



A Study on Analyzing the Impact of Demographics and Discount Strategies on Consumer Buying Behavior and Impulse Purchases in Online Shopping

Sowmya Shree D

Kristu Jayanti College, (Autonomous), Department of Commerce(PG),Bengaluru,Karnataka
Email: 24mcfa36@kristujayanti.com

ABSTRACT

Online shopping has made price strategies – especially discounts – more crucial in getting and keeping customers. The purpose of this study is to analyze the impact of discounts on online purchasing decisions. The study addresses a number of important topics, including how age, gender, and income level impact discount buying behavior and the extent to which discounts lead to impulsive purchases and the ways in which various discount techniques increase revenue and keep customers. A standardized questionnaire was completed by 71 individuals, using statistical procedures including independent samples t-tests, descriptive analysis, ANOVA, Chi-Square test and correlation analysis were used to analyze the data. Descriptive statistics showed the respondents' overall buying behavior and demographic distribution. ANOVA checked for differences in discount importance across age groups, independent samples t-test checked if gender affects how important discounts are. Correlation analysis looked into the relationship between frequency of shopping and importance of discounts in buying decisions and Chi-Square test checked the relationship between gender and discount perception. Because the statistical tests produced p-values greater than 0.05, there were no significant differences, which means age and gender have no effect on how consumers perceive discounts. Furthermore, the correlation study found no correlation between the discount relevance and the frequency of shopping, so discounts are attractive to customers regardless of their shopping habits. But according to the study discounts are very important in influencing consumer decisions especially when it comes to impulsive buying for consumers. It was found that the best discount tactics to drive sales and build customer loyalty are percentage discounts, cashback and Buy One Get One Free (BOGO) promotions. And a large number of customers said they wait for sales before they buy, so online retailers should strategically plan their discounts.

Keywords: Online shopping, consumer purchasing behavior, discounts, pricing strategies, impulse buying, e-commerce.

1. Introduction

In the digital era online shopping has completely changed how people make selections about what to buy. Online buying has fundamentally altered how consumers choose what to purchase in modern times. Online shopping's variety, affordability, and ease of use have completely changed how customers buy goods and services. E-commerce platforms are now a crucial part of modern retail due to the development of digital technology and the expansion of internet connectivity. Customers can explore and compare products from different sellers, read reviews, and complete transactions all from the convenience of their homes. Having a variety of payment options, fast delivery, and personalized options has further enhanced the online shopping experience. The usage of discounts and promotional offers is one of the main elements influencing online shopping behavior. A variety of marketing strategies are being used by businesses to attract and retain customers as e-commerce platforms become more competitive. As e-commerce continues to grow, firms now need to understand consumer behavior and the impact of discount strategies.

Considering discounts have an impact on how customers view value, need, and affordability, these are an essential part of such strategies. Customers are encouraged to make quick choices when discounts are offered, which frequently leads to impulsive purchases. This holds relevant no matter whether they are presented as temporary offers, seasonal sales, or flash reductions. Understanding how discounts affect consumer purchasing behavior is crucial for researchers and businesses. Customers are impacted by psychological triggers linked to discounts, such as perceived savings, pricing justice, and FOMO, in addition to being drawn to lower costs. By looking at this study we can understand whether discounts play a significant psychological factor in customer purchasing decisions. The findings will contribute to the growing corpus of study on consumer behavior in e-commerce and have practical implications for retailers seeking to enhance their marketing strategies and pricing.

2. Literature Review

A.J.Taslim Arif, Dr. J. Mohamed Ali (2023)

Impact Of Price Discount Strategy On Impulse Behaviour Of Online Customers is a research on consumer behavior highlights the significant role of demographic factors such as age, income, and education in shaping responses to discounts and promotional strategies. Studies suggest that younger consumers, particularly those aged 21–35, exhibit higher engagement with online platforms and impulsive buying behavior when exposed to discounts. Prior findings indicate that product promotions, sales discounts, and digital marketing significantly impact purchasing decisions, with different age groups responding uniquely to these strategies. Structural Equation Modeling (SEM) studies further validate that well-fitted models effectively explain consumer behavior, supporting the idea that tailored discount strategies enhance customer engagement and sales.

Zhao et al (2019)

This psychological dimension of discounting stems from consumer biases in perception and decision-making. According to studies, perceived—being that consumers feel they are getting a good bargain—play a key role in determining purchase behavior. Flash sales and limited-time promotions bring about the psychology of scarcity and urgency, triggering impulse purchasing because consumers worry that they might miss a great deal (Zhao et al., 2019). This is attributed to loss aversion, wherein consumers are more focused on preventing losses than in making logical buying decisions. Secondly, consumers usually find greater discounts as more appealing, even overlooking the real value or need of the product at times. This shows how much discounting strategy influences consumer mentality and buying savings patterns.

