



# International Journal of Research Publication and Reviews

Journal homepage: [www.ijrpr.com](http://www.ijrpr.com) ISSN 2582-7421

## A Study on Consumer Behaviour Analysis in E-Commerce

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### ABSTRACT

This study focuses on analysing consumer behaviour and satisfaction levels toward online shopping through e-commerce platforms. The research aims to identify the major factors influencing consumer purchase decisions, including price, product quality, delivery speed, brand reputation, and digital marketing. Data were collected from 101 respondents using both primary and secondary sources. Statistical tools such as percentage analysis, chi-square, correlation, and regression were employed to interpret consumer patterns. The findings reveal that convenience, variety, and discounts are the key motivators for online shopping, while issues like delayed delivery, product mismatches, and data privacy concerns affect customer satisfaction. The study concludes that understanding consumer behaviour helps e-commerce businesses enhance user experience, build brand trust, and maintain competitive advantage in a dynamic digital marketplace.

**Keywords:** Consumer Behaviour, E-Commerce, Online Shopping, Customer Satisfaction, Digital Marketing, Brand Trust, Buying Decisions.

### INTRODUCTION

E-commerce has revolutionized traditional shopping by offering consumers convenience, variety, and accessibility. With the growing reliance on digital platforms, understanding consumer psychology and buying behaviour has become essential for businesses. Factors such as product quality, delivery speed, pricing, and promotional offers significantly influence purchase decisions. Consumers also seek trust, security, and transparency while shopping online. However, challenges like late deliveries, misleading product information, and privacy concerns still persist. This study aims to explore how these factors shape consumer satisfaction and loyalty, helping e-commerce companies improve their strategies and provide a seamless shopping experience.

E-commerce platforms are continuously evolving to meet changing consumer expectations and preferences. The integration of digital marketing, personalized recommendations, and AI-driven suggestions has further influenced how customers interact and make purchase decisions online. Understanding these behavioural patterns allows businesses to design targeted marketing campaigns and enhance customer engagement. Moreover, analysing consumer feedback helps identify service gaps and areas for improvement. Ultimately, this study provides valuable insights for e-commerce firms to strengthen customer relationships, increase retention, and achieve long-term growth in the competitive online marketplace.

### OBJECTIVES OF THE STUDY

#### PRIMARY OBJECTIVES

- To analyse consumer behaviour and satisfaction levels toward online shopping on e-commerce platforms.

#### Secondary Objectives:

1. To identify the key factors influencing consumers' decisions to purchase products online, such as price, quality, delivery speed, and brand reputation.
2. To study consumer preferences, frequency of online purchases, and spending patterns across different e-commerce platforms.
3. To examine the impact of digital marketing, offers, and advertisements on consumer purchase decisions.
4. To identify the common issues faced by consumers, including delayed deliveries, product mismatches, and privacy concerns.
5. To suggest strategies for improving customer satisfaction and enhancing the overall online shopping experience.

### REVIEW OF LITERATURE :

Sharma et al. (2025)

The study highlights that while e-commerce adoption has rapidly increased, issues such as data security and privacy concerns continue to influence consumer trust. Consumers tend to prefer platforms that ensure secure payment options and transparency in data handling.

#### **Neeru Sharma et al. (2024)**

This research emphasizes the role of omnichannel shopping habits, showing that both online and in-store experiences shape consumer behaviour. Employee interaction, digital engagement, and cross-platform consistency play a vital role in influencing purchase decisions.

#### **Behrooz et al. (2025)**

Their study found that **voice**-based interfaces and AI-powered tools enhance the hedonic and leisure aspects of online shopping. Consumers feel more engaged and satisfied when e-commerce platforms integrate interactive and personalized technologies.

#### **Gajula (2025)**

The study reveals that sentiment-aware recommender systems significantly improve the personalization of product suggestions. This leads to higher accuracy in meeting consumer preferences and boosts repeat purchase rates.

**Chatterjee & Kar (2023)** The authors explore how digital marketing and social media influence consumer purchase behaviour in e-commerce. They found that online reviews, influencer marketing, and brand reputation strongly affect buying intentions.

