

Absolute Amount or Percentage discount Framing The Moderate Role of Product Price

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Abstract: This research explores the impact of discount framing (Amount off, Percentage off) on customer perception of Purchase intention, perceived saving, with a moderate effect of product price. We have conducted a two by two between subject's design to examine the main effect of two levels of discount framing (Percentage off, Amount off) economically equivalent on the dependent variables, also to explore the interaction effect with two levels of product price (High-priced, low-priced). We have demonstrated that when customer consider a high-priced product, framing expressed as an amount off, results a higher purchase intention, perceived saving than the framing expressed as a percentage off. In contrast with a low-priced product, as the framing presented in percentage off, will results a higher purchase intention, perceived saving than the framing presented as an amount off.

Key Words: Discount framing, Amount off, Percentage off, Product price, Purchase intention, Perceived saving.

1 Introduction

Marketers are always trying to catch customer's attentions with different types of promotions; some promotions are more effective than others.

The use of price-based promotion is growing steadily to become one of the most widely effective promotion tools due to its ability to simulate sales on the short term (Lehmann,1997). Other researchers have considered the price-based promotion as a very rife marketing strategy to attract customers by providing them with extra value or incentive, which encourage them to purchase the promoted products immediately (Yin & Huang 2014). This research is going to shed light on one specific price-based promotional element called: "whether the discount framed as an amount off

or percentage off", taking into consideration the moderate role of product price on customer's purchase intention and perceived saving.

2 Theoretical Background:

In the context of price-based promotions. A study by (Grewal et al,1998) have found that customer response will differ between two discount price presentations even if they are economically equivalent. This finding is in line with "Physiological Theory" in explaining consumer behaviour, this theory posits the existence of implicit factors; in addition, the explicit factors contribute in forming consumer responses. However, it did not agree with the "Economical Theory" which focuses on explicit economic factors such as: supply, demand, income, price, in forming customer responses

that is why the economical approach could not explain customer choices based on how the price promotion is presented, but it relies on the tangible factors (Thaler, 1985). So, marketing researches suggest that not only the discount amount but also the way that the discount is expressed may influence consumer's perceived saving and hence the purchase intention (Ralph-C. Bayer, Changxia Ke, 2013).

2.1 Framing Effect

Prior researches have demonstrated the possible effect that might framing have on customer's evaluation when offering two kinds of sales promotion: non-monetary (e.g. free extra product) and monetary (e.g. discounts) promotions, (Campbell and Diamond, 1990). And based on (Tversky & Kahneman, 1979), customers evaluate deals differently according to the way that alternatives are being presented even if they are economically equivalent. This finding is in line with "Physiological Theory" in explaining consumer behavior, this theory posits the existence of implicit factors; in addition to the explicit factors which contribute in forming consumer responses. However, it did not agree with the "Economical Theory" which focuses on explicit economic factors, such as: supply, demand, income, price, in forming customer Responses. that is why the economical approach could not explain customer choices based on how the price promotion being presented, but it is only rely on the tangible factors (thaler 1985). So marketing researches suggest that not only the discount amount but also the way that the discount is expressed may influence consumer's perceived saving and hence the purchase intention (Ralph-C. Bayer, Changxia Ke, 2013),

several studies have confirmed that the presentation or the framing of message about products affect consumer's responses, as the framing effect was introduced by suggesting a topology to classify three main kinds of framing:

- 1- Risky choice framing
- 2- Attribute framing
- 3- Goal framing

the "Risky Choice Framing", related to problems that might take a place as a result of taking a decision, such as "Asian disease" related to choices between two alternatives and contingencies associated with particular choice, as the chosen option is controlled by the formulation of the choices & partially by the norms, habits & personal characteristics. For example, (Tversky & Kahneman, 1981) have carried out an experiment for a proposed disease that expected to kill 600 people, with two programs to combat the disease presented to sample from 152 respondent. Program A: 200 people will be saved. (72 percent chose this program) Program B: there is a 1/3 probability that 600 people will be saved, while 2/3 probability that no people will be saved. (28 percent chose this program). As the majority choice is risk averse, the prospect of certainly saving 200 lives is more attractive than the risky choice even though the two expected values are equal. As for the "attribute framing" that is related to the status of an event or a thing evaluated favorably when presented in positive frame more than the negative frame. (Gaeth, 1988) studied the framing attribute effect on consumer Responses between (positive frame & negative frame) for a beef product presented as 75% lean (Positive frame) versus 25% fat (negative frame). He has found that the positive frame evaluated higher than the negative nevertheless both options are the same. The third framing type is the "Goal Framing": this type focuses on the consequences of an event formed in positive frame that focuses on the "gains", or the negative framed option that take the attention on the negative consequences "loss". As people are more likely to choose an option when presented with negative consequences from not taking it compared with positive consequences

