Strategy Odd and Even Prices and its Effect on Female Buyers

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Abstract: *The results of this investigation confirm conclusively that psychological pricing strategy is more effective in women than in men. The consequences obtained from the sample of 300 buyers who were presented as stimulus products (condensed milk) with whole price and, even and odd, are conclusive; At first, the variables prices and consumer gender are related categorically (.0001<.05). Finally, H_0: "The strategy of price fixing odd and even doesn´t have more effective when valid for female buyers". It is rejected (P= .0002<.05). Finally, of total number of valid cases in the sample of women (166), the proportion who selected the pricing strategy is $P_1 = .7048$. While, the total number of men (131), the $P_2 = .4961$.*

Keywords: Pricing strategies, psychological prices, consumer gender.

JEL: M31; C12; D12.

1. Introduction

At present commercial activity competes by means of marketing mix which consists of product, place, promotion and price strategies. It is precisely at the price where we can find a lot of tricks that increase demand of a product. According Dupont (2004) establish the price is a very complex science and depends of product, in some marketing manuals choose to use odd prices, this means, prices ending in numbers 1,3,5,7 and 9 or just below a round number price. The supposed of these prices is that increase consumer awareness.

So, keep in mind that prices ending in 9 to 5 appear in more than 80% of retail prices. According to Cahners Advertising Research Report 1979 cited by Dupont (2004) 98.7% of consumers were influenced by the price to make a purchase. (Dupont, 2004).

In principle, when consumers are influenced by the price the small changes in prices may indicate differences in the product and in the consumer's perception, this means that a product of $ 300.00 is perceived as better quality compared with one of $ 299.99 even if the difference is only a penny, thus perceived quality is superior to the product of $ 300.00. (Kotler & Armstrong, 2008).

With respect to the odd price, these are set to control the bargains and instead the even prices usually are set to imply quality, it really changes the behavior of consumers in connection with the prices ending in 99 in relation to the prices ending in zero is the change in the digits on the left and not in the digits that ending price; an explanation for this phenomenon is found in an investigation that showed that when the price varied in the left digits from 20 to 19.99 consumers perceived more low the prices ending at 99, on the other hand, when left digits didn´t changed (23.60 to 23.59) the individuals perceived that prices were essentially the same. (Lamb, Hair, & McDaniel, 2011).

Notwithstanding, the commented before and in the absence of literature concerning the effectiveness of this pricing strategy in the female gender, that is why the central research question arises, What about the effectiveness of the strategy of fixing odd and even prices when is validated for female buyers?, this is, Does the strategy of odd and even prices tends to produce better results in women than in men?

For that this study raises the present hypothesis; H_0: "The strategy of fixing odd and even prices have not more effectiveness when it validated to female buyers." Therefore, the objective is estimate the proportion of female consumers who choose to purchase when the price is even and odd.

Know this purpose will allow consider the importance that have for the companies measure the real impact that this strategy has on buyers. The same way, this paper will be the base to future inquiries about as this kind of prices correlates with the perception that buyers takes about these as indicators of value, their relative importance in the marketing mix.

2. Review Literature

If we considering the importance of price in the marketing mix in general terms we can know that, according Schindler (2001) the price gives relative information about the quality of a product. Instead, the effects supposed some numbers according Psychological studies, such as 8 which create a soothing effect while 7 is an angle can creates a disruptive effect. (Kotler & Armstrong, 2008).

To clarify this idea, it considers the case in Chinese culture where numbers have meanings of superstition so seeing them can produce a favorable or stressful effect for individuals being that, the Chinese associate the number 8 with the good luck and prosperity; for the other hand, they find associated 4 with death. (Simmons & Schindler, 2002).

A very interesting work in relation to the comparative analysis between cultures diametrically different with respect to the fixing of odd and even prices is the study completed the same way in china where persons were asked (which did not know the purpose of the investigation) that

selected random prices from the major newspapers in China (sample of 499 prices), it was found that the most common numbers in the end prices are in order 8, 5 and 9. In contrast, the number 4 is the least used by traders.Thus, it was shown the ineffectiveness of the price strategy when the price ended in four such as high prices and low or cheap. (Simmons & Schindler, 2002).

About consideration, why is not usual to fix round Prices, This arises from two factors; first, the demand curves are not straight lines; the elasticity of demand for a product changes significantly at different price points and, secondly buyers perceive that the seller did everything to reduce the price. (Farrell & Hartline, 2006).

