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Using Decoy as a Nudge: Effects of Decoy and Psychological Pricing in Relation to Buying Behaviour

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ABSTRACT

The decoy effect hypothesizes that inserting a "decoy" into a choice set will cause consumers to switch their preference to a higher priced targeted product. This study examines the effect of decoy by manipulating price signs, product sizes and color on age and gender in urban population. The objectives of the paper is to review cognitive bias in presence of decoy and observe the effect of time pressure on asymmetric dominance. The study is an experiment through a survey, using a single blind method. It utilizes a single and multi - variate chi square test for hypotheses. Pearson, Rank coefficient and trend analysis have been used. The study had hypothesized 5 situations, all are statistically significant

***Keywords**: Decoy effect, consumer behavior, shelf placement, font size and color, cognitive dissonance.*

INTRODUCTION

The decoy effect is a consumer behaviour model which hypothesises that inserting a carefully constructed "decoy" into a choice set will cause a segment of consumers to switch their preference to a higher priced targeted product. When contrasted to the other products in the choice set, the decoy is a high-priced, low-value item. This study examines the effect of decoy alongside theories of psychology by manipulating price signs, product sizes and colour on age and gender in the urban population.

SELECTION OF THE PROBLEM

The main reason for a researcher to attend to a problem is its practical usefulness. The problem is important as hundreds of consumers make

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purchase decisions everyday and marketers are unaware of the cognitions during purchase decisions which could potentially influence the purchase decision favourably. Scarcity and neuroeconomics play an important role during persuasion of consumers towards the target product, which is the main objective of this study. The research took three months to complete, which was convenient. The culture of the area in which a researcher conducts research, as well as the ease of experiment operationalization and feasibility, influence the choice of research problem. The selection is influenced by the researcher's knowledge, skills, interest, motivation and creativity.

LITERATURE REVIEW

The decoy effect is the introduction of a third product in order to enhance consumer interest in higher-priced products, presence of which creates dissonance that the consumer needs to make the buying decision immediately or the offer won't be available in the future. This need for impulse buying is aroused in the presence of a decoy. This need for impulse buying is aroused in the presence of a decoy (Festinger). According to Kanheman we as fast thinkers rely on low cognition and impulses to purchase in the situation of cognitive dissonance leading us to pick non economic product alternatives. A study conducted by Hashem et al. (2020) states that the rate of impulsive decisions made by consumers drastically increases in the presence of a decoy product.

Colours have been shown to have a significant influence on perception. Fairchild, 2013, states that variance in hue, lightness or chroma could have an impact on downstream effects, cognition, or behaviour. Warm colours may produce a quick decision in cases where deliberations are not necessary and impulse purchases are common, Joseph Bellizi et al.

Activated consumers may be more likely to engage in impulse buying. Red has the maximum wavelength from all the colours in the spectrum while black, as it is not listed as a colour in theoretical physics, has a wavelength of zero. This study measures the difference in activation of consumers

through the colour of the price sign. Cowry et. al. suggests the activation component is more appropriate while considering purchasing behaviour. An activated consumer is more likely to buy on the spur of the moment. Colours that are more activating, such as red and blue, are the most suitable for a price sign, as it has the maximum wavelength amidst all the colours on the spectrum. Adding to this, Gorn et. al. it is discovered that colours can be used as an executional cue to influence consumers to purchase more of the target product.

Product size affects quality judgments, as well as a price-based framework for the identified size–quality relationship. Smaller packages are associated with a higher unit price. Since overall price is the only explicitly-provided price cue and consumers are too distracted to assess unit price, large products are rated as higher.(Yan et al).

The predisposition of consumers to select the alternative in the centre of an array, as well as the process underlying one such effect, are investigated, by Atalay et al. (2012).

Lichtenstein et al. (1993) suggests different ways in which consumers perceive price into, positive and negative. This has been extrapolated into the study by operationalizing price and adapting it to serve as low price search, price - quality schema.

Perception of time distorting experiences when faced with a decoy are critical because they occur in situations where small differences in behaviour can mean the difference between correct product choice or irrational purchase.(Hancock et al. (2005).

Gary McKinnon et al. investigated the type of message included on the sign (price - only or product benefit statements). Rizqi Akbar et al., 2020 suggests that increase in information improves the chances of a fair purchase decision being made. The study also states that as more information is available, the decision making process becomes easier and reduces cognitive dissonance. When the amount of information provided by different products

varies, consumers may prefer the products which provide the most information. PATTON III. Given this finding, it is entirely possible that consumers will base their product selection decisions on how much information is provided.