from taking it, (Ganzach and karashi, 1995) when a negatively framed message (the loss from using a cheque instead of credit cards) i.e not using the card will result a higher card utilization and charges than a positively framed message (the gains from using a credit card).The same will happen to price-based promotions, but not all studies have confirmed this, below is the summary of these studies.

3 Literature Review & Hypothesis development:

3.1 Framing Effect

Researchers in pricing domain have demonstrated amount off & percentage off discount framing effect on consumer's evaluation, but their results were not identical. some studies recommend that the amount off framing will have higher deal evaluation than the percentage framing, but others found opposite and mixed results, while others suggest the evaluation depends on the product value level, for example (Grewal & Marmorstein, 1994) found that the 50\$ reduction of a 100\$ product is relatively more attractive than on a product listed at 500\$. Similarly (Stigler, 1970) found that you will not pay to walk across the street to save (5% off a 2\$ item), but you will to save 25\$ (5% off a 500\$ item).

3.1.1 Studies concluded that Amount off is better than Percentage off

(Della Bitta et al, 1981) have tested the role of product price & price discount with a range of conditions for eight different ways to communicate the deal, two of these conditions were the amount off – percentage off discount, the result implies that the amount off condition was more effective in engendering greater value perception than the percentage discount.

(Chen et al, 1998) in their study that investigated the influence of regular price level and discount framing (monetary or percentage) on perceived attractiveness of discount amount, suggested that the normal or regular price influences the discount attractiveness when it is presented in absolute (monetary terms) rather than percentage terms. For Example: a 1000\$ discount on 20000 \$ automobile appears significant in terms of dollar saving, but the equivalent 5% discount seems less attractive.

(Draker & Freedman, 1993) have found that the amount off saving had a significant effect on consumer's intention to buy, through their experiments for four scenarios describing the purchase on plane tickets either in percentage off saving(save 5% off of base price 500\$) or amount off saving (save 25\$ off base price 500\$)

3.1.2 Studies concluded that Amount off is better than Percentage off

(Chen et al, 1998) found no difference between the discount farming on purchase intention in general but there would be a difference depending on the price level of the promoted product, as the amount off discounts will serve the high-priced products while the percentage off discounts will serve the low-priced products. (Isabella et al, 2012) have investigated the framing effect by an experiment that uses the stimulus (Pizza) that presents the discount and the final price without mentioning the original price, as the net price remains the same for all experiments scenarios, the result was 62% percentage discount appeared more attractive when the pizza price was 31R\$. (Gendall, 2006) ran a three-option choice experiment for four products type; two of them was, low-priced. The other two was, high-priced with two conditions of discount framing (amount off- percentage off) for each product, their results indicate that the amount off discount results a higher purchase intentions while the product price is high, but the

percentage discount appeared to be more significant when the discount framing was parentage for the low priced products.

3.2 The Absolute number Heuristic principle

Consumer’s decisions concerning price search and price evaluation were investigated using the absolute number heuristic principle, which is extended to heuristic and systematic model of social judgement. In this principle, consumers evaluate the perceived value of the discount according to the absolute number of this discount; a 10% discount will be heuristically processed in customers mind and anchors around 10, as the customer will not calculate the actual discount amount. If the promoted product is high-priced, the percentage discount might be neglected, that is why consumers evaluate discounts in absolute amount rather than percentages. For example: assume that we have a product with an original price 200\$ promoted in two different ways of discount (20\$ off - 10% off), the customer in the dollar amount condition will make a coding process for the (20\$ to be associated with 20), and he will view it as better than the 10% since (10% associated with 10).

