The Use of 9-Ending Prices among Modern Retail Chain Stores in Thailand

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Abstract: The purpose of this study was to investigate the retailers pricing practice and the use of psychological pricing, particularly the prevalence of 9-ending prices, in a non-Western market. Prices, a total of 4,788 prices from 13 modern retail chain stores in Bangkok, Thailand, altogether with low-price cues, collected from retailers’ in-store promotional brochures are analyzed and tested for their relationships. Findings indicate that the use of 9-ending prices dominates the retailers pricing decision. The 9-ending prices are used to communicate low-price appeal as the relationship between the use of 9-ending prices and discount claims is positive. However, not all low-price claims required the use of 9-ending prices, a negative relationship between 9-ending prices and reference prices is reported in this study. As several pricing research has been conducted in Western markets, this research expands our understanding of the retailer’s pricing practices and the use of 9-ending prices with different low-price cues in the Asian context.

Keywords: Psychological pricing, 9-ending prices, reference price, odd prices, price promotion

INTRODUCTION

The trend toward standardization in global market raises an important question of how multinational firms should price their products. While many may prefer to use the same pricing tactics that are found to be effective in their home market, to some extent, their pricing practice must be consistent with the local context and culture. Most of the pricing research are conducted in the Western markets (Naipaul and Parsa, 2001; Schindler and Kibarian, 2001; Suri et al., 2004 for recent pricing studies). A limited number of such study exists in the Asian context (Hu et al., 2006; Parsa and Hu, 2004; Parsa and Naipaul, 2007; Schindler, 2009). The study of pricing practice in Asia is warranted by the difference in culture between Asian and Western markets. Research related to pricing practice in Asian market find that the Western-style prices, like 9-and 99-ending prices, are less common in Taiwan and Japan (Parsa and Hu, 2004; Schindler, 2009). Moreover, even in the central European country, like Poland, the 9-ending prices are not as well accepted as they are in the US market (Suri et al., 2004). Previous research indicated the symbolic and cultural meanings of different price ending digits (Schindler, 2009). As 9-ending prices are used to communicate discounted prices in the Western markets, consumers start to form certain perceptions of 9 price endings (Schindler and Kibarian, 2001). However, this association is not found in Asian markets like Taiwan and Japan. Instead, the use 8-ending prices are more prevalence in Taiwan and Japan as the digit 8 conveys favorable image in such culture. In Japan, the digit 8 is used to communicate low-price image, the way that the digit 9 is used in the US market.
(Schindler, 2009). However, it will be a mistake to draw a general conclusion that the price ending with the digit 8 predominates in all Asian markets. Despite the dominance of Chinese culture in Thailand, the digit 8 carries no special cultural meaning for Thais. On the other hands, the digit 9 is considered auspicious as its sound kao- is similar to the word moving forward which indicates growth and prosperity. Thus, a diverse cultural background in Asia could lead to a varying preference of price endings and pricing practices.

This study examines the retailer’s pricing practices and the role of price endings across different types of modern retail chain stores in Thailand. In addition, the study also examines the relationship between the use of 9-ending prices and the two major low-price cue-a price promotion message and a reference price.

Psychological pricing refers to the inclusion of consumer behavior in the firm’s pricing practice (Monroe, 1990). Pricing practices such as the use of odd-even price endings, customary pricing and prestige pricing are forms of psychological pricing (Hu et al., 2006). With psychological pricing, consumers are prone to base their purchase decision on the price of a product and on their emotional responses to such price. Psychological pricing, in particular the 9-ending price, is considered more important to a firm that has direct contact with consumers, such as in the retailing business (Herrmann and Moeser, 2006). Prices are not used only to communicate the economic value of the product; they are also used to convey certain marketing messages. Odd prices, particularly 9- and 99-ending prices are used by retailers to communicate low-price messages (Schindler and Kibarian, 2001; Schindler, 2006) whereas even prices, for example, 0-ending prices, are used to convey high quality and prestige image (Kreul, 1982; Parsa and Hu, 2004). As consumers’ decisions can be stimulated by the certain price endings. Previous price ending practices reveal that retailers favor certain digits of the price ending as they believe that these endings are able to communicate specific image to consumers. In a study of advertised prices in the newspaper by Schindler and Kirby (1997) the same result of an over-representation of three price ending digits 0, 5 and 9 is reported. In addition, the analysis of menus from quick-service restaurants by Naipaul and Parsa (2001) also reveals that 63% of menu prices of the quick service restaurant segment ended with 9’s. Previous psychological pricing and price ending research clearly indicate that the retailer’s choice of price ending does not occur by chance as the over-representation of certain digits is repeatedly confirmed in those studies.