Research conducted by Julian, 2019, found that increased font size does not increase the purchase behaviour although it causes synthesising of triggers leading to improved product quality perception, memory and emotional appeal. The consumers believe that only important changes in prices increase the attention given to products with a larger font size.

OBJECTIVES

1. To review the cognitive bias in presence of decoy
2. To observe the effect of time pressure on asymmetric dominance
3. To analyse the effect of placement of prices and products
4. To account for gender, age and level of education on consumer's response in the presence of a decoy
5. To verify the effect of changes in colour, font size and other marketing strategies

HYPOTHESES

1. Effect of decoy and lack of information on perception of price- quality relationship

The researcher proposes that the lack of information and presence of a decoy distorts the price - quality perception of the participants. The participant perceives a positive correlation between price and quality before the participant is exposed to an additional decoy in stage 2 and additional information in stage 3.

H1a: Those exposed to additional information versus only - price information, used as an executional cue, will not choose the target product and choose ‘small’.

H0a: There will be no effect of information, used as an executional cue, in a choice- set, on purchase behaviour.

2. Effect of decoy in reinforcing impulse purchase behaviour

The decoy effect is deceptive in nature, the alternative seems value for money and 'too good to be true'. Due to this consumers believe that the need to make the decision at the earliest as the offer is limited and scarce. This false sense of urgency leads to consumers not evaluating all the alternatives thoroughly.

H1b: Those exposed to a decoy containing price only information, used as an executional cue, will be more impulsive in decision making, will feel a false sense of urgency and the post purchase satisfaction will be higher.
H0b; Those exposed to a decoy containing price - only information, used as an executional cue, will show no effects of impulsive purchases, false sense of urgency and not demonstrate any post purchase satisfaction.

3. Effect of decoy in increasing purchase of target product

The study aims to use the decoy effect as a nudge to influence the purchase of the target product. Participants are exposed to 'small' and 'large' product sizes. Large product is a decoy which is a high cost and low value product and is introduced before 'medium'. The study has shown that after exposure to a decoy product, the target product is purchased more than the alternatives available.

H1c: Those exposed to the target product after the decoy, as an executional cue, will purchase the target product and reject the decoy.
H0c: Those exposed to the target product after the decoy, as an executional cue, will have no effect on purchase behaviour.

4. Effect of price font size and colour on likelihood of purchase behaviour

In this study, two conditions have been created relating to font size and

colour; three different conditions within each, changing the font size for each product and changing the colour of the price sign for each product; giving 6 experimental conditions.

H1d (i): Those exposed to the products with a larger font size versus regular font size, as an executional cue, will purchase the product with the larger font size and reject the others.
H0d (i): Those exposed to the product with a larger font size versus regular font size, as an executional cue, will have no effect on purchase behaviour.

AND

H1d (ii): Those exposed to the products with red coloured price signage versus black coloured price signage, as an executional cue, wil purchase the product with the red coloured price signage and reject the others.
H0d (ii): Those exposed to the product with red coloured price signage versus black coloured price signage, as an executional cue, will have no effect on purchase behaviour.

5. Effects of product size on likelihood of purchase behaviour

As the size of a product increases, the likelihood of it being sold also increases as perception of a positive price - quantity relationship enables consumers to purchase the product they consider 'value for money'. The researcher manipulated conditions to examine the effects of product size in the presence of price only information. Small and large products of the same size are compared to small, medium and large. This gives the researcher 4 experimental conditions to develop a causal link between size and purchasing behaviour.

H1e: Those exposed to the products which are larger in size (medium and large) versus regular size, as an executional cue, will purchase the products which are larger in size (medium and large) and reject the others.
H0e: Those exposed to the product which are larger versus regular size, as an executional cue, will have no effect on purchase behaviour.

RESEARCH METHODOLOGY

Type of study

The study is an experiment through a survey which uses a single - blind method to investigate relationship between variables through using a logistic model and correlations after a systematic review and a Meta - Analysis.