The same results will appear even if the customers are familiar with percentages and dollar amount discounts. Customers will focus on the absolute number regardless of other cues, so a 20% discount will be perceived better than 10\$ for a 50\$ item, and 20% discount will be perceived smaller than a 80\$ for a 400\$ item, this observation is in line with what (Morwitz, 1998) have found “the customers are not accurate in calculating the percentage discount”.

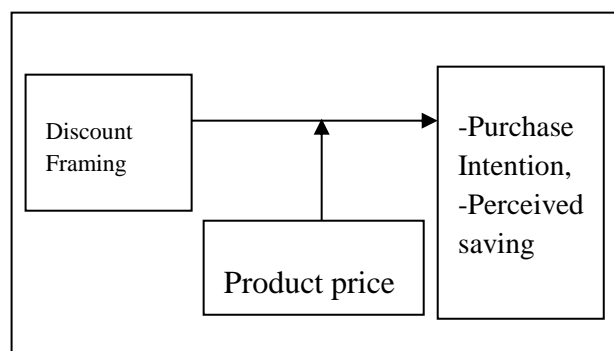
As a conclusion, for high priced product, the absolute number related to the amount off discount will be perceived bigger than the absolute number related to the percentage discount although if they are economically equivalent, i.e. (20 associated with 20\$ from

200\$ item) will be perceived greater than (10 associated with 10% from 200\$ item). As for the low-priced products, the absolute number related to the amount off discount will be perceived smaller than the absolute number related to the percentage discount although if they are economically equivalent, i.e. (20 associated with 20% from 50\$ item) will be perceived greater than (10 associated with 10\$ from 50\$ item). And based on the above arguments we could hypothesize the following:

H1a: for high priced products, customers will have a higher purchase intention, perceived saving for an absolute amount discount rather than percentage discount economically equivalent.

H1b: for low priced products, customers will have a higher purchase intention, perceived saving for a percentage discount rather than an absolute amount discount although, they are economically equivalent.

4 Research Conceptual Model



Where the discount framing has two values (Absolute value SYP, Percentage discount %), as for the product price has also two values (High price, Low price)

5 Methodology

5.1 Design, instrument and stimuli

One hundred ninety-three students from higher institute of languages in Damascus Syria participated in this 2X2 between subject's design study. The manipulated product was (Jacket) for high priced products & (leather gloves) for the low-priced products both of them presented with two different discount framing economically equivalent (absolute Syrian pound discount, percentage discount) while the dependent variables were purchase intentions & perceived saving.

Participants randomly assigned in one from four scenarios of product price level & discount framing, as the study scenarios were as the following: In the high-priced conditions, the product was (Jacket) Scenario A: original price 38,500 SP with absolute amount discount 9,625 SP. Scenario B: original price 38,500 SP with Percentage discount 25%. In the low-priced condition, the product was (leather gloves) Scenario C: original price 3,700 SP with absolute amount discount 925 SP. Scenario D: original price 3,700 SP with Percentage discount 25%.

5.2 Measures

The first dependent variable was the purchase intention adopted from (Sweeney et al, 1999) measured with three items 7-points Likert scale (I would consider buying this product with this price discount, There is a strong likelihood that I would buy this product with this price discount, I would purchase this product with this price discount) reliable with ($\alpha = 0.88$). The second dependent variable was the perceived saving adopted from (Biswas, 1993), measured with three items 7-points Likert scale, (The amount of discount offered on this product represents large savings, The amount of money that customers would save on this product is very large, The amount of discount stated for this product is very high) and it was reliable ($\alpha = 0.83$).

5.3 Descriptive statistics:

Below table, summarizes the demographic distribution of the respondents

Table 1 Sex Descriptive Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	41	21.2	21.2	21.2
	Female	152	78.8	78.8	100.0
	Total	193	100.0	100.0	

Table 2 Age Descriptive Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below 18	4	2.1	2.1	2.1
	between 18 & 24	147	76.2	76.2	78.2
	between 25 & 30	38	19.7	19.7	97.9
	more than 30	4	2.1	2.1	100.0
	Total	193	100.0	100.0	

Table 3 Education Descriptive Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary/Institute	15	7.8	7.8	7.8
	Bachelor Degree	165	85.5	85.5	93.3
	Master	13	6.7	6.7	100.0
	Total	193	100.0	100.0	

