# The Effect of Marketing Mix Factors and Brand Image Toward Customer Satisfaction and Customer Loyalty of Liquefied Petroleum Gas for Household Use in Thailand

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## Abstract

The purpose of this study is to examine the relationship between the marketing factors (Product, Price, Place, and Promotion), brand image and customer satisfaction towards customer loyalty on Liquefied Petroleum Gas (LPG) for household use in Thailand. The quantitative question-naires were approached by using linear regression analysis to confirm the results. Survey data were collected from 400 customers who have experiences toward delivery and usage of LPG cooking container. The study results suggested that the product dimension of the marketing factors, brand image, and customer satisfaction had a positive influence on customer loyalty. The result of this study would enable businesses to identify marketing strategies in order to enhance customer satisfaction and loyalty in the LPG cooking gas industry in Thailand.

**Keywords:** Marketing Mix, Brand Image, Customer Satisfaction, Customer Loyalty, LPG Cooking Gas

## Introduction

LPG, known as Liquefied Petroleum Gas, is a mixture of hydrocarbon gases. It produces during natural gas processing and oil refining. We cannot deny that LPG played a revolutionary role in changing the way domestic fuels such as firewood and charcoal are used for heating and cooking. The market of LPG has continuously been expanding. According to the ministry of energy Thailand, there are three main sources of supply of LPG in Thailand:

1. From an oil refinery
2. From Gas separation plants (GSP)
3. From the imported gas in the form of Propane gas and Butane gas

In 2014, LPG used in Thailand mainly was from GSP, 50 percent, follows by imported, 26 percent, and oil refinery, 24 percent. The LPG consumer record from Energy Policy and Planning Office (EPPO) indicated that the consumption of LPG and propane for cooking from 2005 to 2015 has been rising by 31 percent. Meanwhile, the consumption of LPG and propane for the industry in the same period has been rising by 29 percent. LPG has been proven to be cost-effective, convenient, and environmentally friendly.

In Thailand, there are four major LPG cooking gas suppliers which comprise of PTT PCL (held the largest market share of 48%), followed by WP Energy PCL (18.2%), Unique Gas and Petrochemical PCL (11.16%), and Siamgas and Petrochemical PCL (9.22%)

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(Bangkokbiznews, 2017). Also, the LPG in the cooking gas segment is under the government's price control, which led to slightly or indifference in LPG price among each supplier. Therefore, the suppliers need to develop marketing strategies to satisfy their consumers and uphold the brand image to gain customer satisfaction and customer loyalty in a competitive environment.

## Research Objectives

This study investigates how the marketing mix (4Ps) and brand image influence customer loyalty on LPG cooking gas for household use in Bangkok, Thailand.

## Literature Review

### The marketing mix factors

The marketing mix factors (Kotler & Keller, 2016) consist of product, price, place, and promotion. The 4Ps of the marketing are briefly described as follows (Copley, 2004): Product dimension refers to the item or service being marketed, through its features, quality, benefits, functionality, after-sale services; Price dimension refers to the price of the item, discounts, payment methods; Place dimension refers to the location where the product or service is available to the customer, including distribution channels, logistics, order processing; Promotion dimension refers to advertising, direct marketing, public relation (PR), sales promotions. It is widely used by researchers to analyze the combination of tactics used by a business to achieve its objectives by marketing its products or services effectively to its target consumers (Chartered Institute of Marketing (CIM), 2004). Marketing mix also helps to define the marketing elements for successfully positioning market offer and helps to develop the satisfaction (Cengiz & Yayla, 2007; Shahhosseini & Ardahaey, 2011; Suprihanti, 2011).

Customer re-purchase behavior is estimated as a primary requisite for loyalty, followed by satisfaction (Punniyamoorthy & Raj, 2007; Chang & Tu, 2005). Pritchard, Havits & Howard (1999) claimed that understanding why customers become loyal is vital in business as it will become a development of a strategy for business providers to perform and deliver excellent services and products to the customers. Business providers, with a clear understanding of the marketing mix, can attract both potential and current customers to become loyal customers (Wahab et al., 2016).

### Brand Image

Brand image is the perception of how a customer views the brand. Keller (1993) expressed that brand image is a sign that consists of all the information and expectation-related to product and service based on customer perception. The brand image is also defined as the ability of a potential customer to identify and remember a brand as a member of a specific product category (Aaker, 1997).