Study Design

a) Survey:

The study was conducted through a questionnaire with 33 questions. Subjects were selected randomly via circulating the form on social media and provided a total of 207 people who purchase regularly to fill the form for the survey.

b) **Participants**

1. All participants are people who purchase regularly
2. All participants are above the age of sixteen
3. All participants have completed tenth standard or equivalent
4. Consent will be required for participation
5. All participants are debriefed after the study

c) ***Sampling design***

For probability methods, the researcher has used cluster/ multistage sampling, where all participants had at least cleared their tenth standard or equivalent of education. The sample were all regular purchasers who lived in urban areas most of whom considered themselves to be rational buyers and believed income and price are restricting factors in their purchase decisions. For non - probability, snowball sampling has been used.

d) ***Limitations***

The study was conducted on 207 people and the profile of the sample was restricted to participants who were above the age of 16, lived in urban areas and completed tenth standard or equivalent. Inquiry was based on closed -

ended questions which lead to exclusion of subjective opinions and personal differences in buying preferences. Extraneous variables such as income, lifestyle and tastes and preferences have not been considered. Disposable income is hypothetical and may not be true in case of a real world scenario.

PRIMARY DATA COLLECTION

The independent variables in this study are placement of product, colour and font size of the price sign, size of the product and presence of decoy option as individual factors. The dependent variables under study are purchase of target product in presence of a decoy through rejection of the decoy, attraction effect causing an increase in likelihood of purchase through colour and size of price sign, impulsive buying behaviour and buyer's remorse in presence of a decoy; again, as individual factors.

The study has been bifurcated into 3 stages for ease of research. The first stage consists of demographic questions and questions regarding their purchasing habits before exposing them to decoys.

The second stage is where the participants were exposed to the decoy, consisting of a hypothetical situation where a restriction of disposable income is provided and a series of pictorial representations of two products depicted on white and black backgrounds respectively. Both products were operationalised to measure the purchase behaviour through modification of placement, size, presence of decoy, font colour and font size. The consumers were required to answer which product they were most likely to purchase.

The last stage was a debriefing stage wherein the earlier purchase decisions were reviewed by the consumer. The review consisted of questions interrogating the consumer regarding impulsiveness, time pressure, their perception of product quality relationships and rational decisions. The same pictures produced in stage two were shown with additional information regarding the quantity of the products in numerical value. Participants were asked to assess which product they would purchase and which one seems more economical. Questions were pertaining to measuring buyer's remorse,

distorted perception of product quality and price relationship and the need for additional information to make purchase decisions.

SECONDARY DATA COLLECTION

Price perception and attitudes

Price perception concerns how price information is comprehended by consumers and made meaningful to them. One approach to understanding price perceptions is information processing which has been advocated in Figure 1.

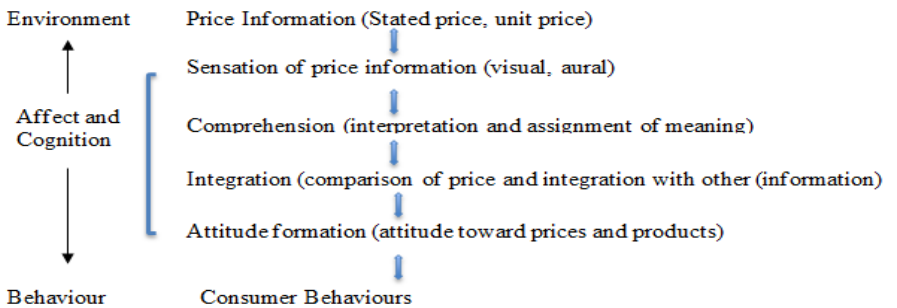

Figure 1: Price effects for a high - involvement product or purchase situation.

This model illustrates an approach to describing price effects for a high - involvement product or purchase situation. Basically, it suggests that price information is received through sense of sight and hearing. The information is then comprehended , which means it is interpreted and made meaningful (consumers understand the meanings of price symbols through previous learning and experience).

Price Behaviour

Depending on the consumer, the product and its availability in various stores and other channels, and other elements of the situation, price can affect a variety of consumer behaviours.

1. Funds Access: One source of embarrassment for most consumers is to arrive at the point in the purchase process where they have to produce funds for an exchange. Consumers exchange much more than money for products, They also exchange their time, cognitive activity, and behaviour effort. Analysis of these elements may provide better insights into the effects of price on consumer behaviour.

2. Transactions: Analysis of the value consumers receive in purchase and consumption may provide better insights into the effects of price on consumer behaviour. Consumers exchange much more than money for products, They also exchange their time, cognitive activity, and behaviour effort. Analysis of these elements, and of what they do with their time and effort, may provide insights into how prices affect their behaviour.

Price Environment

Price is the most tangible element of the marketing mix. From an environmental perspective, this means the price variable typically offers little for the consumer to experience at the sensory level. The price variable may also include an external reference price.

