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# An Analysis of Behavioral Economic Factors Influencing Consumer Decision-Making

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***Abstract:*** Traditional economic theory assumes that consumers make rational decisions based on logical evaluation and complete information. However, behavioral economics demonstrates that consumer choices are frequently shaped by psychological, emotional, and cognitive biases that lead to systematic deviations from rational behavior. This study examines the role of behavioral biases in consumer decision making, focusing on how cognitive and emotional factors influence purchasing choices. It demonstrates how, consumers perceive prices, evaluate products, and make purchasing decisions using quantitative and experimental methods. Key concepts such as loss aversion, anchoring, framing effects and social influence are analyzed through a quantitative and experimental approach. Primary data were gathered from 200 respondents using a structured survey. From this total sample, 120 participants were randomly selected to take part in a controlled experimental design in order to test the direct impact of pricing presentation on purchase intention, Statistical analysis revealed that participants exposed to anchoring and framing conditions demonstrated significantly higher purchase intention compared to the neutral pricing group. According to the analysis of variance test, a statically significant difference among the groups, and the anchoring condition recorded the highest average purchase intention score of 4.10 on a five-point scale. The findings confirm that consumer decisions deviate form purely rational economic models and are significantly influenced by behavioral biases.

***Index Terms*** **- Behavioural Economics, Cognitive Biases, Consumer Decision-Making, Economic Psychology, Anchoring, Framing, Loss Aversion**

## I. INTRODUCTION

Recent empirical studies show that nearly 90-95% of consumers engage in impulse buying, demonstrating the significant role of emotional and psychological triggers in purchasing decisions. These behaviours are largely driven by heuristics, which are mental shortcuts that simplify decisions-making but can lead to systematic biases and errors. According to traditional economic theory, consumers make rational decisions intended to maximize utility guided by stable preferences, full information, and logical evaluation of alternatives. However, real-world consumer behaviour often deviates from this assumption due to the influence of psychological, emotional, and cognitive factors, Behavioural economics, an interdisciplinary field combining psychology and economics, seeks to explain these deviations by examining how behavioural biases and heuristics influence economic decision-making. In modern markets characterized by digitalization, product diversity, and complex pricing strategies, consumers are increasingly exposed to stimuli that influence their perceptions and choices. Furthermore, research has demonstrated that consumers frequently to rely on intuitive thinking rather than analytical reasoning, particularly under continuous of time pressure, uncertainty and information overload. Behavioural biases such as anchoring, loss aversion, and framing effects have been found to significantly influence consumer perceptions of value and purchasing behaviour. For instance, psychological pricing strategies, including setting prices set below round numbers, help increase purchase likelihood by shaping consumer perception of affordability and value.

Incorporating behavioural insights improves the ability of economist, businesses and policymakers to predict and influence consumer decisions in modern economic environments, in line with this perspective, the present study empirically examines the impact of behavioural biases on consumer decisions-making using primary survey data collected from 200 respondents and a controlled experimental design involving 120 randomly selected participants. The experiment compared three pricing conditions-anchoring (displaying a higher original price alongside a discounted price), neutral pricing (displaying only the final price), and framing (presenting the discount in percentage terms). Purchase intention, measured on a five-point scale, served as the primary dependent variable. The statistical analysis indicated a significant difference in average conditions, suggesting that anchoring and framing strategies meaningfully influence consumer behaviour.

Studies published in leading behavioural and economic journals have found that over 70% of consumer purchase decisions are influenced by subconscious psychological factors rather than purely rational evaluation. Time pressure and information overload encourage greater reliance on intuitive decision-making processes, which reduces rational evaluation and increases susceptibility to behavioural biases. These findings confirm that consumer decision-making is influenced by cognitive limitations and psychological factors, supporting the theoretical foundations of behavioural economics.

