

# THE EFFECTS OF BUNDLE COMPOSITION, PRICE, FRAMING AND FAMILIARITY ON CONSUMERS' PURCHASE INTENTION

Issara Titheesawad

Department of Finance and Banking, ABAC School of Management  
Assumption University.

Thongdee Kijboonchoo, Ph.D.

Graduate School of Business, Assumption University

## Abstract

*This paper attempts to investigate the effects of bundle composition, price level, price sensitivity, frame and familiarity on consumer's purchase intention. The bundle products under study composed of Pantene shampoo and conditioner, and Pantene shampoo and Parodontax toothpaste. A laboratory experiment was employed. Findings showed that bundle composition, price level, price sensitivity, frame and familiarity influenced purchase intention. The finding also showed that there exists an interaction effect between price levels and frames of bundling.*

## 1. Introduction

Bundling, a sale of two or more separate products in a package (Stremersch and Tellis, 2002), is pervasive in today's market. Firms in a number of industries, such as consumer products, hotels, health clubs, theaters and sport events, have employed such a tactic to increase sales.

The idea of bundling has received attention since 1960s. Economists viewed price bundling as an alternative technique for monopoly to price discrimination. Most researchers (Stigler, 1963; Adam and Yellen, 1976; Gultinan, 1987; Schmalensee, 1984; McAfee, Mcmillan and Whinston, 1989; Venkatesh and Mahajan, 1993; Dolan and Simon, 1996) emphasized on the optimal bundling strategy to investigate how and when bundling can maximize profit. In the 1990s, when a strong focus was placed on customer relationship, bundling received more attention in the marketing literature. The focus of the studies was on customers' perspective. The studies have explored the processes employed to value overall bundles and items within a bundle (Yadav and Monroe, 1993; Yadav, 1995). These studies suggested that price bundling often can, and should, decrease price sensitivity and increase purchase likelihood.

However, in practice, not all bundles are successful. Many managers view bundling as unprofitable because it cannot attract customers (Ailawadi and Neskin,

1998). Several bundles are not appealing to the customers, especially for those who don't usually buy the products (Schultz, Robinson and Peterson, 1998).

Therefore, in order to investigate and resolve this issue, important questions should be raised on how to successfully adopt bundling strategy: what factors make customers decide to buy or not buy the bundles, what types of products should be bundled together, what price should be charged for the bundle, and, how to attractively present a bundle to customers. Thus, this paper attempts to find answers and explanations to these questions.

The major objective of this paper is to explore factors that have an influence on bundle's purchase intention. Five factors, which consist of bundle composition, price level, price sensitivity, frame and familiarity of the products within a bundle, are hypothesized to have an effect on consumers' purchase intention for bundles.

To achieve the objective, a laboratory experiment was conducted. One hundred and twenty eight students of Assumption University were selected as respondents to fill out a questionnaire and specify their purchase intention on the 10-point scale of two given products bundles: Pantene shampoo and Pantene conditioner, and Pantene shampoo and Parodontax toothpaste. Respondents were divided into three groups. Each group received a questionnaire in different frames. The first

group received a questionnaire, which presents subjects with a mixed-joint frame. The second group received a questionnaire presenting a mix-leader frame, and the last group was presented with a separated frame. The data obtained from the questionnaires was analyzed by analysis of variance (ANOVA) and correlation method. ANOVA was used to test the difference between the components of the bundle composition, price and frame. In addition, bivariate correlation was used to test the association between familiarity of the products and consumers' purchase intention.

This article is organized as follows. The effects of bundling are discussed in section 2. Section 3 describes variables and hypotheses that will be tested. Section 4 presents the results of hypotheses testing, conclusions, and recommendations.