Anand Kathir and Denis Amirtharaj (2023)

This research highlights that discount effectiveness depends on the product category. Discounts on essential goods drive more conversions, while discounts on luxury items have a lesser effect

Mishra, et al. (2024).

This research explores the significant impact of online sales promotions, such as discounts and coupons, on consumer behavior in India's e-commerce sector. The study highlights that promotional tools positively influence purchasing decisions, especially in the apparel industry.

3. Objectives

- . To understand how discounts influence consumer buying decisions in online shopping.
- . To examine the link between discount offers and impulse buying tendencies.
- . To evaluate the impact of demographics (age, gender, income level) on discount-driven buying behavior.

4. Research Methodology

This study follows a quantitative, survey-based research design to analyze consumer attitudes toward discounts.

Data was collected from primary and secondary sources to cover all aspects of how discounts affect customer behavior. Online survey was conducted and the primary data was collected from 70 participants. The study aimed to get information on consumer demographics, buying habits and opinions on online shopping discounts. Responses were collected through circulating questionnaire which enabled statistical analysis and hypothesis testing.

The survey consists of closed-ended questions covering: This research aims at different factors that impact purchasing behaviour when it comes to online discounts. Demographics like age, gender, income and how often you shop affects how you perceive and respond to discounts. Consumer perception plays a big role too, as trust, urgency and deal attractiveness determines if you see the discounts as real savings or marketing tricks. The study also looks at impulsive buying behaviour, do discounts make you buy in urge. And lastly, it looks at preferred discount types like percentage-based discounts, cashback, free shipping and Buy One Get One Free (BOGO) to see which ones work best to drive online sales.

4.1 Statistical Tools Used for Analysis of Data

To examine the impact of discounts on online consumer purchasing behavior, various statistical tools were used. The following tests were conducted to analyze the data:

Purpose	Statistical Test
Summarize respondent demographics and online shopping behavior	Descriptive Statistics
Compare whether discount importance differs between males and females	Independent Samples t-Test
Compare discount importance across different age groups	ANOVA (Tukey HSD Post Hoc Test)
Analyzes the association between gender and discount importance	Chi-Square Test
Assess the relationship between shopping frequency and discount importance	Correlation Analysis

4.2 Results and Discussion

The study surveyed a total of 71 respondents, and their demographic distribution is presented below. These statistics provide insights into the characteristics of the sample population, helping to contextualize their shopping behaviors and discount-driven purchasing tendencies.

Table 1: Descriptive Statistics for Demographics

Variable	Categories	Frequency (n)	Percentage (%)
Gender	Male	32	45.1%
	Female	38	53.5%
	Other	1	1.4%
Age Group	Below 18	2	2.8%
	18-21	28	39.4%
	22-25	29	40.8%
	Above 25	12	16.9%
Occupation	Student	42	59.2%
	Employed	23	32.4%
	Pensioners	1	1.4%
	Housewife	1	1.4%
	Freelance	1	1.4%
	Self-employed	3	4.2%
Average Online Shopping Budget	Less than 1000	36	50.7%
	1000 - 2000	26	36.6%
	More than 3000	9	12.7%

In the table 1, the gender distribution among respondents shows that 53.5% were female, while 45.1% were male. Additionally, 1.4% identified as "Other". The higher proportion of female respondents suggests that women are slightly more engaged in online shopping within this sample. This could indicate that women are more inclined to seek discounts or engage in price comparisons before making online purchases. Understanding gender differences in discount-driven shopping behavior is crucial for tailoring marketing strategies, as previous studies suggest that women may be more responsive to promotional offers than men.

The majority of respondents fell within the 22-25 age group (40.8%), closely followed by 18-21-year-olds (39.4%). A smaller percentage, 16.9%, belonged to the above 25 category, while the below 18 age group had the least representation (2.8%). This distribution indicates that online shopping is predominantly driven by young consumers, particularly those aged 18-25. Younger shoppers are more digitally savvy and actively engage with online platforms, making them a key target audience for e-commerce businesses. Furthermore, this age group is often budget-conscious, which could explain a heightened sensitivity to discounts, deals, and promotional offers.