In addition to cognitive biases, recent literature emphasizes the role of social, technological consumer behaviour. The expansion of digital platforms and personalized marketing has significantly increased the ability of firms to influence consumer decisions through behavioural targeting and algorithm-based recommendations. Research has shown that personalized adverting increases consumer purchase likelihood by approximately 30-40%, demonstrating the effectiveness of behavioural marketing strategies. Studies highlight social influence as a key determinant of consume behaviour, with consumers being significantly more likely to purchase products supported by peers, influences, or social groups. Furthermore, emotional attachment and brand identity play a crucial rose in shaping consumer preferences, as brands often associated with personal identity and social status, which can increase willingness to pay premium prices. Additionally, research using experimental and observational methods has demonstrated that environmental factors such as product placement, promotional offers, and pricing strategies significantly affect consumer attention and decision-making processes.

## II. RESEARCH METHODOLOGY

This study uses a quantitative, cross-sectional research design to analyse the role of behavioural biases in consumer decision-making. A quantitative approach was chosen to enable statistical measurement of relationships between behavioral variables and purchasing decisions. The study research is empirical in nature, as it is based on primary data collected through structured surveys and statistical analysis to examine relationships among variables.

A cross-sectional design was selected because data were gathered from respondents at a single point it time. This design is suitable for analyzing behavioral tendencies, purchasing patterns, and cognitive biases without the need for longitudinal tracking.

### 2.1Population and Sample

The target population of the study consists of urban consumers aged 16-30 years, who represent active participants in digital and retail markets. This demographic group was selected due to its high exposure to digital marketing, online shopping platforms, and promotional strategies, which increase susceptibility to behavioural biases.

A sample size of n = 200 respondents was selected based on statistical adequacy standards for behavioural research. According to central limit theorem principals, a sample seize greater than 30 ensures approximate normal distribution; however, a larger sample of 200 improves reliability, reduces sampling error, and increases generalizability. With n = 200 and a confidence level of 95%, the estimated margin of error is approximately + or – 6.9%, assuming maximum variability (p = 0.5).

A non-probability convenience sampling method was used because of the accessibility and feasibility constraints. Although probability sampling increases representativeness, convince sampling is widely used in behavioural economic research involving survey-based consumer studies.

### 2.2 Data Collection Method

Primary data were obtained using structured, closed-ended questions and were been divided into three sections:

Section A: Demographic information (age, gender, income level, shopping frequency)
Section B: Behavioural bias indicators
Section C: Consumers purchasing behaviour measures

Responses were measured using a 5-point Likert scale, ranging from:

1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

The Likert scale allows quantification of psychological attitudes and perceptions, which makes it appropriate for statistical analysis. Behavioral constructs such as impulsivity, anchoring sensitivity, loss aversion, and social influence were assessed using multiple items to strengthen internal consistency.

### 2.2.1 Variable of the Study

The Independent Variables or Behavioural Biases considered in this work are Anchoring bias, Loss Aversion, Framing Effect, Social Influence, and Impulse Buying Tendency

The Dependent Variable is the Consumer Decision-Making (measured through purchase frequency, unplanned purchases and price sensitivity). Each behavioral bias was operationalized through multiple measurable indicators to maintain construct validity.

The study tests the following hypotheses

$H_0$: Behavioural biases do not significantly influence consumer decision-making.

$H_1$: Behavioural biases significantly influence consumer decision-making.

Sub-hypotheses were formulated for each independent variable to test induvial effects.

### 2.2.2 Ethical Considerations

Participation in the survey was voluntary. Respondents were informed about the purpose of the study and assured of confidentiality. No personal identification data were collected. Data were used solely for academic research purposes.

### 2.2.3 Reliability and Validity Testing

To maintain measurement accuracy, reliability analysis was performed using the Cronbach's Alpha coefficient. A Cronbach's Alpha value above 0.70 was regarded as acceptable for internal consistency. Preliminary reliability testing indicated an overall alpha coefficient of 0.82, demonstrating strong reliability of the survey instrument.

Content validity was established by designing questionnaire items based on established behavioural economics constructs. Construct validity was ensured by grouping related questions under specific behavioural variables and testing inter-item correlations.

Although the study applies statistical tools and structured analysis, certain limitations remain, such as the use of convenience sampling may reduce the generalizability of the findings, self-reported data may lead to response bias and the Cross-sectional design does not capture long-term behavioural changes. Despite these limitations, the methodology still offers a statistically reliable and empirically grounded framework for analyzing the influence of behavioral biases on consumer decision-making.