In - store stimuli

In most environments, an endless number of stimuli can influence affect, cognitions and behaviour. A retail store is no exception. Stores have many stimuli that influence consumers: the characteristics of other shoppers and salespeople, lighting, noises, smells, temperature, shelf space and displays, signs, colours and merchandise. Although the effects of some in - store stimuli have been studied extensively, much of this research is proprietary.

TABULATION OF DATA

Age	Gender	Number of Respondents
16 to 20 years	Male	48
16 to 20 years	Female	88
16 to 20 years	Non - Binary	3
21 to 25 years	Male	24
21 to 25 years	Female	21
26 to 30 years	Male	1
26 to 30 years	Female	6
31 years and above	Male	3
31 years and above	Female	13

Table 1: Demography of sample

TECHNIQUES AND TOOLS OF DATA ANALYSIS

The study utilises a single and ,multi - variate chi square test to test the hypotheses. A Pearson test of correlation along with Rank coefficient of correlation has been used to find the existence of relationship between the defined variables. A trend analysis is used to identify differences in gender and purchase behaviour through and between the age ranges.

FINDINGS

The study had hypothesised 5 situations, all of which are statistically significant, proving the statements to be true for the sample population.

People from the ages of 16 to 20 do not regret their impulsive purchases. Regret creeps up for those who are 21 to 25 as their disposable income is self-earned. An overall trend of females regretting their purchases more than males suggests that they make decisions irrationally. Females regret their purchases the most, followed by males and non - binary people. This can be useful while pricing products and considering the target audience of the

potential market. Consumers who have a higher level of education are less impulsive and regret their purchases less as compared to their less educated counterparts..

Impulsive buying behaviour can be triggered through various marketing strategies and could lead to a higher secondary purchase revenue for the store. People who do not consider their income to be limiting, tend to overspend and make impulsive and unnecessary purchases and regret them almost instantly. This can be considered while increasing impulse purchases at the Point of Sale.

There exists a positive price - quality relationship due to which people assume the quality of the product is higher as the price increases. Having a distorted sense of this relationship causes consumers to buy products which are more expensive without having an understanding of the difference in quality. A decoy situation can be created for an organisation to maximise sales revenue in such a case. The organisation can simply add a decoy product and push the sales of the target product. There also exists a positive price - quantity relationship. Similarly, although positive to an extent, does not increase in linearity, Price of the product is always raised at a higher pace than the quantity offered. In conjunction with a decoy, the organisation can maximise their profits by simply adding a decoy product and pushing the sales of the higher priced target product.

There is a negative relationship between perception of impulse buying behaviour and positive price quality and quantity relationships. This is because people make decisions based on product attraction and not rationality of quality and cost benefit analysis. There is a higher percentage of females who believe that there exists a positive price-quality relationship than males.

People who do not consider themselves impulsive buyers, are almost always irrational consumers who regret their purchase. A false sense of time pressure is created due to the decoy which acts as an executional cue for impulsive purchase behaviour. The higher time pressure, the higher will be

impulsive behaviour and actual regret. As assumed, the higher the frequency of regret of purchases, the higher would be the regret of most purchases. A decoy can be used to increase frequency of purchases leading to more irrational and baseless purchase decisions and increasing the profit potential of the organisation.

In the situation where the additional information is not given, the purchase of the target product causes the purchase regret to be lower. This is to reduce the cognitive bias created by the decoy and price - only information. Although the purchase regret increases after being exposed to more information.

As the size of the product increases, there is an increase in purchase of the larger product sizes due to the existence of a false perception of price - quantity relations. Products with the larger font sizes are purchased more as attention to the font size and its corresponding product increases. The similar is true for the products with red colour price signage as against the regular black price signage. A higher wavelength of the red colour causes it to be perceived as better and more attention is diverted to the corresponding product. Colour psychology and a deeper understanding of colour wavelengths can be used to make an efficient marketing strategy.

Product placement on shelves is an important consideration and can be used by the marketer to increase sales of the target product. Central products receive the most attention and are purchased the most because the extremes are eliminated from line-of-sight when placed on a store's shelves.

People prefer to purchase the smallest product quantity as it is the most value for money of all the three options. In price only situations, medium and large products are purchased due to cognitive dissonance cued through existence of a positive price quality and quantity relationship. This suggests that more rational choices reduce purchase regret.

CONCLUSION

Predominantly, the effects of decoy are noted in the research and the pervasiveness of the same ranges from brick and mortar stores to virtual markets and a vast variety of products. Using the decoy in conjunction with marketing psychology and pricing, can lead to drastic increases in organisational sales and profits. With dynamic strategies and adaptive tactics, marketers can proliferate the target market and reach the potential through increase in market share, profit and returns.

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