the total population.

(2) Aged society - Country or society with people aged 60 years old and above more than 20% of the total population, or people aged 65 years old and above more than 14% of the total population.

(3) Super-aged society - Country or society with people aged 65 years old and above more than 20% from total population.

3. Literature Review

This section gives a brief literature review on research on marketing mix, customers' decision and satisfaction with products or services.

Erlina & Hermawan (2021) investigated the effect services ive marketing mix of customer loyalty at coffee shops in Bandung. The researchers collected primary quantitative data from 80 respondents. The importance of the marketing mix is to maintain customers' loyalty to a particular product or service. Entrepreneurs or marketers consider major factors, such as product, price, place, promotion, service, atmosphere, and presentation process. The results pointed to the physical evidence factor as the main impact on the customer loyalty and price as the lowest impact factor.

Viet & Anh (2021) studied the role of selected marketing mix elements in consumer-based brand equity creation in the milk industry in Vietnam. The researchers collected both qualitative and quantitative primary data by focus group discussion with 10 consumers and a survey questionnaire with 477 consumers. The objective was to define

and measure the factors of marketing mixes that determine the consumer's brand decision. The research results show brand awareness, brand associations, perceived quality, brand trust, and brand loyalty as affecting brand equity. Particularly, brand awareness and brand trust affect brand loyalty.

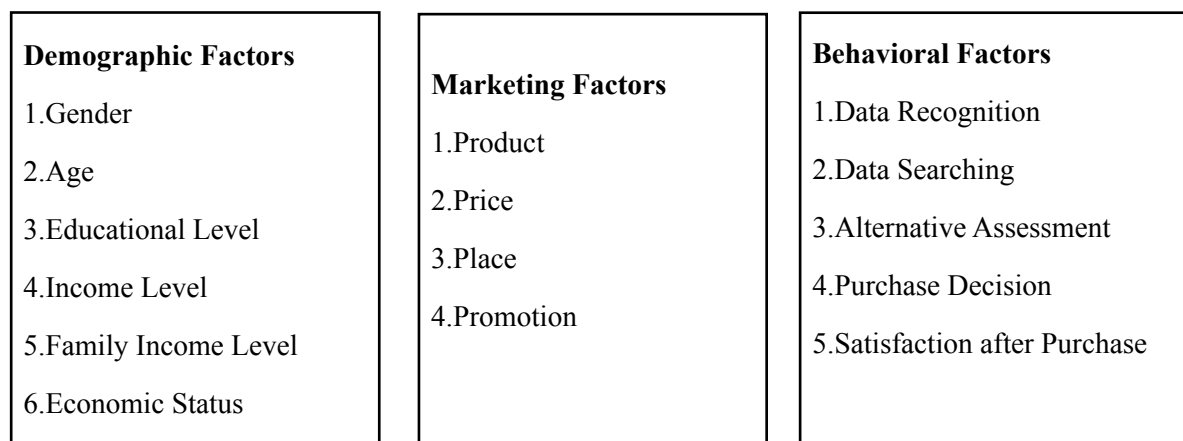
As for related local research on customers' satisfaction with products and services in recent years, there have been numerous studies in customers' satisfaction as a determinant for decision-making on a product, service, or an environment of preference. Here are three examples of such studies, to name but a few current ones. Sriboonnark (2020) asserted that modern business operations require effective innovation and change management. In this regard, both public and private organizations need to adjust their business operations in response to their customers' needs and preferences. Organizations need to develop new goods and services, new production and operating systems to meet the needs of their customers. Ratchavieng et al. (2021) proposed an innovative organization model for efficient business operations in the digital era under the new normal condition in Thailand. Two of eleven elements in the model emphasized appropriate hardware, software and digital platforms for service as well as uniqueness of atmosphere and innovative ecosystem. Phakdeephirot (2021) studied customers' satisfaction with products, services, and quality development of the service provider in wellness tourism in Thailand. The researcher reported the customers' satisfaction with service and environmental management as the main factor determining their decision on selecting the service provider.

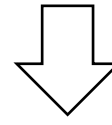
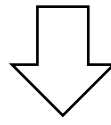
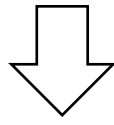
4. Research Objective

This research aimed to study three factors--demographic, marketing, and behavior—that affect consumers' decision-making on buying food materials in the elderly fresh market in Putthamonthon District, Nakhon Pathom Province, Thailand. It was expected that the obtained findings would be useful to business operators in delivering the types of products and services in accordance with food quality and good nutrition for the elderly.