## 2. Effects of Bundling

Two forms of bundling strategies are available: pure and mixed bundling. *Pure bundling* is a strategy in which a firm sells only bundles and not (all) the products separately. *Mixed bundling* is a strategy in which firms sell both the bundle and all separate products in a bundle separately (Stremersch and Tellis, 2002). There are two methods of presenting mixed bundling: mixed-leader bundling and mixed-joint bundling. In *mixed-leader* bundling, the price of one of the two products is discounted when the other is purchased at a regular price. In a *mixed-joint* bundling, a single price of bundle is set when two products (or more) are purchased jointly (Guiltinan, 1987). The profitability of pure or mixed bundling depends on the market situation and customers' perception of the products (Dolan and Simon, 1996). However, sellers must be careful when adopting pure bundling strategy. For pure bundling to be successful, monopoly power in the market of those bundle products (at least one product) is required. On the other hand, pure price bundling with a monopoly power is illegal (Stremersch and Tellis, 2002).

Several advantages are provided by bundling. Firstly, bundling can be an instrument to segment customers into groups. Segmentation allows firms to increase profit by charging higher price for customers who really prefer the product while charging lower price for the bundle to induce non-customers to try the product. Secondly, implementing bundling can save cost through economies of scale, economies of scope and economy of aggregation. Economies of scale refer to the reduction of average total cost due to the scale of operation increases. Economies of scope refer to a

decrease in cost per unit of two or more products due to producing them together. Economies of aggregation refer to a decrease in cost due to marketing or selling products together (Bakos and Brynjolfsson, 2000). Thirdly, bundling of some products can strengthen market power. The case of Microsoft, which bundles Windows and Explorer together, is an obvious example. However, bundling to capture monopoly power may involve an illegal issue. Finally, bundling can be used as a short-term promotional strategy to stimulate purchase. Firms often bundle a new product with an existing one aiming at raising awareness of the new product while simultaneously increasing sales of their existing products.

## 3. Definition of Variables and Hypotheses

This section discusses the five main variables employed in this paper: bundle composition, bundle price level, bundle price sensitivity, bundle frame, and familiarity.

### *Bundle Composition*

Bundle composition refers to the usage characteristics of the two products within a bundle. Two usage characteristics of the product bundle are investigated: complementary products and unrelated products. *Complementary* products refer to products and services which are used together, when the price of one decreases, the demand for the other increases, and conversely (McConnell and Brue, 1999). Here, the bundle of complementary products is Pantene shampoo and Pantene conditioner. *Unrelated* products are independent products; a change in the price of one product has no impact on the demand for the other (McConnell and Brue, 1999). Here, the bundle of unrelated products is Pantene shampoo and Parodontax toothpaste.

Difference in composition within a bundle should affect purchase intention differently. Although, there is no theory stating that a bundle composed of complementary products leads to higher purchase intention than a bundle of unrelated products, several researchers such as Dolan and Simon (1996); Harlem, Krishna and Mela (1995) believed that complementary products in a bundle certainly fosters sales. A complementary product bundle is superior to the unrelated product bundle because it provides value added to customers. This value added raises customers' reservation price for the bundle. Thus, customers are willing to pay more for the complementary products bundle (Guiltinan, 1987; Stremersch and Tellis, 2002). Therefore, it is expected that:



Ha1: Purchasing intention for a bundle composed of complementary items is higher than purchase intention for a bundle composed of unrelated products.

### **Bundle Price Level**

Unlike previous studies (Harlem, Krishna and Mela, 1995; Stremersch and Tellis, 2002) that investigated the effect of reservation price of the bundle, this paper investigates the effect of *market* price of the bundle. The market price is given as a reference price to replace customers' reservation price which is inside each customer's mind and difficult to measure.

In this study, three types of bundle price level are considered: (1) 'decrease', (2) 'same', and (3) 'increase'. (1) The bundle price is considered to 'decrease' when the bundle price is lower than the sum of the reference prices (using market price as a reference price) of an individual item in a bundle. (2) The bundle price is the 'same' when a bundle price is equal to the sum of the reference prices of an individual item within the bundle. (3) The bundle price is considered to 'increase' when the bundle price is higher than the sum of the reference prices of the individual products in a bundle.