Culture plays a vital role in determining the choice of price endings as Asian consumers attribute different meanings to different numbers (Parsa and Hu, 2004; Simmons and Schindler, 2003). In Chinese culture, the digit 9 is reserved only for the emperor; thus, it is prohibited from any commercial use. The digit 8 is pronounced in a manner that is similar to the word rich or prosperity while the digit 4 carries a negative connotation because it sounds similar to the word death (Parsa and Hu, 2004). In Japan, the same beliefs about numbers can be found. For Japanese, the digit 8 is considered a lucky number as its character’s shape conveys prosperity while the digit 4 connotes death. As a result of this unique cultural meaning of the digit 8, prices end with 8s are more prevalence in these markets than in the U.S. market (Parsa and Hu, 2004; Schindler, 2009). However, in Thailand, the digit 9 is pronounced kao which sounds similar to the word moving forward; thus for Thais, the digit 9 is considered auspicious as it represents one’s growth and prosperity. Therefore, the preference of price endings in Thailand could be different from what is found in other Asian countries as different cultural meaning is ascribed to different digits.

Two low-price cues are noted in previous psychological pricing literature: a price promotion message and a reference price. A price promotion message refers to any words or phrases that indicate that the selling price constitutes a saving to consumers and/or
describes the claimed saving (Schindler, 2006). Examples of price promotion message are terms such as Midnight Sale, Hot Sale, Super Save. Findings from Schindler's (2006) study suggest that retailers use 99-ending prices with a low-price cue message in order to convey and strengthen low-price image. To communicate low-price appeal, retailers may also use a reference price—a price [that is] included so as to be compared to the selected selling price (Schindler, 2006). With the presence of a reference price, the choice of price ending may not be limited to certain endings. Since, the original price of the item is stated, consumers can clearly understand that the price of the item is discounted. Thus, the use of 9-ending prices to communicate low-price appeal may be muted (Grewal et al., 1998; Kerin and Howard, 2006). However, there is still no study that examines and provides empirical evidence to support the relationship between the use of odd-ending prices, particularly the 9-ending prices and a reference price.

**MATERIALS AND METHODS**

Of particular interest of this study is how the modern retail chain stores in Thailand set their prices to attract customers. The study focuses on the use of price endings, which may vary according to the accompanying low-price cues. Chain stores are defined as groups of retail outlets that operate under central ownership and management and handle the same product lines (Kurtz and Boone, 2010). As these modern chain stores often communicate their prices publicly via their in-store brochures, prices across different chain stores can thus be conveniently collected and compared.

The level of consumer involvement in a purchase decision may determine the preference of price endings. In a case of high involvement purchase, the use of 9-ending prices is expected to be less common as consumers are less likely to base their purchase decision solely on the price of the product. Moreover, 9-ending prices can lead consumers to believe that the item is discounted and has lower quality (Naipaul and Parsa, 2001; Schindler, 1991; Schindler and Kibarian, 2001). As a result, the retailer who sells high price items may avoid the use of 9-ending prices in order to preserve the product and store’s image. Thus, the use of 9-ending prices will be constrained by the price level of the product.

- **H1**: There will be a negative relationship between the 9-ending price and the total price of the product. As the price of the product increases, the use of 9-ending decreases.

Since, most of purchase decisions that involve nondurable goods are relatively more spontaneous than purchase decisions of durable goods. Retailers who sell impulse products are more likely to end their prices with 9-endings in order to psychologically influence consumers’ price perception and stimulate sales. As 0-ending prices communicate prestige and high quality image, retailers who sell durable goods are more likely to choose 0-ending prices than 9-ending prices.