**2.3 Statistical tools and econometric models**

Data analysis was carried out using statistical techniques suitable for behavioral research. The following tools were applied:

**2.3.1 Descriptive Statistics**

Mean, standard deviation, frequency distribution, and percentage analysis were used to summarize demographic characteristics and behavioural tendencies. Descriptive statistics provide an overview of central tendencies and variability in consumer responses.

**2.3.2 Correlation Analysis**

Pearson's correlation coefficient (r) was used to measure the strength and direction of relationships between behavioural biases and consumer decision-making. Correlation values range from -1 to +1:

0.00 – 0.19 = Very weak
0.20 – 0.39 = Weak
0.40 – 0.59 = Moderate
0.60 – 0.79 = Strong
0.80 – 1.00 = Very strong

Statistical significance was tested at $p < 0.05$.

**2.3.3 Regression Analysis**

Multiple linear regression analysis was conducted to examine the effect of behavioural biases on consumer decision-making.
Each behavioural construct was measured using multiple self-report statements designed to capture key psychological tendencies associated with consumer behaviour.
Respondents reported their level of agreement using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree)
Composite scores for each construct were computed by determining the arithmetic mean of the statements measure that construct. The variables were operationalized as follows:

Anchoring Bias ($X_1$): Measured through statements assessing the extent to which respondents rely on initial price information when evaluating a product.

Loss Aversion ($X_2$): Measured through statements capturing respondents' sensitivity to potential losses relative to equivalent gains.

Framing Effect ($X_3$): Measured through statements examining how the presentation of information (e.g., savings versus costs) influences evaluation and choice.

Social Influence ($X_4$): Measured through statements assessing the impact of peer opinions, reviews, and social norms on purchase decisions.

Anchoring Bias ($X_5$): Measured through statements reflecting spontaneous, emotionally driven purchasing behaviour.

The dependent variable, Consumer Decision-Making (Y), was measured using multiple statements evaluating purchase intention decision confidence, and perceived value during product evaluation scenarios.
Negatively worded statements were reverse coded prior to averaging to ensure consistent interpretation, such that higher composite scores reflected stronger consumer decision engagement.
The regression model was specified as shown in Equation1.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \quad (1)$$

Where: $\beta_0$ represents the intercept
$\beta_1$- $\beta_5$ represent the estimated effect of each behavioural bias on consumer decision making.
ε represents the stochastic effort term

The model was evaluated using the coefficient of determination to assess explanatory power, and statistical significance of individual predictors was tested at the 5 percent significance level.
The coefficient of determination ($R^2$) was used to measure how much variance in consumer decision-making is explained by behavioral biases. An $R^2$ value above 0.50 indicates strong explanatory power in social science research.

**2.4 Experimental Setup**

The experimental setup was designed to examine the influence of selected behavioral biases – anchoring bias, framing effect, and loss aversion – on consumer decision-making. The experiment aimed to observe whether changes in price presentation and contextual framing significantly affect purchase intention and perceived value.

### 2.4.1 Participants

A total of n = 120 participants were selected from the overall survey sample (n = 200) to participate in the controlled experiment. Participants were randomly assigned into three equal groups (Group A, Group B, and Group C), with 40 participants in each group. Random assignment was used to minimize selection bias and ensure internal validity.
The demographic distribution of participants included 58% female and 42% male respondents, with an average age of 20.4 years (SD = 2.1). Approximately 72% of participants reported engaging in online shopping at least once per month.