Price is the crucial factor that affects purchase intention. According to the law of demand, the lower the price, the higher demand for that good. Hence, lower price should lead to higher purchase intention. However, some researchers indicated that bundling can mask the cost of each product. With bundling, customers face difficulty in allocating the cost of each product in a bundle and some customers may buy the high-price bundle because they don't want to allocate the cost of each product in the bundle.

Some researchers, such as Dolan and Simon (1996); Cready (1991); Stremersch and Tellis (2002), indicated that discount is not a necessary condition for bundling. Some customers are willing to pay a premium for the bundle if the bundle of the products provide value added. Thus, it is expected that:

Ha2: Bundle price 'decrease', 'same' and 'increase' relative to the sum of the reference prices of an individual item in a bundle will lead to different purchase intention.

### **Bundle Price Sensitivity**

In addition to price level, price sensitivity is investigated in this research. Price sensitivity refers to the change in purchase intention when the price is varied. Two characteristics of customers' price sensitivity are

considered in this study: customers' sensitivity to price *decrease* and customers' sensitivity to price *increase*. (1) *Customers' sensitivity to price decrease* is measured by the difference in purchase intention of bundle price 'decrease' and purchase intention of bundle price remaining the 'same'. (2) *Customers' sensitivity to price increase* measured by the difference in purchase intention of bundle price 'increase' and purchase intention of bundle price remaining the 'same'.

Kahneman and Tversky (1979) suggested that people perceive gain and loss differently. Losses appear larger than gains. People are more sensitive to price increases rather than price decreases. Therefore, it is expected that consumers are more sensitive to a bundle price 'increase' (loss) than to a bundle price 'decrease' (gain). Thus,

Ha3: Customers' sensitivity to price increases is different from customers' sensitivity to price decreases.

### **Bundle Frame**

Bundle frame is the price presentation format of the products within a bundle. Bundle price can be presented in various forms. In this paper, the focus is on the following three forms of bundle presentation, which can be observed in today's market. First is the mixed-joint frame. In a mixed-joint frame, a single price of bundle is set when two products (or more) are purchased jointly (Guiltinan, 1987). The following is an example of mixed joint frame:

"Buy Pantente shampoo and Patenene conditioner at B 280".

The second bundling frame is Mixed-leader frame. Mixed-leader frame refers to the bundle presentation when the price of one of the two products is discounted while the other is presented at the regular price (Guiltinan, 1987). The following is an example of mixed-leader frame.

"Buy Pantene shampoo now at B145 and get Pantene conditioner at a special price of B 135".

Finally, the third frame is separate frame. Separate frame refers to the practice of presenting separate discounted price for each individual item within a bundle. The following is an example of separate frame;

"Buy Pantene shampoo at a special price of B140 and Pantene conditioner at a special price of B 140, (if you buy both)".

Different frames should have different impact on purchase intention. Based on Prospect Theory, Thaler (1985) extended the value function of Kahneman and Tversky (1979) by proposing the ways in which

customers value their gains and losses when they are confronted with two compound events. Thaler (1985) demonstrated that people prefer separate gain and integrated loss. This principle has an implication on bundling strategy.

Stremersch and Tellis (2002) stated that it is better to integrate all price information in a single bundle price rather than present it in a list of separate product prices and separate the bundle discount in multiple savings rather than present it as a single saving. Similar to Stremersch and Tellis (2002), Yadav and Monroe (1993) indicated that consumers prefer two small savings separately rather than one big saving. Therefore, dividing up that one large saving into two small savings may be an appropriate pricing alternative to implement a mixed bundling strategy.

Based on the previous studies, it is expected that different frames would result in a significant difference in purchase intention of the bundle. Thus, it is expected that:

Ha4: Purchasing intention of customers who are presented with a mixed-joint frame, mixed-leader frame and separate frame, are different.

### **Familiarity**

Familiarity with the products refers to the products that customers are able to recognize or know well because they have seen, heard or experienced them before.