- **H2**: Prices of nondurable goods are more likely to end with the digit 9
- **H3**: Prices of durable goods are more likely to end with the digit 0

The retailer’s attempt to highlight a low-price appeal are more likely to use a combination of a word or a phrase, that communicates low-price image, together with 9-ending prices to further strengthen this low-price appeal. Thus, it is hypothesized that price promotion message is more likely to be used with 9-ending prices than any other price endings.
H4: When a price promotion message is used in the advertisement, the use of 9-ending prices increases

A reference price provided in an advertisement is viewed as a retailer’s attempt to convey low-price image without creating negative impressions about the product’s quality. With its presence, the difference between the original price and the new discounted price will be sufficient for consumers to evaluate the attractiveness of the deal; thus, the need for other low-price cues such as 9-ending prices is muted.

H5: When a reference price is used in the advertisement, the use of 9-ending prices decreases

As the modern retail chain stores tend to offer a specialized selection of merchandises (for example, a home decorating store that offers only home-related items), an effort was made to ensure that prices collected come from a diverse category of retailers to achieve a more balanced representation of product mix in the sampled prices. Another advantage of doing so is to ensure that the sampled price data cover a broader price range than when prices come from a limited number of specialized retail stores. In this study, advertised prices in retailer’s in-store brochures were used. This is due to the nature of marketing practice among the modern retail chain stores in Thailand. Although, some of these chain stores may advertise their prices in the newspaper, in-store brochures are used by all modern chain stores as the main communication channel of their price promotions. The popularity of the in-store brochure may come from its cost efficiency benefits that more prices can be advertised to the target shoppers and the cost of producing a brochure is lowering as the number of branches increases. Thus, in order to capture the advertised prices from as many different modern retail chain stores as possible, prices were collected from their in-store brochures rather than from the newspaper.

Prices in this research were collected from thirteen retailers located in the Bangkok area: Big C, Carrefour, Gourmet Market, Hardware House, Home Pro, Home Works, Index Living Mall, IT City, Office Depot, Power Buy, Tesco Lotus, Winner and Watson. These retailers represent a diverse category of retailing business in Thailand from supermarkets, hypermarkets, home improvement stores, to specialty stores. Retailers’ in-store promotional brochures were collected during the month of June 2010.

Coding

All prices sample featured in the brochure were recorded, except (1) prices that offer quantity or volume discounts such as buy one get one free, since the real price per unit is disguised by the volume purchased and (2) prices that have only one digit i.e., 8 Baht. Thus, from a total of 4,860 prices, 4,788 prices were used in the analysis. Numerical numbers of the price was recorded as it was presented in the advertisement, along with low-price cues: a price promotion message (as a dummy variable) and a reference price (also as a dummy variable) were recorded. For the analysis, all recorded price endings and their accompanying price promotion messages and reference prices were coded as dummy variables, according to the following equation:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \epsilon_i$$
where, \( Y_i \) was the price ending of an advertisement, \( X_{pi} \) was a price promotion message (1 = with a price promotion message and 0 = without price promotion message) and \( X_{ri} \) was a reference price (1 = with reference price and 0 = without reference price).

RESULTS

In order to keep the bias level to a minimum, a preliminary data analysis showed that most of the retailers accounted for no more than 10% of the total sample prices. Prices ending with 0s were accounted for 59% of the total price data, followed by 9-ending prices at 23% and 5-ending prices at 7.8%. The overrepresentation of these three digits was confirmed (binomial test, all \( p < 0.001 \)) with respect to the chance of their occurrence. Thus, the empirical evidence shows that retail prices in Thailand were deliberately set by the retailer to communicate certain marketing message and some digits of price endings were preferred over the others (Table 1).

All product items were classified either as consumer durable goods (electronics, appliances, furniture and office supplies) or nondurable goods (grocery items, household products and personal care products). From the total of 4,788 items, 61% was classified as consumer durable goods and 39% was classified as consumer nondurable goods. As detailed in the third and the forth column of Table 1, 9-ending prices dominated the retailer’s price ending practice for nondurable goods as it accounted for 38.5% of the advertised prices of nondurable goods, compared to only 12.9% of durable goods’ prices (this difference was statistically significant, \( \chi^2 (1) = 417.35, p < 0.001 \)). On the other hand, majority of durable goods’ prices ended with the digit 0 as it accounted for 80% of durable goods’ prices, compared to 28% of nondurable goods’ prices (this difference was also statistically significant, \( \chi^2 (1) = 1325.35, p < 0.001 \)). Therefore, Hypothesis H2 and H3 were confirmed that prices of nondurable goods were more likely to end with the digit 9 whereas prices of durable goods were more likely to end with the digit 0.