5. Conceptual Framework

Figure 1: Research Conceptual Framework





The Decision-Making to Buy Food Materials in the Fresh Market of the Elderly in Putthamonthon District Nakhon Pathom Province

6. Research Methodology

6.1 Populations and Samples

The population in this study was the elderly aged 60-75 years old (still physically able to manage purchasing food materials by themselves) whose home registered in Putthamonthon District, Nakhon Pathom Province in a total of 2,940 persons, divided into 1,249 males and 1,691 females (The Bureau of Registration Administration, 2022) as shown in Table 1.

Table 1: Population of the Elderly in Putthamonthon (January 2022)

Age	Male	Female	Total
60	122	156	278
61	129	181	310
62	124	171	295
63	112	135	247
64	104	148	252
65	69	116	185
66	87	115	202
67	87	104	191
68	79	98	177
69	73	76	149
70	42	102	144
71	68	63	131
72	55	75	130
73	39	57	96
74	24	49	73
75	35	45	82
Total	1,249	1,691	2,940

The number of samples was concluded by Taro Yamane method determined at 95% of confidence interval, an acceptable error of 5%. The total number of samples collected was 352. Since the researchers were concerned with the accuracy and sufficiency of data to be analyzed, they therefore set the samples at 400 for data collection.

6.2 The Tools Used for Data Collection

The survey questionnaire was divided into three parts: (1) Demographic Factors as Gender, Age, Religion, Marital Status, Educational Level, Income Level, Family Income Level and Occupation; (2) Marketing Factors as Product, Price, Place, Promotion, People and Process; and (3) Behavioral Factors as Data Recognition, Data Searching, Alternative Assessment, Purchase Decision and Satisfaction after Purchase. The first part in the questionnaire was a checklist and the other parts were responses on a rating scale of 1-5 with meanings as follows.

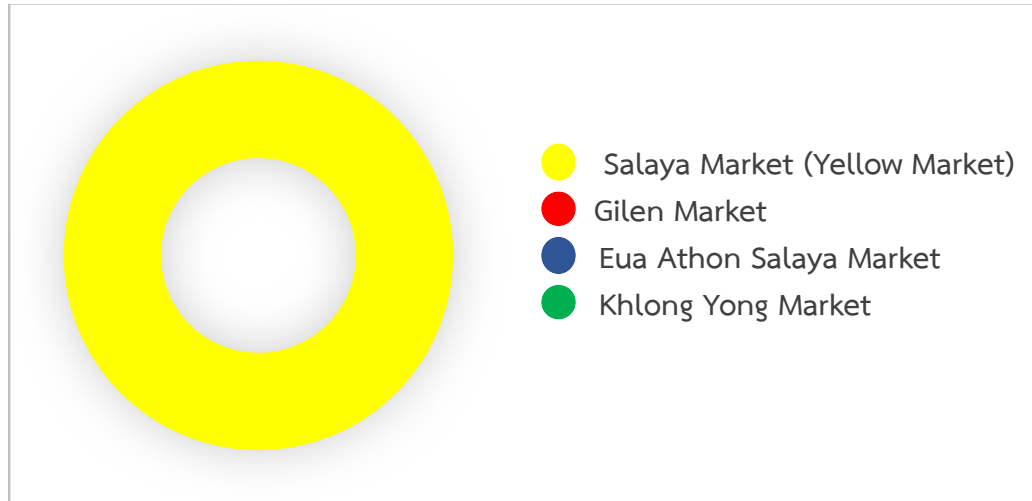
- 1 - Strongly Disagree
- 2 - Disagree
- 3 - Neither Agree nor Disagree
- 4 - Agree
- 5 - Strongly Agree

The accuracy and consistency of the constructed questionnaire were by experts' opinions using the IOC: Index of Item-Objective Congruence method. The five experts' rating of IOC was at 0.84. and those question items rated lower than 0.5 were excluded.

7. Data Collection

The researchers used the validated survey questionnaire to collect data from the selected respondents. There were three sub-districts in Putthamonthon District--Salaya, Khlong Yong and Maha Sawat. Four popular fresh markets in three sub-districts were selected as the areas under study: 100 samples each were collected from four markets: (1) Salaya Market (Yellow Market) and (2) Gilen Market in Salaya Sub-district, (3) Eua Athon Salaya Market in Maha Sawat Sub-district, and (4) Khlong Yong Market in Khlong Yong Sub-district. The total of 400 samples is shown in Figure 2.

Figure 2: The Proportion of Samples Collected in Each Market Area



As seen, the samples were diversified in four specific areas with the purposive sampling method. The researchers collected data from the respondents who came to buy food materials in the specified areas between January-May 2022.