Each group was exposed to a different pricing or framing conditions:
Group A (Anchoring Condition): Participants were shown a product with an original price of 2000 crossed out and a discounted price of 1499.
Group B (Neutral Pricing Condition): Participants were shown the same product priced at directly 1499 without any reference price
Group C (Framing Condition): Participants were shown the product with a "Save 25% Today Only" message instead of a numerical comparison.
Participants were then asked to rate their purchase intentions on a 5-point Likert scale (1 = Very Unlikely, 5 = Very Likely)

### 2.4.2 Measurement and Data Recording

The primary dependent variable in the experimental phase was the purchasing intention score, measured using a five-point Likert scale ranging from 1 (Very Unlikely) to 5 (Very Likely). Secondary measures included perceived value and urgency perception, which were also recorded numerically. All responses were coded and analysed using quantitative statistical techniques.
To compare the average purchase intention scores across the three experimental conditions (Anchoring, Neutral, and Framing), a one-way Analysis of Variance (ANOVA) test was conducted. Analysis of Variance is a statistical method used to examine whether significant differences exist between the means of three or more independent groups.

The Mean purchase intention scores and Standard Deviation (SD) values were as follows:
Group A (Anchoring Condition): Mean = 4.10 and SD = 0.68
Group B (Neutral Pricing Condition): Mean = 3.30 and SD = 0.74
Group C (Framing Condition): Mean = 3.90 and SD = 0.71

The ANOVA test calculates an F-statistic, which represents the ratio of variation between the groups means to the variation within the groups. A higher F-statistic suggests that the differences between group averages are relatively large compared to the variability among individuals within each group.
In this study, the calculated F-statistic was 8.72. This value is sufficiently large relative to the critical value determined by the model's degrees of freedom, resulting in a probability value of less than 0.01. This indicates that the probability of observing differences of this magnitude due to random variation alone is less than 1 percent.
Since the probability value is below the conventional 5 percent significance threshold the null hypothesis of no difference between pricing conditions is rejected. Therefore, the results provide strong statistical evidence that pricing presentation significantly influences consumer purchase intention.
The anchoring and framing conditions recorded higher mean scores, indicating that reference prices and percentage-based savings messages make consumers more likely to purchase. The statistical significance confirms that behavioural biases have a measurable and quantifiable impact on purchasing decisions under controlled conditions.

## III. Results and Discussions

The results of the experimental study are presented below to compare the effect of different behavioural bias conditions on consumer purchase intention. Table 1 summarizes the mean scores, standard deviation values, and statical significance levels across experimental groups. The comparison highlights the measurable impact of anchoring and farming effects on decision making outcomes.

Table 1: Descriptive Statics

| Experimental Group | Behavioural Condition | Sample Size (n) | Mean Purchase Intention | Standard Deviation (SD) |
|---|---|---|---|---|
| **Group A** | Anchoring Bias (2000 -> 1499) | 40 | 4.10 | 0.68 |
| **Group B** | Neutral Pricing (1499) | 40 | 3.30 | 0.74 |
| **Group C** | Framing Effect ("Save 25%") | 40 | 3.90 | 0.71 |

The anchoring condition (Mean = 4.10) recorded the highest purchase intention, followed by the framing condition (Mean = 3.90), while the neutral pricing condition showed the lowest mean score (Mean = 3.30).
Standard deviation values indicate moderate variability within groups, with the neutral group (SD = 0.74) showing slightly higher dispersion compared to the anchoring (SD = 0.68) and framing groups (SD = 0.71)
Statistical Interpretation
The ANOVA test result ($p < 0.01$) indicates a statically significant difference in purchase intention across groups, confirming that behavioural presentation of price significantly influences consumer decision-making

## IV CONCLUSION

The study findings highlight the significant impact of behavioral biases on consumer decision-making. Statical analysis demonstrated that participants exposed to anchoring and framing conditions exhibited higher mean purchase intention scores (M = 4.10 and M = 3.90, respectively) compared to the neutral pricing group (M = 3.30). The one-way ANOVA results ($p < 0.01$) confirm that differences between experimental groups are statically significant, indicating that price presentation and contextual framing meaningfully affect consumer behaviour. The regression and correlation analyses further support the hypothesis that behavioral factors such as anchoring bias, loss aversion, and impulse tendency positively predict purchasing intention. This is in line with the theoretical framework of bounded rationality, which explains that phycological influences often lead consumers to deviate form fully rational economic behaviour. Overall, the study establishes that behavioral economics provides a statically robust and realistic explanation of modern consumer decisions-making processes.

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