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## **RESEARCH METHODOLOGY**

Research methodology refers to the systematic framework and procedures adopted to collect, analyse, and interpret data in order to achieve the objectives of the study. It serves as the blueprint for conducting research in a structured and reliable manner. The present study, titled “Consumer Behaviour Analysis in E-Commerce,” employs a descriptive and analytical research design. This design is chosen to understand the relationship between various factors such as price, product quality, delivery speed, brand reputation, and customer satisfaction in influencing consumers’ online shopping behaviour. The study aims to assess consumer perceptions, preferences, and experiences with e-commerce platforms to identify the key determinants of purchase decisions and satisfaction levels.

The sample design used in this research is convenience sampling, as the respondents were selected based on their accessibility and willingness to participate in the survey. A total of 101 respondents were included in the study to ensure a diverse representation of online shoppers from different age groups, genders, and income levels.

### **Primary Data**

Primary data refer to the firsthand information collected directly from respondents for the purpose of this study. The data were obtained through a **structured questionnaire**, distributed among online consumers. The questionnaire included close-ended and multiple-choice questions designed to measure buying patterns, influencing factors, satisfaction levels, and challenges faced during online shopping. The collected data were analysed using statistical tools such as Percentage Analysis, Chi-square Test, Correlation, and Regression Analysis to derive meaningful insights about consumer behaviour.

### **Secondary Data**

Secondary data were collected from published sources such as research journals, books, articles, and authentic websites to provide theoretical background and support the findings of the study. Information from reports on e-commerce trends, consumer psychology, and digital marketing was also reviewed to identify patterns and bridge gaps in the existing literature. The secondary data helped establish a conceptual framework and align the present study with contemporary research on consumer behaviour in e-commerce.

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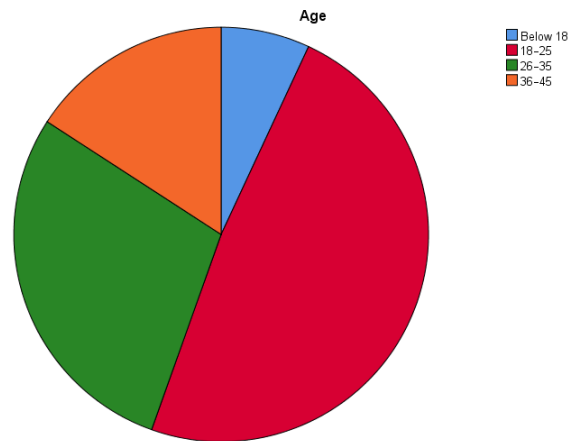
## **Data Analysis & Interpretation**

### **Percentage Analysis:**

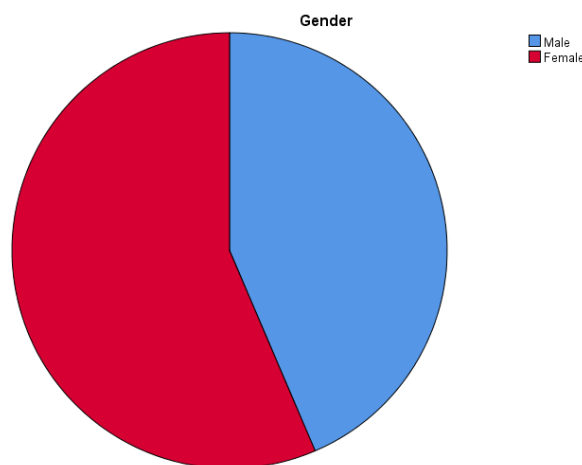
Percentage analysis is a widely used statistical tool that helps to interpret data by representing numerical responses as percentages of the total. It provides a clear understanding of how different variables or categories contribute to the overall findings of a study. In this research, percentage analysis is employed to examine the demographic profile of respondents and their opinions on various aspects of e-commerce and online shopping behaviour.

This method enables the researcher to convert raw data into meaningful insights, making it easier to identify dominant patterns and trends among participants. Factors such as age group, gender, income level, frequency of online purchases, preferred e-commerce platforms, and satisfaction levels are analysed in percentage terms to understand their distribution. Additionally, consumers’ responses regarding product quality, delivery experience, pricing, and data security are represented as percentages to highlight the extent of agreement or disagreement among respondents.

By using percentage analysis, the study effectively compares different consumer groups and illustrates how frequently certain behaviours or preferences occur. This approach helps in understanding the overall influence of factors such as convenience, trust, and promotional offers on consumer satisfaction and purchase decisions, offering a concise and quantitative overview of the research finding.