Porter & Clycomb (1997) stated that businesses could increase their competitive advantage with a positive brand image as well as encourage consumers to re-purchases and become loyal customers. Number of studies also indicated that brand image has a direct influence on customer satisfaction customer loyalty (Eakuru & Mat, 2008; Ogba & Tan, 2009; Tu et al., 2012).

### Customer Satisfaction and Loyalty

Customer satisfaction is defined as a customer's feeling, such as enjoyment or disappointment that results from comparing a product's perceived performance to a particular expectation (Oliver, 1981; Brady & Robertson, 2001). Lee (2004) stated that customer satisfaction on a company's performance determines their retention. While customer loyalty is defined as "a feeling of attachment to or affection for a company's people, products, or services" (Jones & Sasser, 1995).

A satisfied customer is likely to be a loyal customer. Consequently, loyal customers are pleased to spend more with strong purchase intentions and hardly switching brands (Evanschitzky et al., 2012). Thus, businesses need to strengthen their relationship with the customers to sustain a competitive advantage in the competitive environment (Aksoy, 2013).

**Previous researches and Findings**

Vinayagamoorthy, Sankar & Sangeetha (2007) researched "Study on Service Quality Perception of Domestic LPG", stated that the service quality played an essential role in the competitive market. With well-established consumer service management, it is the key to succeeding in the competitive market. The study revealed that customers are not highly satisfied with the service provided by the Indane gas company. Therefore, the Indane gas company has to improve its service quality to stay competitive.

Vimal & Karthihaiselvi (2010) in their study, "Customers' opinion towards Indane gas dealers", found that customers are concerned about a delay in providing a cylinder. It is suggested that there should be one more dealer in Sivakasi to distribute the gas cylinder quickly. With the rising demand for the Indane gas because of convenience to use, cleanliness, cost, and time-saving, the dealer should provide better customer service to have repeated orders, increased sales, and eventually sustainable development.

Dhanabhakyam & Sumathi (2014) in their article entitled, "A Study on Customers Attitude and Satisfaction towards HP LPG in House Hold, Coimbatore", stated that the consumers have a positive attitude towards referring others to buy the HP LPG. However, the HP Gas Company is suggested to improve its service quality, such as the customer care area, proper communication while booking and delivery through short message service (SMS).

## Research Framework
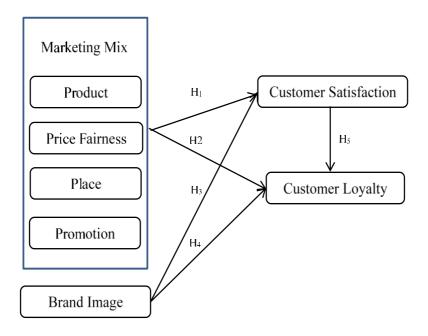
Figure 1 presents the conceptual framework for this study.



**Figure 1** Research Framework

## Hypotheses

Hypotheses are stated as follows:

$H_1$: The marketing mix 4P's positively influences customer satisfaction.

$H_2$: The marketing mix 4P's positively influences customer loyalty.

$H_3$: The brand image positively influences customer satisfaction.

$H_4$: The brand image positively influences customer loyalty.

$H_5$: Customer satisfaction positively influences customer loyalty.

## Methodology

The quantitative approach was used in this research. The target population of this study was a household consumer in Bangkok who has experiences toward delivery and usage of LPG cooking container to a household in Sai Mia district. The Department of Provincial Administration reported that, in 2016, the Sai Mia district was the highest population in Bangkok; the total number of registered residents was around 200,000 people. Using Taro Yamane's sample size calculation (Yamane, 1973) to determine the sample for this study, the calculated value was 400 respondents.

Elements in the questionnaire were derived from the available literature review. Necessary modifications were made to make it suitable for the Thailand context. Three items each for Marketing Mix factors were selected from previous marketing mix studies. Five items each for Brand Image, Customer Satisfaction, and Customer Loyalty were adapted from the available literature. Five-point Likert scales with the range of "strongly disagree" (1) and "strongly agree" (5) will be used to measure in this study based on the marketing mix, customer satisfaction, and loyalty. The survey was designed with screening questions about experiences toward delivery and usage of LPG cooking containers at the beginning of a survey to determine whether respondents are eligible to participate.