A binary logistic regression of the price data (Table 2) revealed interesting information of how retailers pricing practice changes according to the product’s price level. Since an increase in the number of total digits of price suggests an increase in price, for example, 29 Baht = 2 digits price and 299 = 3 digits price, a binary logistic regression showed that the use of the 9-ending prices negatively correlates with the number of price digits (\( t = -22.62, p < 0.01 \) for 4 digits prices and \( t = -9.73, p < 0.01 \) for 5 digits prices). Moreover, the occurrence of 0-ending prices, which suggest prestige image, positively correlated with the total price of the product (\( t = 25.76, p < 0.01 \) for 4 digits prices; and \( t = 17.00, p < 0.01 \) for 5 digits prices). This finding confirmed Hypothesis H1 that, in price promotion context, retailers tend to favor the use of 9-ending prices only when the price of the product is relatively low.

<table>
<thead>
<tr>
<th>Last digit of prices</th>
<th>% of total sample (n = 4,788)</th>
<th>% of durable goods (n = 2,919)</th>
<th>% of nondurable goods (n = 1,869)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>59.0</td>
<td>80.0</td>
<td>28.0</td>
</tr>
<tr>
<td>1</td>
<td>6.9</td>
<td>0.1</td>
<td>1.8</td>
</tr>
<tr>
<td>2</td>
<td>1.9</td>
<td>0.6</td>
<td>3.8</td>
</tr>
<tr>
<td>3</td>
<td>1.5</td>
<td>1.0</td>
<td>2.2</td>
</tr>
<tr>
<td>4</td>
<td>1.6</td>
<td>0.1</td>
<td>2.3</td>
</tr>
<tr>
<td>5</td>
<td>7.8</td>
<td>3.7</td>
<td>14.0</td>
</tr>
<tr>
<td>6</td>
<td>1.1</td>
<td>0.2</td>
<td>2.3</td>
</tr>
<tr>
<td>7</td>
<td>1.4</td>
<td>0.6</td>
<td>2.5</td>
</tr>
<tr>
<td>8</td>
<td>2.3</td>
<td>0.8</td>
<td>4.6</td>
</tr>
<tr>
<td>9</td>
<td>23.1</td>
<td>12.9</td>
<td>38.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 2: The choice of 0- and 9-endings and the product's price (n = 4,788)

| Variable | Coefficient | Std. error | t-statistic | Prob. 
|----------|-------------|------------|-------------|------
| 0 Ending prices | | | | 
| 2-Digits | -2.80 | 0.14 | -19.80 | **
| 3-Digits | -0.80 | 0.06 | -13.92 | **
| 4-Digits | 2.90 | 0.11 | 25.76 | **
| 5-Digits | 3.52 | 0.21 | 17.00 | **
| 9 Ending prices | | | | 
| 2-Digits | 0.44 | 0.01 | 30.30 | **
| 3-Digits | -0.15 | 0.05 | -2.90 | **
| 4-Digits | -3.71 | 0.16 | -22.62 | **
| 5-Digits | -5.63 | 0.58 | -9.73 | **