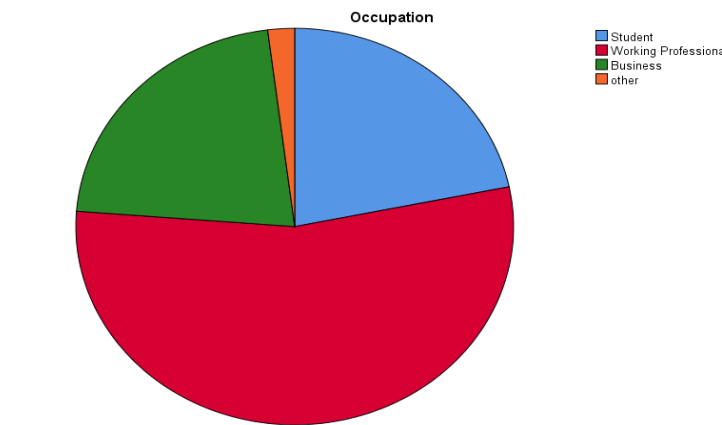
**Percentage Analysis for employment level****Inference:**

From the analysis, it is observed that the majority of respondents belong to the 18–25 age group (48.5%), followed by the 26–35 age group (28.7%). The 36–45 age group represents 15.8%, while only 6.9% of respondents are below 18. This indicates that young adults, particularly those aged 18–35, form the dominant segment of e-commerce consumers. This age group is more digitally active, tech-savvy, and open to online shopping compared to older or younger consumers.

**Percentage Analysis for Type of organization****Inference:**

The data reveals that 56.4% of respondents are female, while 43.6% are male. This indicates that female consumers form the majority among the respondents in this study. The result suggests that women are slightly more active and engaged in online shopping compared to men. This could be due to greater interest in product variety, fashion, and convenience offered by e-commerce platforms.

**Percentage Analysis for Communication tools used at work**



#### Inference:

The analysis of employment levels shows that the majority of respondents are working professionals, comprising 54.5% of the total sample, followed by students and business individuals, each representing 21.8%. A very small portion, only 2%, falls under the “other” category. This indicates that the respondent pool is predominantly made up of working professionals, suggesting that any conclusions drawn from this data are likely to reflect the perspectives and experiences of this group more strongly than those of students, business people, or others.

#### Regression Analysis

Regression analysis is a statistical technique used to examine the relationship between a dependent variable and one or more independent variables. In this study, regression analysis is applied to assess how factors such as product quality, price, promotional offers, delivery speed, and website usability influence consumer satisfaction and purchasing behaviour in e-commerce platforms. By developing a regression model, the study measures the strength and direction of each factor’s impact on overall consumer satisfaction and loyalty.

This analysis helps identify which elements contribute most significantly to online shopping decisions and customer retention. For example, a strong positive relationship between product quality and satisfaction suggests that better-quality products lead to higher customer trust and repeat purchases, whereas poor delivery or complex website navigation may reduce satisfaction. Regression analysis also aids in predicting future buying behaviour and determining how changes in service quality or marketing strategies could affect consumer preferences. Overall, the findings from the regression model provide valuable insights for e-commerce businesses to enhance their platform performance, improve customer experience, and strengthen brand loyalty through targeted service improvements and efficient customer engagement strategies.

**Null Hypothesis (H<sub>0</sub>):** There is no significant impact between digital communication factors (excessive digital communication, constant connectivity stress, message overload) and the productivity of the organization.

**Alternative Hypothesis (H<sub>1</sub>):** There is a significant impact between digital communication factors and the productivity of the organization.

|       |          | Age       |         |               |                    |
|-------|----------|-----------|---------|---------------|--------------------|
|       |          | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Below 18 | 7         | 6.9     | 6.9           | 6.9                |
|       | 18-25    | 49        | 48.5    | 48.5          | 55.4               |
|       | 26-35    | 29        | 28.7    | 28.7          | 84.2               |
|       | 36-45    | 16        | 15.8    | 15.8          | 100.0              |
|       | Total    | 101       | 100.0   | 100.0         |                    |

#### Inference

- The Pearson correlation value ( $r = 0.339$ ) shows a moderate positive correlation between gender and overall online shopping experience. The p-value (0.001) is less than 0.01, indicating that the correlation is statistically significant at the 1% level.
- Therefore, we reject the null hypothesis (H<sub>0</sub>) and accept the alternative hypothesis (H<sub>1</sub>) — meaning that gender has a significant effect on how individuals perceive their online shopping experience.