8. Data Analysis

The data analysis was in two parts as descriptive analysis and quantitative analysis. As for the descriptive analysis, the researchers used frequency, percentage, mean, and standard deviation for data on (1) the respondents' demographic variables, (2) their behavior in purchasing food materials, (3) the marketing factors affecting their decision-making, and (4) the problems, obstacles and recommendations identified by the respondents in their decision-making on purchasing the food materials. The researchers used a chi-square test for the relationship between social and economic factors (independent variables) and the behavior in purchasing food materials (dependent variable).

9. Results and Discussion

9.1 Demographic Variables

The respondents' demographic variables were as follows;

(1) Gender

The samples were female at 59% and male at 41%.

(2) Age

The samples were between 60-65 years old at 38%, followed by 33% between 66-70 years old, 29 % between 71-75 years old, with an average of 67.67 years old.

(3) Educational Level

The samples' educational backgrounds were: Bachelor's degree (33.75%), followed by high school (25.75%), diploma (19.50 %), graduate degree (14.50%), and lower secondary school (6.50%).

(4) Income Level

The samples' monthly income was: 15,001-20,000 baht/month (32.50%), followed more than 30,000 baht/month (21.75%), 20,001-25,000 baht/month (16.25%), 25,001-30,000 baht/month (15.50%), less than 15,000 baht/month (14.00%), with the average income of 23,778.90 baht/month.

(5) Family Income Level

The samples' family income was: more than 50,000 baht/month (28.60%), followed by 20,001-30,000 baht/month (27.10%), 30,001-40,000 baht/month (22.50%), less than 20,000 baht/month (15.50%), and 40,001-50,000 baht/month (6.30%).

(6) Economic Status

The samples with more income than expenses accounted for 36.50 %, followed by income equal to expenses at 42.30 % and more expenses than income at 21.20%.

9.2 The Marketing Factors Affecting Decision-Making

The marketing factors affecting the elderly respondents' decision-making on buying food materials in the fresh market were in four: Product, Price, Place, and Promotion with details as follows.

(1) Product

The results of the study revealed six product factors affecting the respondents' decision on buying food materials in the fresh market. The highest level was the quality of food (freshness, cleanliness, no bad smell) (Mean=4.73). The rest were higher than the average of 3.5: more cleanliness of the packaging (Mean=4.21), packaging decent and easy to carry on (Mean=4.16), product certification standards (such as FDA), fresh food safety products (Mean=4.31), famous brand (Mean=3.92), and product labels indicating nutritional value with production date and expiration date (Mean=3.97). These findings are important for entrepreneurs to identify relevant components of a marketing mix for their operations with the elderly as their customer group (Viet & Anh, 2021). In addition, food providers in the fresh market need to be well aware of new product adjustments to meet with various needs of their customers (Sriboonnark, 2020).

(2) Price

The results of the study indicated that all price factors affecting the respondents' decision on buying food materials in the fresh market at a high level: the price suitable for the quantity of the product (Mean=4.12), the price commensurate with the quality of the product (Mean=4.11), and the price tag clearly shown (Mean=4.05). The findings on price can help the fresh food market operators to pay attention to reasonable price of the food items as well as provide discount prices for most needed items, like eggs and on-season vegetables, for customers' loyalty (Erlina & Hermawan, 2021).

(3) Place

The results showed all place factors affecting the respondents' decision on buying food materials at a rather high level: convenient and adequate parking spaces of the fresh market (Mean=3.96), overall cleanliness of the fresh market (Mean=4.39), delivery services (Mean=3.99), product category zone (Mean=4.11), security systems (Mean=4.41), and convenience for the elderly (Mean=3.97). As known to shoppers for grocery and home supplies, the place factor is vitally important, for it can provide good facilities and pleasant atmosphere that have a strong psychological impact on customers' purchasing decision, satisfaction, and loyalty (Kotler, 2016). Moreover, uniqueness of the shop environment—friendly and pleasant--can certainly attract customers to enjoy their shopping time (Ratchavieng et al., 2021; Phakdeephrot, 2022).