It is believed that there is a relationship between familiarity and purchase intention for bundles. People who are more familiar with the products are more likely to purchase the bundle. Bundles are generally unappealing to customers who don't usually buy the products (Schultz, 1998). In addition, Harlam, Krishna and Mela (1995) stated that people who are more familiar with (at least one) product in a bundle would be more sensitive to the price of the bundle. Thus, it is expected that

Ha5: There is a relationship between familiarity of (at least one) product within a bundle and purchase intention for the bundle

## **4. Conclusions and Recommendations**

This section discusses critical analysis of ANOVA results for bundle composition, bundle price level, bundle price sensitivity, bundle frame and familiarity, on consumers' purchase intention. Thus, this leads to useful conclusions and recommendations:

### **Bundle Composition**

ANOVA results indicate a significant effect for bundle composition. The significant two-tailed value divided by two is equal to 0.00, which is less than 0.05 ( $0.00/2 < 0.05$ ) and the F-value is positive ( $F = 20.612 > 0$ ). Thus, the null hypothesis ( $H_{01}$ ) is rejected meaning that the bundle composed of complementary products shows a higher consumers' purchase intent than a bundle composed of unrelated products.

### **Bundle Price Level**

The results of ANOVA reveal that price level has an impact on purchase intention. The significant value is 0.00, which is less than 0.05. Hence,  $H_{02}$  is rejected. ANOVA results indicate that purchase intention is different when the price is varied. The lower the price level, the higher the purchase intention. The average purchase intention when price 'decreases' is 6.422, which is higher than purchase intention when price remain the 'same' (5.207) and 'increases' (4.188).

### **Bundle Price Sensitivity**

The results from ANOVA illustrate that the change in purchase intention due to price increase is not different from change in purchase intention due to price decrease. The mean of different purchase intention between price remaining the same and price decrease (sensitivity to price decrease) is 1.770, while the difference between price remaining the same and price increase (sensitivity to price increase) is 1.660. The two-tailed significant value is 0.44, which is higher than 0.05. Thus, the null hypothesis ( $H_{03}$ ) is accepted indicating that respondents are sensitive to price increase as well as price decrease.

### **Bundle Frame**

ANOVA results reveal a significant main effect for frame ( $\text{sig.} = 0.00 < 0.05$ ) meaning that purchase intention of mixed-joint frame, mixed-leader frame and separate frame are different. Mixed-leader frame received the highest mean of purchase intention (mean = 5.756), while mixed-joint frame produced the lowest mean, which is 4.793.

### **Familiarity**

Correlation results indicate that there is a positive relationship between bundle's purchase intention and familiarity with Pantene conditioner. The correlation coefficient is equal to 0.106, which is statistically significant at 95% confidence interval ( $\text{Sig.} = 0.038 <$



0.05). However, the correlation coefficient between the bundle's purchase intention and Pantene shampoo is 0.078, which is not statistically significant at the 95% confidence level ( $\text{Sig.} = 0.126 > 0.05$ ).

The result also illustrates that the correlation coefficient between consumers' purchase intention and familiarity with Pantene Shampoo is 0.04 indicating that there is no relationship between purchase intention for the bundle and familiarity with Pantene shampoo at 95% confidence level ( $\text{Sig.} = 0.943 > 0.05$ ). In contrast, a relationship between purchase intention and familiarity with Parodontax toothpaste was found. The correlation coefficient is 0.254 indicating that there is a positive relationship between purchase intention for the bundle and familiarity with Parodontax toothpaste, and the correlation is statistically significant at 0.05 level ( $\text{Sig.} = 0.000 < 0.05$ ).

Therefore, correlation results show that there is a positive relationship between one product in a bundle and consumers' purchase intention.

#### **Additional Findings (Interaction effects)**

In addition to the main effects, interaction effects between independent variables (treatment variables) were found. The interaction effect is the effect produced by treatment of variable A and treatment of variable B simultaneously, which cannot be accounted by either treatment alone. If the effect of one treatment is different at different levels of the other treatment, interaction occurs (Zikmund 2000, p.263). The interaction effect may be greater than the total of the main effects.