From all the above it is stated that: "Change of $ 45.95 to $ 49.95 perhaps as a result a small drop in demand. When the price reaches $ 50.00, just 5 cents more, the drop in demand can be more". (Farell & Hartline, 2006, p. 204)

What is really important is to analyze how a person usually just remember the numbers to the left of the price because these correspond to those with the most monetary value, this argument is where whe can find the success of the strategy just below because, these digits at the end of the price is not easily remembered. (Beracha & Seiler, 2013)

For example, prices ending in 0, 5 and 9 are overrepresented in the market. In finished in 9 two explanations are offered; the first one, indicates the trend of consumers to consider as a round price in which give change, the second one, consumers underestimate the price when it ends with 9 considering only the digits on the left through a mental process that selects the imperfect information. (Schindler & Kirby, 1997)

The result of odd prices ending in 9 increases demand and this increase depends on the product being offering. The effect that the price ending in 9 can cause is stronger in new products with which the consumer has had little experience in the past. (Anderson. & Simester. 2003).

On the other hand, according Schindler (2001), price ended 9 means, a discount on the price to the consumer and the opportunity to buy cheaper. For example, in the Apple store, , ITunes all product prices ending in 99 cents so consumers can read as 90 or even 9 cents and not a penny below the dollar. Even when the price of the albums varies depending the popularity of the artist, the Store keep the termination on $ 99. (Mckenzie, 2008).

As regards the scope of government organizations in some countries, i.e., Denmark, also apply these pricing strategies, as it is in the case of tax payment. (Olsen, 2011).

Note that, people tend to check the numbers(in prices) through a process from left to right. So, in Denmark of a universe of 9,533 observed taxes, the value of 19.9% in the tax rate is the most common. The Tax rates of just below of whole number are overrepresented. (Olsen, 2011).

According (Anderson & Simester, 2003) It is true that, there is limited empirical evidence that the digit at the end of price

affect demand. The explanation seems to be that is the way consumers process information about the price which is imperfect.

On the other hand (Choi, Li, Rangan, Chatterjee, & Singh, 2014) in the case where we have two products with exactly the same characteristics and one has set a price of $ 99.99 and other price is $ 100.00, research shows that consumers will be more likely to choose and buy the product of $ 99.99 even if the difference is $ 0.01.

As for the hedonistic consumption, odd prices may has negative implications for consumers because it allows them to justify, by pretending to be cheaper the purchase, leading to excessive consumption. (Choi, Li, Rangan, Chatterjee, & Singh, 2014). Quigley y Notarantonio in 1992, they investigated the image of the products with price ending with 00, comparing these prices with those ending in 99 or 98, what they discovered was that consumers tended to perceive a discount on those prices ending in 98 or 99, more than those ending in zero, they did not found statistical evidence of a significant difference between a price of 98 with one of 99 on the perception the effect of these two numbers were the same. (Schindler, 2001).

3. Materials and Methods

The study is basically quantitative transeccional of type descriptive / correlational. For processing and analysis of research SPSS V.19 is the software used. As units of analysis test 300 consumers were selected randomly in natural environment to those who were presented as stimuli (independent variable) groceries products (Condensed milk) with different levels of odd and even prices (psychological) and whole, to know the effect on the response variable (purchase decision).

4. Analytical Model

It is hypothesis testing of difference of proportions to two-sample statistical model applied. Which objective, is estimate the proportion of women opting for odd and even prices and conclude if there are significant differences regarding the behavior of men. Formalizing have:
If:

$$Z = \frac{P_1 - P_2}{\sqrt{\frac{P_c(1-P_c)}{n_1} + \frac{P_c(1-P_c)}{n_2}}} \tag{1}$$

Where:
P_1, proportion of the first sample
P_2, proportion of the second sample
n_1, number of observations of the first sample
n_2, number of observations of the second sample
P_c, set proportion

Thus,

$$P_c = \frac{X_1 + X_2}{n_1 + n_2}, \tag{2}$$

Where:

X_1, number having the characteristic in sample 1.
X_2, number having the characteristic in sample 2.

To estimate with confidence intervals, is:

$d = P_1 - P_2$, the difference in point unbiased estimate of:

$d = \pi_1 - \pi_2$, demographic, thus:

$$\sigma_d = \sqrt{\frac{\pi_1(1-\pi_1)}{n_1} + \frac{\pi_2(1-\pi_2)}{n_2}} \qquad (3)$$

Therefore, an approximation:

$$\sigma_d \cong S_d = \sqrt{\frac{P_1(1-P_1)}{n_1} + \frac{P_2(1-P_2)}{n_2}} \qquad (4)$$

Adapting to obtain limits (intervals) of confidence have:

$$\pi_1 - \pi_2 \cong (P_1 - P_2) \pm \left(Z\sqrt{\frac{P_1(1-P_1)}{n_1} + \frac{P_2(1-P_2)}{n_2}}\right) \qquad (5)$$

Fulfilling the postulation;

$n_1 \geq 30$ y $n_2 \geq 30$, normalized by:

$\pi(n) \geq 5$ Y $n(1-\pi) \geq 5$ to η_1 y η_2.

