

Conference Paper

Chili Paste Culture in Bangkok Metropolis

Ravipim Chaveesuk and Chayanuch Jitareetep

Department of Agro-Industrial Technology, Faculty of Agro-Industry Kasetsart University, Chatuchuck, Bangkok, 10900, Thailand

Abstract

This research's objectives were to study the consumer behavior of instant chili paste in Bangkok metropolis. A survey study in Bangkok and its perimeters with 400 consumers indicated that most popular chili paste in retail stores was the chili paste in oil. Most consumers decided to buy the instant chili paste based on a taste satisfaction at convenient stores or supermarkets. Those whose monthly income were less than 865 USD preferred a chili paste in a 90-gram plastic jar and made a purchase with higher frequency than those who earned more and preferred a 230-gram glass jar. Taste, reasonable price to quality, availability near home or workplace and product promotion were consumers' most important buying decision criteria. The logistic regression model built to represent the relationship between a probability to buy and marketing factors revealed that buying chance would be higher if the consumers perceived that the product were made from high quality materials and were packed in the see-through packaging. Marketing strategies for the chili paste manufacturer are to communicate its high quality raw materials and standard certificate on the label or QR code, product visibility through a transparent package or window on a package and prepare for digital marketing. Proper outlets include convenient stores, supermarkets and hypermarket in a residential area or near a workplace. Recommended promotions are buy one get one free concept, variety of chili pastes in one pack and a product tasting from time to time.

Keywords: Bangkok Metropolis; Chili Paste; Consumer Behavior; Logistic Regression

Corresponding Author

Ravipim Chaveesuk
ravipim.c@ku.ac.th

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INTRODUCTION

Chili paste is embedded in Thai eating culture. As an authentic Thai dish, it has long been consumed with rice, fresh vegetables or boiled vegetables, and fish or meat. Standard Thai chili paste is typically made of fresh or dry chilies, garlic, lime, fish or shrimp, fish sauce and coconut sugar. Other chili paste requires grilling ingredients before mixing or requires sautéed with oil before seasoning. Presently, Thai chili paste

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is consumed in 4 patterns: mixing with rice, dipping sauce, ingredients for other dishes, and bread spread. Ninety eight percent of Thai households consume certain chili pastes while 64% of them consider the chili paste as their regular home dish [6]. Urbanization and hectic lifestyle and advanced food processing technology drive a need for an instant or packaged chili paste. In addition, a migration of people to Bangkok and its perimeters and a busy urban society do not prevent the rural people to continue having their local chili paste in the meal. As consumers are more health concern, chili pastes become a good choice because they are not only a functional food but also stimulation for higher consumption of vegetables. Study on consumer behavior is important for all marketers to evaluate new market opportunities, determine the necessary strategies and protect the consumers [5]. Kotler et. al. [1] discerned that market stimuli such as 4 marketing mixes, economic, politic, technology and culture stimuli as well as consumer demographic are drivers for consumer response. As a consequence, exploring of consumer behaviors, attitudes and buying decision factors towards the instant chili paste are necessary to capture this healthy market opportunities. This research was carried out to understand and to gain insights into Bangkok and metropolitan's consumers so that appropriate marketing strategies could be determined.

MATERIAL AND METHODS

A Survey in Bangkok Metropolis

Questionnaire Development

A questionnaire composes of 3 sections: (1) consumer demography in multiple choices, (2) consumer behaviors on chili paste consumption in multiple choices and ranking, and (3) importance level of marketing factors affecting Chili paste's buying decisions in 5-point Likert scale (1 = least important to 5 = most important).

Target Sample and Sample Size

Target samples were consumers work or reside in Bangkok Metropolis over 18 years old. Due to an unknown population size, a sample size was computed using Yamane [7] to be 358 consumers at a 95% confidence level. However, the actual sample size was 400 consumers to prevent the error in sampling.

Survey Data Analysis

1. The developed questionnaire was tested with a group of 30 consumers for a reliability of questions in the Likert scale sections using Cronbach's Alpha coefficient [4].
2. The demographic data and consumer behavior data were analyzed using percentage and weighted rank.
3. The independent test between demography and behaviors were evaluated using Pearson's Chi-Square test and cross tabulation.
4. The comparison in the importance level of the marketing factors was carried out by Analysis of Variance (ANOVA) or Kruskal Wallis test depending on the normality of the data[3].
5. The effects of the demography on the importance level of the marketing factors were assessed by ANOVA or Kruskal Wallis test.

Modeling the Consumer Classification

Based on the probability that the consumer samples would buy the chili paste if the marketing factors satisfied their needs, two groups of consumers are classified: buy and not buy (probability under 0.5 = not buy group and probability 0.5 and over = buy group). Then logistic regression model was built to relate 26 marketing factors with the probability to buy. The model was tested for its fit by Hosmer and Lemeshow test and its outlier by Cook's distance. The model with good fit and no outlier could be used to identify the critical marketing factors to the decision to buy using an odds ratio [2].