(4) Promotion

The results revealed all promotion factors affecting the respondents' decision on buying food materials at a high level: advertising/public relations through various media channels (Mean=3.75), billboards easily recognizable and visible from afar (Mean=3.70), and discounts and rewards offered to buyers (Mean=3.85). It should be noted that the first three marketing factors—Product, Price, Place—deserve priority in business operations to make Promotion possible or workable to create loyalty among customers, particularly the elderly group (Kotler, 2016; Erlina & Hermawan, 2021; Lee et al., 2022). Also important to business operators is the channel of communication with customers via digital platforms/ social media for services, particularly for product/ service promotion as well as pre-order and home delivery (Ratchavieng et al., 2021)

9.3 The Relationship between Demographic and Behavioral Factors

The researchers analyzed the relationship between demographic variables and behavioral factors of the respondents in buying food materials in the fresh market. The analysis by a chi-square test included purchasing quantity. (Number of days of consumption), purchase cost (baht per time), purchase method (pre-ordered / buy fresh in-store), and eating behavior (single or with family). The details are as follows:

(1) The relationship between demographic variables and purchasing quantity. (Number of days of consumption).

The demographic variables include gender, age, and educational level. There was no statistically significant relationship between these variables with purchase quantity of food materials at $\alpha = 0.05$ and family income.

(2) The relationship between demographic variables and purchase cost (baht per time).

The researchers found that two demographic variables—gender and educational level--had no relationship with the purchase cost of food materials at the statistically significant level at $\alpha = 0.05$. Age was related to the cost of purchasing raw materials, statistically significant at $\alpha = 0.05$; those aged over 70 years old had expenses less than

500 baht per time, more in proportion with those aged under 70 years old. This could be taken as those in the group over 70 years were careful about food intake. Therefore, their reduced consumption due to the body's readiness for food or appetite tended to decline (Department of Older Persons, 2021). The researchers also found that personal income and family income had no relationship with the purchase cost of food materials at the statistically significant level $\alpha = 0.05$.

(3) The relationship between demographic variables and purchase method (pre-ordered / buy fresh in-store)

It was found that gender had no statistically significant relationship with the purchasing method, age and education level.

The results showed that age is related to the method of purchasing food materials, statistically significant at $\alpha = 0.01$ in that people under 70 years old had a method of self-purchase through online channels and were able to access shopping technology without going to the market in person. The respondents' education level correlates with the purchasing method, statistically significant at $\alpha = 0.01$ in that those who with a bachelor's degree or higher would pre-order to limit the purchased amount according to their needs. As for the personal income level, there was no relationship with the method of purchasing food materials in the fresh market statistically significant at $\alpha = 0.05$ in all personal income ranges. Family income was related to food materials, statistically significant at $\alpha = 0.01$ in that those with family income not exceeding 20,000 baht purchased in person at the food store. The pre-order method was not used by those with family incomes of less than 20,000 baht; this group of limited income needed to plan for their spending in advance.

(4) The relationship between the demographic variables and consumption behavior (single or with family).

The results of the analysis revealed that all factors, including occupation, personal income family income, had no statistically significant relationship with the consumption behavior at the level of $\alpha = 0.05$. These relationship findings definitely emphasize the significance of the factors of marketing mix that need to be relevant to the customers' needs to make business operations successful as well as winning the customers' loyalty back for regular shopping (Kotler, 2016; Viet & Anh, 2021; Erlina & Hermawan, 2021; Lee et al., 2022).

10. Suggestions

The obtained findings were to generate constructive implications for all stakeholders of the fresh food market concerned. Based on the results on the elderly's consumption behavior as related to their demographic variables, the researchers would like to suggest the following:

(1) Food Materials Entrepreneurs

Food materials entrepreneurs need to focus on the quality of fresh food materials according to the standards specified by government agencies. Particularly, perishable food requires high quality in content and reasonable price. In addition, service providers need to be attentive to customers and provide good assistance.

(2) Fresh Market Entrepreneurs

Cleanliness is the main concern of the customers. The market operators must keep the floor clean and dry at all times both inside and outside the building without garbage being dumped around to send out foul smell. The use of security camera can help the management to monitor the conditions of the market floor and the nearby areas to prevent customers slipping on the wet floor surface. Facilitation for the elderly should be sufficiently provided, such as adding handrails along the curb, a large font size on the notice board, and chairs in the waiting area.

(3) Government Agencies

The government agencies should monitor and inspect the quality of food materials to meet the specified standards to ensure no harmful contaminants in the food content as well as the reasonable price level in the market. This is to safeguard quality of life for incoming customers both young and old to enjoy fresh food shopping in good quality markets in Phutthamonthon areas.

Along with these suggestions, the researchers also expected that fresh food market entrepreneurs would be able to identify the relevant components of the marketing mix and incorporate them into their business operations to suit their customers' needs in particular contexts.

11. The Authors

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Both authors share research interest in the areas of marketing of food materials, consumers' decision-making, and the fresh market of the local elderly groups.

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