5.4 Exploratory factor analysis

This study employed factor analysis to determine the number of items in our questionnaire with actually measured the latent variables; data was loaded statistically on factors that are in dependent to the theoretical background. The measure of Kaiser-Mayer-Olkin's (KMO) theoretically vary between zero and one (Pinsonneault & Kraemer, 1993) and when it is closer to one, it explains a perfect correlation between the variables. The result of KMO value which was (71%) so it is accepted and we can proceed with factor analysis, as for Bartlett's test of Sphericity revealed that ($\chi^2=585$, Sig=0.00) which proved that there is a sufficient relationship between variables. Table 1 presents the KMO & Bartlett's test results:

Table 4 KMO & Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.719
Bartlett's Test of Sphericity	Approx. Chi-Square	585.970
	Sig.	.000

Subsequently, a principle axis factoring with Varimax Rotation was conducted on the dependent variables, purchase intention & perceived saving. All factors that are involved in this study were loaded for factor analysis with unspecified eigenvalue, which results the extraction of two factors that are explaining (68.7%) of the entire variance extracted, the first factor explained (42%) while the second factor explained (26%) from the whole variance in the entire data. Below table illustrates the total variance explained.

Table 5 total variance explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.839	47.314	47.314	2.556	42.601	42.601
2	1.891	31.518	78.832	1.572	26.192	68.793

Below table expresses the loading factors that confirms the two dependent variables representation, loading below 40% are excluded from the analysis (Pallant, 2009), where the others reflects that we have two factors confirming the latent items for the dependent variables (Purchase intention & perceived saving), also we can see the acceptable Cronbach's alpha of the constructs after the cross loaded items.

Table 6 Rotated Factor Matrix

	Loading Factor		Cronbach's Alpha
	1	2	
There is a strong likelihood that I would buy this product with this price discount.	.947		0.88
I would consider buying this product with this price discount	.823		

I would purchase this product with this price discount	.770		
The amount of money that customers would save on this product is very large		.875	0.83
The amount of discount offered on this product represents large savings		.770	
The amount of discount stated for this product is very high		.725	

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.^a

5.5 Hypothesis test:

In order to test our two hypotheses, we have conducted a 2X2 Anova analysis for two conditions of price discount framing (Absolute value, Percentage) X two levels of product price (High priced, Low priced) on the dependent variables to investigate the main and the interaction effect. We have found that there was no significant main effect for discount framing on the dependent variables (Sig was higher than 0.05) among the four study scenarios. But as expected, we have found a significant interaction effect for (Discount framing X product price) on the dependent variables (sig=0.00) for purchase intention & (sig=0.001), below table explain the 2X2 Anova test results.

Table 7 Test of Between-Subjects Effect

Source	Dependent Variable	Type III Sum of Squares	Mean Square	F	Sig.
Corrected Model	Purchase Intention	58.118 ^a	19.373	12.074	.000
	Perceived Saving	73.816 ^b	24.605	19.003	.000
Intercept	Purchase Intention	3715.222	3715.222	2315.502	.000
	Perceived Saving	3017.588	3017.588	2330.562	.000
Discount_Framing	Purchase Intention	.015	.015	.009	.924
	Perceived Saving	.100	.100	.077	.782
Product_Value	Purchase Intention	31.156	31.156	19.418	.000
	Perceived Saving	59.226	59.226	45.742	.000
	Purchase Intention	27.225	27.225	16.968	.000

Discount_Framing Perceived Saving * Product_Value	14.775	14.775	11.411	.001
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After we found that the interaction effect was significant, we have conducted an independent samples t-test for the discount framing as independent variable in high priced product condition then low-priced products condition on the dependent variables. Below tables represent the means differences for the purchase intention & perceived saving based on the discount framing levels, table (8) for the high-priced products and table (9) for the low-priced products.