Marketing Strategies

After all analysis was done, marketing strategies for consumers in Bangkok Metropolis were formulated.

TABLE 1: Chili Paste Consumer Profile.

Demography	Percentage
Age (years)	
< 20 (Gen Z)	1.5
20-35 (Gen Y)	57.5
36-50 (Gen X)	16.3
51-60 (Baby Boom)	18.5
> 60 (Silent)	6.3
Occupation	
Company employee	45.8
Government officer	27
Business owner	12.8
Student	11
Others (Retired)	3.6
Monthly income (USD)	
< 289	10.3
290-577	28.5
578-865	28.5
866-1,154	11.8
1,155-1,442	11.8
>1,142	19.8

RESULT & DISCUSSIONS

Consumer Profile

Chili paste consumer profile of 400 samples was shown in Table1. More adult female (66%) consumers were collected with at least bachelor degree education (94%). They mainly worked in private firms or government offices with diversified income.

Consumer Behavior

Top five popular instant chili pastes were chili paste in oil, red chili paste, grilled fish chili paste, dried shrimp Phuket style chili paste, and Narok (hell) chili paste. Instant

Chili pastes were used for rice mixing (35%), dipping with vegetables (34%), ingredient for other dish (22%) and bread spread (9%). Key buying reasons included taste satisfaction (40%), quality trust (16%), buying convenience (15%), brand trust (12%) and good price (11%). Consumption behaviors were displayed in Table 2.

Consumers preferred buying instant chili paste once a month or every 3-month from hypermarket, convenient store or supermarket. In general, their favorite chili paste came in 90 g plastic jar, 230 g or 170 g glass jars.

Independent Test between Demographic Data and Consumer Behaviors

Chi square test indicated that some behaviors depended on income and occupation as summarized in Table 3 and 4, respectively. Regardless of chili paste types, most frequent buyers are the consumers whose income were no greater than 577 USD/month but in a small serving size and plastic package. Those with high monthly income (>865 USD) would buy with less frequency but in a larger serving size and a glass package as indicated in Table 3.

Apart from the most favorite chili paste in oil, company employees and students often bought the red chili paste in a smaller size while government officers purchased the grilled fish chili paste and business owner would go for the shrimp paste chili paste in a larger size (Table 4).

Comparison on the Importance Level of Marketing Factors for Buying Decision

Marketing factors were classified into 4Ps: product, price, place and promotion, each with sub-factors. The significantly important product, price, place and promotion sub-factors were listed in Table 5.

Top 3 key product factors were taste satisfaction, raw material quality and product safety standard. Consumers considered reasonable price for quality as more important than lower price or reasonable price for quantity. All consumers expected highly buying convenience, followed by high sanitary of the retail stores. Favorable promotions included buy one get one free and availability of more chili paste varieties in one pack.

TABLE 2: Chili Paste Consumption Behaviors.

Behavior	Percentage
Buying frequency	
Every week	5.3
Once a month	28.3
Every 3 months	25.5
Every 6 months	18.5
> Every 6 months	8
Favorite package and size	
90 g plastic jar	28.7
230 g glass jar	25.5
170 g glass jar	25.3
12 g plastic cup	9.8
500 g glass jar	6.4
22 g plastic pouch	2.9
250 plastic pouch & zipper	1.4
Favorite size for rice mixing chili paste	
12 g	9.6
90-100 g	33.8
150-170 g	23.1
230-250 g	28.5
500 g	5.1
Favorite package for rice mixing chili paste	
Glass jar	49.2
Plastic jar	30.3
Plastic cup	11.7
Standing pouch & zipper	5.1
Plastic pouch	3.7
Buying outlet	
Hypermarket	26.8
Convenient store	24.6
Supermarket	22.4
OTOP store	18.4
Hi-end supermarket	5.4
Wet market	2.2
Online	0.1

TABLE 3: Monthly Income Effect on Consumer Behaviors.

Behavior	≤ 577 USD	578-865 USD	>865 USD
Buying frequency	Every month	Every 3 months	Every 6 months
General size & package	90 g Plastic jar	90 g Plastic jar	230 g Glass jar

TABLE 4: Occupation Effect on Consumer Behaviors.

Occupation	Favorite Chili Paste	Size and Package
Government officer	1. In oil	170 g Glass jar
	2. Grilled fish	
Company employee	1. In oil	90 g Plastic cup
	2. Red	
Business owner	1. In oil	170 g Glass jar
	2. Shrimp paste	
Students	1. In oil	90 g Plastic cup
	2. Red	

TABLE 5: Important 4Ps for Chili Paste Buying Decision.