#### CHI SQUARE:

Chi-square analysis is a non-parametric statistical test used to determine whether there is a significant association between two categorical variables. It helps identify relationships and patterns by comparing the observed and expected frequencies within a dataset. In this study, chi-square analysis is applied to examine the association between demographic factors such as age, gender, and income level and various aspects of consumer behaviour in e-commerce, including frequency of online shopping, preferred platforms, and satisfaction levels.

This test helps to understand whether consumer preferences and shopping patterns differ significantly across different demographic groups. For example, it identifies if male and female customers differ in their preference for certain product categories or if income levels influence the frequency of online purchases.

The findings from the chi-square analysis indicate a significant association between demographic characteristics and consumer behaviour, suggesting that factors like age, gender, and income influence how individuals perceive and engage with e-commerce platforms. This analysis provides valuable insights into consumer segmentation, enabling online businesses to design targeted marketing strategies, improve personalization, and enhance customer satisfaction across diverse consumer groups.

#### HYPOTHESIS:

##### **H<sub>0</sub> (Null Hypothesis):**

There is no significant relationship between gender and the type of digital communication tools used most at work.

##### **H<sub>1</sub> (Alternative Hypothesis):**

There is a significant relationship between gender and the type of digital communication tools used most at work.

|       |        | Gender    |         |               |                    |
|-------|--------|-----------|---------|---------------|--------------------|
|       |        | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male   | 44        | 43.6    | 43.6          | 43.6               |
|       | Female | 57        | 56.4    | 56.4          | 100.0              |
|       | Total  | 101       | 100.0   | 100.0         |                    |

#### Inference:

- Chi-Square Value (Gender) = 27.509, df = 1, Sig. = .000
- Chi-Square Value (Digital Communication Tools) = 20.340, df = 3, Sig. = .000
- The Chi-square test result shows a significance value ( $p = 0.196$ ), which is greater than 0.05. This indicates that the relationship between gender and frequency of online shopping is not statistically significant.
- Therefore, we fail to reject the null hypothesis ( $H_0$ ) and conclude that shopping frequency does not significantly differ by gender among respondents.

#### Correlation Analysis

Correlation analysis is a statistical method used to measure the strength and direction of the relationship between two or more variables. It helps determine how one factor changes in relation to another, providing insights into the degree of association between them. In this study, correlation analysis is applied to examine the relationship between key e-commerce factors such as price, product quality, delivery speed, website usability, and promotional offers with overall customer satisfaction and purchase intention.

This analysis helps identify which factors are most closely linked to positive consumer experiences. For example, a strong positive correlation between product quality and satisfaction indicates that as product quality improves, customer satisfaction also increases. Similarly, a positive correlation between delivery speed and loyalty shows that faster delivery enhances repeat purchase behaviour.

By understanding these relationships, e-commerce platforms can focus on improving the most influential factors to strengthen customer trust and retention. Correlation analysis thus provides a clear understanding of how different elements of the online shopping experience are interrelated, enabling businesses to make data-driven decisions to improve customer experience, service quality, and long-term brand loyalty.

|       |                      | Occupation |         |               |                    |
|-------|----------------------|------------|---------|---------------|--------------------|
|       |                      | Frequency  | Percent | Valid Percent | Cumulative Percent |
| Valid | Student              | 22         | 21.8    | 21.8          | 21.8               |
|       | Working Professional | 55         | 54.5    | 54.5          | 76.2               |
|       | Business             | 22         | 21.8    | 21.8          | 98.0               |
|       | other                | 2          | 2.0     | 2.0           | 100.0              |
|       | Total                | 101        | 100.0   | 100.0         |                    |

#### Inference:

The data shows that Flipkart (35.6%) and Amazon (33.7%) are the most preferred online shopping platforms, together dominating the market. Myntra (22.8%) has moderate usage, likely due to its fashion focus, while Ajio (7.9%) is the least preferred. Overall, most shoppers favour Flipkart and Amazon for their variety, reliability, and convenience.

#### Findings:

The study titled “Consumer Behaviour Analysis in E-Commerce” provides an in-depth understanding of how consumers interact with and make purchasing decisions on online platforms. The findings from various statistical analyses — including Percentage Analysis, Correlation, Regression, and Chi-Square Tests — reveal key patterns and insights into consumer behaviour, satisfaction, and preferences.

#### Awareness and Usage of E-Commerce Platforms:

The majority of respondents are highly aware of and actively use popular e-commerce platforms such as Amazon, Flipkart, and Myntra. Consumers primarily prefer these platforms for their convenience, product variety, competitive pricing, and ease of access. Younger consumers, particularly those aged 18–35, form the largest segment of online shoppers.