Table 8 Independent Samples t-test for High Priced products

		Levene's Test for Equality of Variances		Test for Equality of Means			Mean Absolute value	Mean Percentage
		F	Sig.	t	df	Sig. (2-tailed)		
		Purchase intention	Equal variances assumed	.753	.388	2.879		
	Equal variances not assumed			2.882	94.57	.005		
Perceived saving	Equal variances assumed	.495	.484	2.597	95	.011	4.8	4.2
	Equal variances not assumed			2.597	94.99	.011		

Table 8 Independent Samples t-test for low Priced products

		Levene's Test for Equality of Variances		Test for Equality of Means			Mean Absolute value	Mean Percentage
		F	Sig.	t	df	Sig. (2-tailed)		
		Purchase intention	Equal variances assumed	.097	.756	2.962		
	Equal variances not assumed			2.962	91.88	.004		
Perceived saving	Equal variances assumed	1.876	.174	2.232	94	.028	3.1	3.6
	Equal variances not assumed			2.232	92.14	.027		

5.6 Results:

5.6.1 Purchase intention

An analysis of independent samples t-test in table (8) revealed a significant means differences according to the discount framing level, as respondents indicate a greater likelihood to purchase a high priced product promoted higher purchase intention if the discount framed as an absolute value versus percentage ($M_{Absolute} = 5.2, M_{Percentage} = 4.4; F(.753), P < 0.05$). In the lower priced condition in table (9), participants indicated a higher likelihood of purchase intention when the discount framed as percentage versus absolute value ($M_{Absolute} = 3.6, M_{Percentage} = 4.3; F(.097), P < 0.04$).

Figure 2 Purchase Intention Comparison

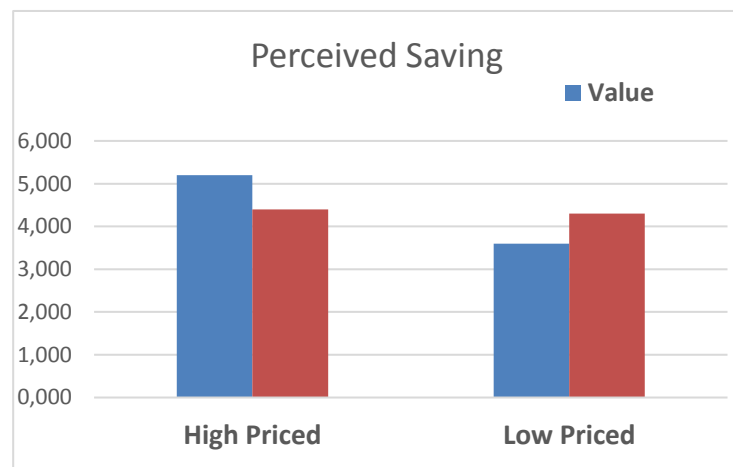


5.6.2 Perceived saving

The independent samples t-test for the perceived saving in table (8), revealed a significant mean differences according to the discount framing level, as participant expresses a higher perceived saving for a high priced product offered with an absolute amount discount versus percentage discount ($M_{Absolute} = 4.2, M_{Percentage} = 4.8; F(.495), P < 0.01$). In the lower priced product condition, table (9) illustrates

that respondent expresses a higher perceived saving for the discount framed as percentage versus the discount framed as an absolute amount ($M_{Absolute} = 3.1, M_{Percentage} = 3.6; F(1.876), P < 0.02$).

Figure 3 Perceived Saving Comparison



6 General discussion

This study provides consistent evidence that respondent prefer the absolute amount saving over the percentage framing for the high-priced products, the results are directionally higher for percentage discount over the absolute framing.

The numeric value for saving in the high-priced products condition (9,625 SP) which encoded to the magnitude of (96), is higher than the percentage (40%) which encoded to (40). similarly the same for the lower priced products, as the magnitude of (40%) is higher than the absolute value discount (3,700 SP) which encoded to (37).

This result supports the explanation based on the absolute number heuristic or the number magnitude effect.

7 Limitation & future research

This study is limited to one product category, which is (apparel products), to really understand the underlying phenomena more studies could be needed in this area.

Applying the same study in different industries, product categories or other cultures would enhance our understanding for the effect of equivalent discount framing in different ways; also, we could include the discount depth and its relation with the discount attractiveness in our future research.

Further studies may test the generalizability of this study by assessing whether these results generalize across different high price levels, or even less expensive products as it may affect the saving will the price of the product goes higher or lower, the saving will so as well. Future studies also could investigate if the results could change when shopping through online- versus offline methods.

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