The reliability of questionnaires was tested by using the internal consistency method, which is known as Cronbach's alpha. It was introduced by Kuder & Richardson (1937) for dichotomous data, then generalized by Cronbach (1951). In this study, Cronbach's alpha was used to test internal consistency for all four Marketing Mix dimensions, Brand Image, Customer Satisfaction, and Customer Loyalty. Cronbach's score range from 0 to 1, with values close to 1 indicating high consistency. George & Mallery (2003) provided the following rule of thumb: "≥ 0.9 – Excellent, ≥ 0.8 – Good, ≥ 0.7 - Acceptable, ≥ 0.6 – Questionable, ≥ 0.5 – Poor and ≤ 0.5 – Unacceptable".

This study's questionnaires were accepted for internal consistency, as all the values were above 0.7 (Cronbach, 1951). Cronbach's alpha value was from 0.871 to 0.947, as shown in Table 1.

**Table 1** Mean, Standard Deviation, and Cronbach's Alpha Scale Reliability

| Variables | Mean | S.D. | α (n=400) |
|---|---|---|---|
| Product | 3.66 | 0.875 | 0.871 |
| - LPG cylinder is always in a condition | 3.68 | 1.005 | |
| - This supplier has various sizes of LPG cylinder | 3.68 | 0.971 | |
| - The certification of the Thai Industry Standard Institute is visible on the cylinder. | 3.57 | 0.983 | |

**Table 1** Mean, Standard Deviation, and Cronbach's Alpha Scale Reliability (Cont.)

| Variables | Mean | S.D. | α (n=400) |
|---|---|---|---|
| Price | 3.64 | 0.837 | 0.871 |
| - The price offering by this supplier is reasonable. | 3.56 | 0.899 | |
| - The delivery fees are flexible and reasonable. | 3.70 | 0.998 | |
| - There is clear information for fees/charges. | 3.70 | 0.953 | |
| Place | 3.65 | 0.901 | 0.892 |
| - The location of the store is close to your home. | 3.58 | 0.959 | |
| - The supplier offers various channels to place an order. | 3.67 | 0.990 | |
| - The supplier offers a fast delivery service. | 3.72 | 1.046 | |
| Promotion | 3.64 | 0.916 | 0.908 |
| - The promotions are well informed. | 3.63 | 0.970 | |
| - The staffs have the knowledge to answer customer's quetions | 3.67 | 1.003 | |
| - The supplier offers various channels for making a payment i.e., cash, e-payment, credit card. | 3.64 | 1.005 | |
| Brand Image | 3.50 | 0.896 | 0.917 |
| - The design of this brand's ads is well done. | 3.55 | 0.992 | |
| - This brand always has what I'm looking for. | 3.60 | 0.979 | |
| - The store environment of this brand appeals to me. | 3.31 | 1.075 | |
| - This brand is responsible for me. | 3.47 | 1.078 | |
| - This brand is responsible for society. | 3.60 | 1.043 | |
| Customer satisfaction | 3.63 | 0.809 | 0.866 |
| - This supplier provided excellent quality of product and service. | 3.61 | 0.859 | |
| - I am happy about my decision to use LPG cooking gas from this supplier. | 3.64 | 0.905 | |
| - I am happy to recommend this supplier to others. | 3.62 | 0.924 | |
| - I believe I did the right thing when I use LPG cooking gas from this supplier. | 3.61 | 0.922 | |
| - Overall, I am satisfied with my decision to use LPG cooking gas from this supplier. | 3.66 | 0.892 | |
| Customer Loyalty | 3.42 | 0.858 | 0.947 |
| - I intend to continue using products and services from this supplier for a long time. | 3.42 | 0.938 | |
| - I am willing to say positive things about this supplier to other people. | 3.34 | 0.957 | |
| - I have bought from this supplier for several years because they offer satisfactory services. | 3.33 | 0.967 | |
| - To me, this supplier can provide the best service. | 3.40 | 0.957 | |
| - Overall, I will be a loyal customer. | 3.59 | 0.937 | |

**Source:** Author's calculation

# Results

### Demographical profile of respondents

From the respondents' demographics were classified as gender, age, average monthly income level, number of family members, and occupation. Based on the results, the majority of the respondents were female, which consist of 56.50 % of the sample size. Respondents aged between 18-30 years old represented the largest age group, 38.50%, followed by aged

between 31-40 years old, 26.50%. Besides that, 50% of respondents' average monthly income was between 15,001 Baht to 30,000 Baht, with the majority working for private organizations. Moreover, the majority of respondents had family members between 3 to 4 persons, 59%.