A significant portion of the respondents were students (59.2%), making them the dominant category. The second-largest group consisted of employed individuals (32.4%), while other occupational groups, such as pensioners (1.4%), housewives (1.4%), freelancers (1.4%), and self-employed individuals (4.2%), had relatively lower representation. The dominance of students in the sample suggests that online shopping habits among younger demographics are strongly influenced by their financial constraints, making them more dependent on discounts and promotional campaigns. Meanwhile, employed individuals, who have a more stable income, may exhibit different purchasing behaviors, potentially prioritizing convenience over discounts. These variations across occupational categories highlight the importance of targeted discount strategies.

When asked about their average online shopping budget per purchase, 50.7% of respondents reported spending less than 1000, while 36.6% fell within the 1000 - 2000 range. A smaller segment, 12.7%, had an online shopping budget exceeding 3000. The fact that over half of the respondents have a budget below 1000 indicates that affordability is a key factor in their purchasing decisions. This reinforces the idea that discount-driven strategies significantly influence consumer behavior, as lower-budget shoppers are more likely to seek price reductions to maximize their savings. The relatively small proportion of high-budget shoppers suggests that premium pricing strategies may not be as effective for a majority of consumers in this sample, and instead, promotional offers such as percentage-based discounts, cashback offers, and buy-one-get-one-free (BOGO) deals may have a stronger impact.

To examine whether gender influences how important consumers perceive discounts when making online purchases, an Independent Samples t-Test was conducted. The test compared the mean responses between male and female respondents regarding the significance they attribute to discounts.

Table 2: Group Statistics

Gender	N	Mean	Std. Deviation	Std. Mean
Male (1)	32	1.81	0.644	0.114
Female (2)	38	2.05	0.613	0.099

Table 3: Independent Samples t-Test Results

Levene's Test	t-Test for Equality of Means
F = 2.081, p = 0.154	t = -1.595, df = 68, p = 0.115
Mean Difference = -0.240	95% Confidence Interval: (-0.541, 0.060)

The results from table 2 and 3 are that, Levene's Test for Equality of Variances indicate that the assumption of equal variances is met ($p = 0.154$), meaning that the standard t-test results can be used for interpretation. The t-test for equality of means reveals that the difference in discount importance between males and females is not statistically significant ($t = -1.595$, $p = 0.115$). Since the p-value (0.115) is greater than the conventional significance level (0.05), we fail to reject the null hypothesis.

This implies that there is no significant difference between how males and females perceive the importance of discounts in online shopping. While the mean score suggests that female respondents ($M = 2.05$) consider discounts slightly more important than males ($M = 1.81$), this difference is not strong enough to be statistically meaningful. These findings indicate that discount-driven purchasing behavior is not significantly influenced by gender in this sample. This aligns with prior research suggesting that while men and women may differ in their shopping preferences and product categories, their overall responsiveness to discounts remains comparable. However, marketers should still consider tailoring discount strategies based on gender preferences in specific product categories rather than assuming a universal gender-based difference in discount sensitivity.

A one-way ANOVA test was conducted to assess whether different age groups perceive the importance of discounts in online shopping differently. The results of the Tukey HSD post hoc test are summarized in Table 4, which compares the mean differences between age groups along with their corresponding significance values (p-values).

Table 4: Tukey HSD Multiple Comparisons

Age Group (I)	Age Group (J)	Mean Difference (I-J)	Sig. (p-value)
Below 18	18-21	0.143	0.989
Below 18	22-25	0.138	0.990
Below 18	Above 25	-0.333	0.894
18-21	22-25	-0.005	1.000
18-21	Above 25	-0.476	0.124
22-25	Above 25	-0.471	0.127

From the table 4, the ANOVA results suggest that there is no statistically significant difference in how different age groups perceive the importance of discounts when shopping online. The p-values for all pairwise comparisons are greater than 0.05, indicating that the differences between age groups are not significant at the 95% confidence level.

Although slight variations exist in mean discount importance scores across age groups, they are not large enough to indicate a meaningful distinction. For example, respondents aged above 25 rated discounts slightly more important compared to those in younger age groups, but the difference is not statistically significant ($p = 0.124$ when compared to 18-21 and $p = 0.127$ when compared to 22-25). Similarly, comparisons between younger age groups, such as Below 18 vs. 18-21 and 18-21 vs. 22-25, also yield p-values close to 1.000, reinforcing that discount importance is perceived similarly across age groups. These findings suggest that age is not a strong determinant of discount-driven purchasing behavior. While younger consumers may be expected to be more price-sensitive, the data does not support a statistically significant variation in discount importance across age groups. This indicates that discount strategies may be effective across all age groups, rather than needing heavy customization based on age demographics.