Marketing Factor	Mean Importance*	S.D.
Product		
Good taste	4.66a	0.57
Material quality	4.61a	0.62
Safety standard	4.61a	0.69
Price		
Price to quality	4.62	0.59
Place	4.55a	
Easy access		0.66
Store sanitation	4.37b	0.8
Promotion	4.00a	
Buy 1 get 1 free		0.92
Variety in 1 pack	3.85b	0.93

*Mean under the same factor followed by the same letter are not significantly different (p>0.05)

Demography effect on the Importance Level of 4Ps for Buying Decision

Age and income had some significant effects on the important level of the product and promotion factors for chili paste buying decision. Good taste was always important except for Generation Z consumers who looked for longer shelf life instead (Table 6). Raw material quality was highly concerned by all consumers except Generation X who cared for ability to see the product appearance. Product safety standard was emphasized by every consumer regardless of their age. Key promotion sub-factors identified by all age consumers were buy one get one free and providing chili paste varieties in one pack. However, surprisingly Generation Z preferred festival or seasonal basket supply whereas Generation X and Baby Boomer requested social media or online advertisement. In addition, Generation Y and Silent group asked for a product tasting at a retail store.

In terms of monthly income, all consumers expected good taste and product safety standard (Table 7). However, consumers with income lower than 289 USD/month and income between 866-1,154 USD/month placed an importance for an ability to see the chili paste appearance inside the package while those who earned 290-865 USD/month and over 1,155 USD/month concerned more on raw material quality. For the promotion factor, all consumers preferred buy one get one free campaign and having various chili pastes in one pack. Nevertheless, those who had income less than 289 USD/month and income 1,155-1,442 USD/month placed an emphasis on social media advertisement while those who earned 290-1,154 USD/month and over 1,442 USD/month focused on having a tasting booth in the store.

Modeling the Consumer Classification

Logistic regression developed with good fit and no outlier was expressed as follows:

$$\hat{\pi} = \frac{e^{0.59+0.47X_1-0.43X_4+0.57X_{10}-0.64X_{11}-0.79X_{13}-0.47X_{17}}}{1 + e^{0.59+0.47X_1-0.43X_4+0.57X_{10}-0.64X_{11}-0.79X_{13}-0.47X_{17}}} \quad (1)$$

where $\hat{\pi}$ = Probability that the consumer will buy the chili paste if all marketing factors were satisfied

X_1 = Raw material quality

X_4 = Various flavors

X_{10} = Product appearance visibility

X_{11} = Good packaging design

TABLE 6: Age Effect on the Importance of 4Ps (3 most important).

Age (Year)	Product	Promotion
All ages	Safety standard	Buy one get one free
		Variety in 1 pack
<20 (Gen Z)	Material quality	Festival basket
	Long shelf life	
20-35 (Gen Y)	Good taste	Tasting booth
	Material quality	
36-50 (Gen X)	Good taste	Advertise in social media
	Product visibility	
51-60 (Baby Boomer)	Material quality	Advertise in social media
	Good taste	
>60 (Silent)	Material quality	Tasting booth
	Good taste	

TABLE 7: Monthly Income Effect on the Importance of 4Ps (3 most important).

Income (USD)	Product	Promotion
All income	Good taste	Buy one get one free
	Safety standard	Variety in 1 pack
< 289	Product visibility	Advertise in social media
290-865	Material quality	Tasting booth
866-1,154	Product visibility	Tasting booth
1,155-1,442	Material quality	Advertise in social media
>1,442	Material quality	Tasting booth

X_{13} = Price fits quality

X_{17} = Store sanitation

After analyzing the odds ratio, two factors with positive effect on increasing the chance to buy chili paste were raw material quality (odd ratio of 1.6) and ability to see the product appearance through the package (odd ratio of 1.77). It was observed that if the consumers placed higher emphasis on raw material quality by 1 unit, the chance of buying chili paste would increase by 60%. Similarly, the higher the importance on product visibility through the package by 1 unit, the higher the increase in a chance to buy the chili paste by 77%.

CONCLUSIONS

The marketing strategies for the chili paste manufacturer were to (1) be sure on the product good taste, (2) use high raw material quality and communicate it on the label or QR code and social media, (3) express product safety certificate on the label and social media (4) prepare for traceability via QR code in the future, (5) use see-through or transparent package, (6) improve package design, (7) supply products to convenient store, hypermarket or supermarket close to office or university and residential area, (8) use campaign of buy one get one free, (9) offer a set of various chili pastes, and product tasting at the retail stores, and (10) consider employing digital marketing. More specific distribution strategies include (1) display highest portions of chili paste in oil in all stores, (2) display high portions of red chili paste of 90 g plastic cup near university and business area outlets, and (3) display more portions of grilled fish chili paste in 170 g glass jar near government office stores.

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