### Relationship of relevant variables and research hypothesis

**Table 2** Summary of Testing Hypothesis

| No. | Hypothesis Path | β | t-value | p-value | Hypothesis Supported |
|-----|-----------------|-----|---------|---------|---------------------|
| $H_{1a}$ | Product → Satisfaction | 0.238** | 5.203 | 0.000 | Yes |
| $H_{1b}$ | Price → Satisfaction | 0.063 | 1.052 | 0.294 | No |
| $H_{1c}$ | Place → Satisfaction | 0.159** | 2.571 | 0.010 | Yes |
| $H_{1d}$ | Promotion → Satisfaction | 0.198** | 3.317 | 0.001 | Yes |
| $H_{2a}$ | Product → Loyalty | 0.181** | 3.574 | 0.000 | Yes |
| $H_{2b}$ | Price → Loyalty | 0.078 | 1.170 | 0.243 | No |
| $H_{2c}$ | Place → Loyalty | 0.127 | 1.856 | 0.064 | No |
| $H_{2d}$ | Promotion → Loyalty | 0.110 | 1.654 | 0.099 | No |
| $H_3$ | Brand Image → Satisfaction | 0.211** | 3.317 | 0.001 | Yes |
| $H_4$ | Brand Image → Loyalty | 0.290** | 4.702 | 0.000 | Yes |
| $H_5$ | Satisfaction → Loyalty | 0.789** | 25.648 | 0.000 | Yes |

**\*\*** significant at 0.01

**Source:** Author's calculation

Based on the finding of Table 2, the results showed that Product, Place, and Promotion dimensions had a positive impact on customer satisfaction of LPG for household use. Product dimension represented the most substantial influence on customer satisfaction ($\beta = 0.238$), followed by promotion ($\beta = 0.198$), and Place ($\beta = 0.036$), whereas Price Fairness dimension indicated positively affect but insignificant. Meanwhile, only the Product dimension ($\beta = 0.181$) had a positive influence on customer loyalty. The Brand image also showed a positive impact on customer satisfaction and loyalty.

## Discussion and Conclusion

The main objective of the study was to investigate the marketing mix (4Ps), brand image, and customer satisfaction toward customer loyalty in the LPG cooking gas in Bangkok. It is undeniable that customer satisfaction plays an essential role in determining the success of the business. By assessing the marketing mix dimensions and brand image, the LPG cooking gas supplier can design effective marketing strategies to meet consumer voices and enhance their loyalty.

The findings indicate that the product dimension had the most substantial impact on customer satisfaction and loyalty. Customers are looking for different sizes of the cylinder that fit their lifestyle. By offering the product that fits customer need, it will encourage them to be a loyal customer. Additionally, management should focus on providing good quality LPG cylinder condition and conform to safety standard for household use. LPG cylinder without rusts, dents, or loose paint can enhance consumer's confidence in buying LPG cooking gas. The positive impact is not only on gaining consumer's confidence in buying but also on brand image. Chang & Tu (2005) identified that customer satisfaction directly impacted by brand image. Chitty, Ward & Chua (2007) concluded that the band image played a dominant role in

predicting customer satisfaction. A good brand image can enhance customer experience and satisfaction, which led to customer royalty and commitment (Ike-Elechi & Zhenzhen, 2009).

The location also has an impact on customer satisfaction, which aligned with Marinez-Ruiz, Jiménez-Zarco & Yusta, 2010. The store should be located not too far from populated residential areas and conform to safety regulations. It also should be visible and easily accessible. Besides, all associated costs (transport costs and time spent on the road) with purchases will be reduced as well, which leads to increased customer satisfaction. Fox, Postrel & McLaughlin (2007) indicated that consumers who lived closer to a store spend more, vice versa. Also, by offering various channels to place an order and guarantee delivery within 30 minutes, these would be a plus to gain customer satisfaction.

Additionally, the communication between businesses and their customers indicates had a positive impact on customer satisfaction, which similar to the finding of Charles, Tino & Bill (2005) and Yue (2013). With the variety of communication channels both offline and online, customers can access to product safety information, short video clips on "how-to" instruction, make a payment through various methods, tracking the delivery, as well as leave feedback about service or product.

Hence, it is essential to pay attention to customer satisfaction so the business can be sustained in the competitive market. It is crucial for active businesses in expanding new customers and to maintain their loyalty.

## Acknowledgments

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