ANOVA results reveal that there is a significant interaction effect between price and frame of the bundle ( $\text{Sig.} = 0.00 < 0.05$ ). Although, the main effect indicated that *mixed-leader* frame shows the highest purchase intention (mean = 5.756) for *overall price level*, the interaction effect shows that presenting customer with a *mixed-joint* frame has the highest score of purchase intention when the bundle price *decreased* (mean = 6.756). When bundle price is the same as the sum of the separate product price, mixed-leader frame is the most effective way to induce customer to buy, while mixed-joint frame is the least preferred. When the bundle price is higher than sum of the separate price, the average score of purchase intention of every frame is lower than 5, indicating that no matter what frame, customer will not purchase the bundle when the bundle price increases.

#### **Conclusions**

The following insights are drawn from a critical analysis of variance results.

First, ANOVA results confirm the study of Harlam et.al (1995) which indicated that a bundle composed of complementary products provides relatively higher purchase intention than one composed of unrelated products.

Secondly, although, several researchers, such as Dolan and Simon (1996); Cready (1991); Stremersch and Tellis (2002), indicated that discount is not a necessary condition for bundling and some customers are willing to pay a premium for the bundle, the result of research findings indicated that customers are not willing to pay a premium for the bundle. Respondents will buy the bundle when the bundle price is lower than the sum of the separate price. This finding is consistent with the law of demand, the lower the price of the bundle, the higher the purchase intention for that bundle.

Thirdly, when the prices of the separate products and a bundle are highlighted, respondents are sensitive to price increases as well as price decreases of the same amount. The result is in contrast with the study of Harlam et.al (1995) which is based on Prospect Theory which states that customers are sensitive to price increases rather than price decreases.

Fourthly, the results of ANOVA confirm the study of Harlam et.al (1995) and Stremersch and Tellis (2002) which indicated that presentation format (frame) of the bundle has an influence on consumers' purchase intention for bundles. Presenting respondents with a mixed-joint frame, mixed-leader frame and separate frame received different scores for purchase intention. In addition, there was an interaction effect between framing of the bundle and price of the bundle. ANOVA results indicated that when bundle price 'decreases', mixed-joint frame is the most effective way to induce respondents to buy the bundle, especially in the case of complementary products. When bundle price is the 'same' as the sum of the separate product price, mixed-leader frame is the best, while the mixed-joint frame is the least desirable. However, when the bundle price 'increases', respondents will not buy any bundle, irrespective of its frame.

Finally, the positive relationship between familiarity with (at least one) product within a bundle and purchase intention was found. This means the more respondents are familiar with the product within a bundle, the higher the purchase intention for that bundle.

## Recommendations

The research findings provide the following suggestions and useful implications to firms that would like to implement bundling strategy.

The first issue is the selection of products to be bundled. The complementarity aspect is a crucial aspect for firms to consider. Hence, before choosing product bundles, firms should be certain that customers consider the components of the bundle as complementary.

The second issue is the price of the bundle. When the prices of the separate products are highlighted, the bundle price should be set lower than the sum of the separate price. This study showed that, irrespective of a bundle composes of complementary or unrelated products, respondents are not willing to pay a premium for the bundle.

In addition, the result of this research indicated that respondents are sensitive to both price increases and price decreases. Therefore, firms should be careful when setting the price of the bundle. Setting the bundle's price lower than the sum of the separate product prices can

significantly increase purchase intention. However, setting the price of the bundle higher than the sum of the separate price can significantly decrease consumers' purchase intention.

A bundle's presentation format (or bundle's frame) is another issue that firms have to consider. Different frames of bundle affect respondents' purchase likelihood differently. Mixed-joint frame is the most effective way to induce respondents to buy when price decreases, especially in the case of complementary products bundle. When the price increases, no matter what frame, respondents will not buy the bundle. Thus, when presenting price of the bundle, integrating all discounted price into one single bundle price would be more effective than presenting a list of separate prices.

Finally, this study illustrates that there is a significant relationship between familiarity with product in a bundle and consumers' purchase intention. Therefore, to make a bundle more attractive, firms should ensure that potential customers are familiar with (at least one) product in a bundle.

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