5. Results

This section describes variables of interest; buyer gender and purchase criterion used in relation to the odd and even prices and whole prices in the food sector (condensed milk). Thus, with regard to buyers, it summarized in Table 1. It stands within the valid percentage 44% which is conformed by men versus 56% of women.

Table 1: Consumer gender

Gen					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	131	43.7	44.0	44.0
	female	167	55.7	56.0	100.0
	Total	298	99.3	100.0	
Missing	System	2	.7		
Total		300	100.0		

Source: Authors.

Next, It presents information concerning to contingency table gender versus prices. The response categories for pricing_Strategy_ food variable it refers if; they chose psychological price; no, they did not and indifferent, they demonstrated insensitive to both strategies.

Table 2: Gen * Pric_Stra_food Crosstabulation

			Pric_Stra_food			
			yes	no	indifferent	Total
Gen	male	Count	65	10	56	131
		% of Total	21.9%	3.4%	18.9%	44.1%
	female	Count	117	10	39	166
		% of Total	39.4%	3.4%	13.1%	55.9%
Total		Count	182	20	95	297
		% of Total	61.3%	6.7%	32.0%	100.0%

It stands out from the table above that the total sample 61.3% of the subjects choose the strategy of odd and even prices, on the other hand, 38.7% selected the other options (not and indifferent). Figure 1 complements information.
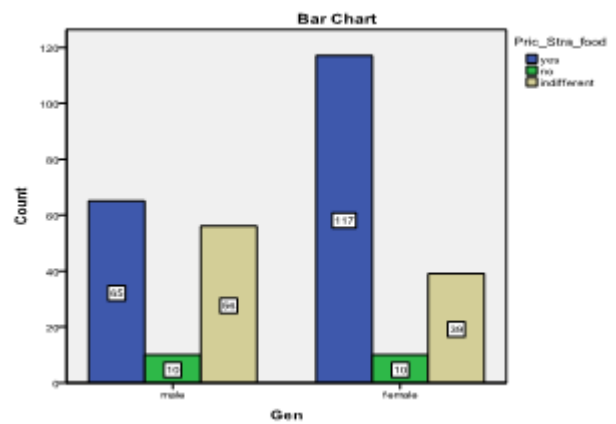

Figure 1: Gender and decision on the pricing strategy

Table 3: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.969[a]	2	.001
Likelihood Ratio	13.991	2	.001
Linear-by-Linear Association	13.868	1	.000
N of Valid Cases	297		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.82.			

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	.212	.001
N of Valid Cases		297	

From Table 3, it is concluded that effectively the variables are strongly related (.0001<.05). So, in the first instance it is assumed that women are more sensitive to strategy even and odd prices (39.4% of total). However, for greater accuracy we proceed to testing hypotheses considering only the proportion of consumers (by gender) that they are more sensitive to psychological pricing strategy.

The total number of women (166) the proportion who selected the pricing strategy is $P_{1=}$ .7048. While, the total number of men (131), la $P_{2=}$.4961. Thus, we obtain: P_c = .6127.

Therefore:

$$Z = \frac{0.70 - 0.49}{\sqrt{\frac{0.61(1-0.61)}{166}} + \sqrt{\frac{0.61(1-0.61)}{131}}} \qquad (6)$$

In this way, Z calculated is 2.65, therefore as α = 0.05 the critical value in bilateral test $Z_{.05}$ =1.96 and -1.96. Similarly, the value P= .006<.05. In conclusion, the null hypothesis (H_0) is rejected.

Finally, results are presented for confidence intervals:

$$.2087 \pm \left(1.96\sqrt{\frac{.7048(.2952)}{166}} + \sqrt{\frac{.4961(.5038)}{131}}\right) \qquad (7)$$

$$0.2087 \pm 0.1548$$

6. Discussion

As it regards the hypothesis test of this investigation; it is concluded that the test is statistically significant, (.0002<.05). Therefore, there is not empirical evidence of equal preference for psychological pricing strategy by gender. They are women who register in their favor a difference in the proportion of .2087 over men when choosing this pricing strategy. States categorically that it is women who are more susceptible to psychological price strategy; this is, the total valid cases (297), the 70.4% chose this route. In contrast, the gender male did only 49.6% percent.

It is important to highlight that the results of this study will be the bases for future inquiry in the way in which this kind of price are correlated with the perception that the consumer assumes the same as value indicators and, their relative importance in the marketing mix. Similarly, opens a window of opportunity to examine, if this behavior occurs equally in non-food products and, in the event of differences find their explanation.

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