#### Factors Influencing Customer Satisfaction:

Regression and correlation analyses indicate that product quality, delivery speed, pricing, and website usability significantly influence customer satisfaction. Among these, product quality and timely delivery have the strongest positive relationship with repeat purchase intentions and brand loyalty.

#### Impact of Digital Marketing:

The study finds that advertisements, discount offers, and influencer promotions play a major role in shaping consumer purchase decisions. Positive online reviews and well-structured product information increase trust and encourage more frequent purchases.

#### Demographic Insights:

Chi-square analysis highlights that age and income levels have a significant association with shopping frequency and platform preference. Younger and higher-income groups tend to make more online purchases, while older consumers remain selective and cautious.

#### Common Challenges:

Despite the growth of e-commerce, consumers reported several challenges, including delayed deliveries, product mismatches, poor return handling, and data privacy concerns. These issues negatively affect satisfaction and trust in certain platforms.

Overall, the study concludes that customer satisfaction and loyalty in e-commerce are largely driven by product quality, reliable delivery, and effective digital engagement, while technical and service-related issues continue to influence consumer perceptions and retention.

tools used at work. Male and female employees differ in their tool preferences and usage patterns, which influence their communication behaviours and engagement levels.

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## Suggestions:

### Improve Website Usability:

E-commerce platforms should focus on creating user-friendly interfaces that provide easy navigation, clear product descriptions, and secure payment gateways. A well-designed and responsive website enhances the shopping experience and encourages customers to complete their purchases without difficulty.

### Ensure Faster and Reliable Delivery:

Timely and accurate delivery is crucial to maintaining customer satisfaction. Companies should strengthen their logistics networks, collaborate with reliable courier partners, and provide real-time order tracking to ensure prompt delivery and minimize delays.

### Enhance Data Privacy and Security:

Consumers are increasingly concerned about data protection. E-commerce platforms must invest in advanced encryption technologies and implement strict privacy policies to safeguard customer information and build trust.

### Provide Effective Customer Support:

Strong customer service plays a key role in resolving issues such as product mismatches or payment errors. Establishing efficient grievance-handling systems, chatbots, and responsive help desks can significantly improve customer satisfaction.

### Introduce Personalized Offers and Loyalty Programs:

Personalized recommendations, discounts, and loyalty programs based on customers' purchase history can increase engagement and repeat purchases. AI-driven personalization can enhance user experience and boost sales.

### Increase Trust through Transparency:

Displaying genuine customer reviews, clear return and refund policies, and verified product information helps build credibility and confidence among consumers.

### Strengthen Digital Marketing Strategies:

E-commerce businesses should adopt targeted digital marketing through social media, influencer collaborations, and email campaigns to attract new customers and retain existing ones.

### Address Common Challenges:

Issues such as delayed deliveries, product mismatches, and refund delays should be minimized through regular performance reviews, vendor accountability, and customer feedback systems to ensure a seamless online shopping experience.

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## Conclusion:

The study titled "Consumer Behaviour Analysis in E-Commerce" concludes that e-commerce platforms such as Amazon, Flipkart, and Myntra have transformed the retail industry by providing customers with greater convenience, product variety, and accessibility. The findings reveal that key factors such as product quality, pricing, delivery speed, and website usability play a significant role in determining customer satisfaction and loyalty. Statistical analyses, including regression and correlation, confirm that these variables have a strong and positive influence on consumer purchase decisions and overall online shopping experiences. Furthermore, chi-square analysis indicates that demographic factors such as age, gender, and income level are closely associated with variations in online shopping behaviour and preferences.

Despite the widespread acceptance and satisfaction with e-commerce platforms, certain challenges persist. Issues such as delayed deliveries, product mismatches, return difficulties, and data privacy concerns continue to affect consumer trust and the overall user experience. These factors highlight the importance of consistent service quality and transparent business practices in sustaining customer loyalty.

Overall, the study concludes that while e-commerce continues to revolutionize modern shopping habits, continuous improvement in delivery efficiency, product authenticity, data security, and personalized engagement is essential for long-term growth. By focusing on customer-centric strategies and maintaining transparency, e-commerce businesses can enhance user satisfaction, strengthen trust, and build enduring relationships with consumers in an increasingly competitive digital marketplace.

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