**p<0.01

Table 3: Price endings and low-price cues (n = 4,788)

| Price ending | Variable | Coefficient | Std. error | t-statistic | Prob. 
|--------------|----------|-------------|------------|-------------|------
| 0            | PPMESSAGE | -0.94       | 0.25       | -3.73       | 0.00**
|              | REFPRICE  | 0.72        | 0.24       | 2.99        | 0.00**
| 1            | PPMESSAGE | 0.22        | 0.30       | 0.74        | 0.46
|              | REFPRICE  | 0.38        | 0.21       | 1.77        | 0.08
| 2            | PPMESSAGE | -1.22       | 0.24       | -4.99       | 0.00**
|              | REFPRICE  | 0.06        | 0.24       | 0.26        | 0.79
| 3            | PPMESSAGE | -0.32       | 0.35       | -0.93       | 0.35
|              | REFPRICE  | 0.51        | 0.29       | 1.75        | 0.08
| 4            | PPMESSAGE | -0.25       | 0.13       | -1.91       | 0.06
|              | REFPRICE  | 1.13        | 0.11       | 10.19       | 0.00**
| 5            | PPMESSAGE | 0.07        | 0.39       | 0.19        | 0.85
|              | REFPRICE  | 0.05        | 0.30       | 0.16        | 0.87
| 6            | PPMESSAGE | -0.31       | 0.30       | -1.04       | 0.3
|              | REFPRICE  | 0.60        | 0.25       | 2.44        | 0.01*
| 7            | PPMESSAGE | -0.02       | 0.25       | -0.09       | 0.93
|              | REFPRICE  | 0.59        | 0.19       | 3.06        | 0.00**
| 8            | PPMESSAGE | -1.00       | 0.08       | -11.94      | 0.00**
|              | REFPRICE  | 0.70        | 0.07       | 9.79        | 0.00**
| 9            | PPMESSAGE | 1.17        | 0.08       | 13.91       | 0.00**
|              | REFPRICE  | -1.09       | 0.06       | -16.90      | 0.00**

PPMESSAGE = Price promotion message. REFPRICE = Reference price. *p<0.05, **p<0.01

Low-price Cues and 9-ending Prices

There is a positive relationship between 9-ending prices and price promotion messages (Table 3). This positive relationship was highly significant (t = 13.91, p<0.01). Thus, the model confirmed Hypothesis H4. When retailers decided to attract shoppers with price promotion message, they were more likely to use 9-ending prices to further emphasize the low-price image. On the other hands, the use of 0-ending prices showed a significant correlation with the occurrence of reference prices (t = 2.99, p<0.01) whereas the use of 9-ending prices negatively correlated with the use of reference prices in the advertisement (t = -16.90, p<0.01). This confirmed Hypothesis H5.

DISCUSSION

This study shows the current pricing practice, particularly the choice of price endings, of modern retail chain stores in Thailand and confirms the relationships between the 9-ending prices and two types of low-price cue in a non-Western retail context. The analysis of price data revealed that the choice of price ending is set deliberately by the retailer to communicate certain marketing messages to consumers. This finding is consistent with what has been reported in previous pricing research conducted in the Western markets (Kreul, 1982; Naipaul and Parsa, 2001; Parsa and Hu, 2004; Schindler and Kibarian, 2001). The retailer’s use of
9-ending prices in Thailand follows the format used in the U.S. market. In these two markets, the 9-ending prices are used to communicate low-price appeal as the relationship between 9-ending prices and a low-price cue, price promotion message, is highly positive. However, other Asian markets may not share this universal appeal of the 9-ending prices. A study of advertised prices in Japan reveals that the 8-ending prices are more preferred by Japanese firms when compared to their US counterparts (Schindler, 2009). Nevertheless, the 8-ending prices are used to serve similar purpose of communicating the low-price appeal. The empirical evidence of the negative relationship between the 9-ending price and the reference price is also reported; thereby confirming the theoretical relationships between these two variables, as suggested in previous reference price research (Grewal et al., 1998; Kerin and Howard, 2006). Thus, this study contributes to the existing 9-ending pricing research by expanding our understanding of how products are priced in other non-Western markets like Thailand. Findings suggest that retailers are using certain prices not only to communicate the monetary value of the products but also to highlight certain image of the product and the deal through the use of selective price ending digits.

CONCLUSION

Since, this study used only secondary data from retailers advertisements, its ability to show how price endings and the low-price cues influence consumer’s perception and behavior is limited. Future research may investigate how consumers interpret the meaning of price endings that may be subjected to consumer’s culture. Another possibility is to extend this study to examine the pricing practices of retailers in other countries in Asia to gain a total understanding of the pricing practices. With diverse ethnic groups and culture in Asia, the new insight into pricing practice is yet to be discovered.

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