Table 5: Chi-Square Test Results

Test	Value	df	p-value
Pearson Chi-Square	4.690	6	0.584
Likelihood Ratio	5.370	6	0.497

From the Table 5, Pearson Chi-Square value is 4.690 with a p-value of 0.584, which is greater than 0.05. This indicates that there is no statistically significant relationship between gender and the perceived importance of discounts. In other words, the data does not provide enough evidence to suggest that males and females (or other gender identities) perceive the importance of discounts differently when shopping online. Although there may be slight variations in how different genders prioritize discounts, these differences are not strong enough to be statistically significant. The likelihood ratio test also confirms this result, with a p-value of 0.497, further reinforcing that gender does not play a crucial role in determining discount importance. This finding suggests that discount strategies in online shopping may appeal equally to all genders, meaning businesses do not necessarily need to tailor their discount marketing strategies based on gender demographics. Instead, retailers can focus on other influential factors, such as consumer shopping frequency, preferred product categories, and trust in online discounts, to create more effective discount-based promotions.

A correlation analysis was conducted to examine the relationship between shopping frequency and the perceived importance of discounts in online shopping. The Pearson correlation coefficient (r) measures the strength and direction of the relationship between these two variables, with values ranging from -1 to +1. A positive correlation indicates that as one variable increases, the other also tends to increase, while a negative correlation suggests the opposite.

Table 6: Correlation Results

Variables	Pearson Correlation (r)	p-value
Shopping Frequency & Discount Importance	0.025	0.839

From the Table 6, Pearson correlation coefficient ($r = 0.025$) suggests a very weak and negligible positive relationship between how often consumers shop online and how important they perceive discounts to be. Additionally, the p-value of 0.839 is much greater than 0.05, indicating that the correlation is not statistically significant. This means that shopping frequency does not have a meaningful impact on how important discounts are to consumers. Whether someone shops online occasionally, monthly, weekly, or daily, their perception of discounts remains largely unaffected. This finding implies that discount-driven purchasing behavior is not necessarily influenced by how frequently consumers engage in online shopping, suggesting that other factors—such as product type, personal financial constraints, or trust in discounts—might play a more critical role in shaping discount importance. From a business perspective, this result indicates that offering discounts may not necessarily increase shopping frequency, as consumers who shop less frequently do not prioritize discounts any differently than those who shop more often. Instead, businesses should focus on targeting discount strategies based on consumer preferences, brand loyalty, and product categories rather than simply assuming that frequent shoppers are more discount-sensitive.

Findings

- The study found no significant difference in how different genders perceive the importance of discounts ($p = 0.115$).
- ANOVA results showed no statistically significant difference among age groups regarding discount importance (p -values > 0.05).
- The Chi-Square test indicated no significant association between gender and how important they consider discounts ($p = 0.584$).
- The correlation analysis showed no strong relationship between shopping frequency and the importance of discounts ($r = 0.025$, $p = 0.839$).
- Respondents showed mixed trust in discounts, with some perceiving them as beneficial while others viewed them as marketing tactics.
- Percentage-based discounts, cashback, and Buy One Get One Free (BOGO) were found to be the most effective in influencing consumer purchases.
- Many respondents admitted purchasing products they did not initially need due to discounts, highlighting a link between discounts and impulse buying.
- Discounts play a role in brand loyalty, as many respondents indicated they are more likely to repurchase from brands offering frequent discounts.
- Social media ads and e-commerce platforms were the most common sources where consumers found information about discounts.
- Limited-time discounts created a sense of urgency, influencing consumers to make quicker purchasing decisions.

Conclusion

This study explored the impact of discounts on consumer purchasing behavior in online shopping, with a focus on demographic factors, discount influence, impulse buying tendencies, and effective discount strategies. The findings indicate that gender and age do not significantly influence how consumers perceive discount importance. Additionally, there is no strong correlation between shopping frequency and the significance of discounts, suggesting that discounts appeal to a broad consumer base regardless of demographics.

The study also highlights that discounts, particularly percentage-based discounts, cashback offers, and Buy One Get One Free (BOGO) deals, play a crucial role in influencing consumer purchasing decisions. Many consumers admitted to purchasing products they did not initially plan to buy due to attractive discount offers, confirming a strong link between discounts and impulse buying behavior. Furthermore, the study reveals that discounts contribute to brand loyalty, as consumers are more likely to return to brands that consistently offer discounts.

While discounts effectively drive consumer engagement and sales, the findings suggest that businesses must carefully design their discount strategies to maintain trust and long-term customer retention. Transparency in discount offers and ensuring that discounts do not diminish product value perception are essential for sustaining consumer confidence. Overall, this study reinforces the importance of discounts as a marketing tool while emphasizing the need for strategic implementation to maximize consumer satisfaction and business profitability.

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