A Study of Digital Consumer Behaviour Based on Accessibility, Time Saving, Advertising Influence and Data Privacy

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Abstract—**With rapid growth in India's digital economy, online purchasing through e-commerce, food delivery, and instant-commerce platforms has become an essential consumer trend. This study aims to analyse consumer spending patterns on online purchases, understand the factors influencing digital payment trust and comfortability, and examine behavioural trends using statistical tools. The study offers insights into evolving consumer behaviour in India's digital landscape.**

Index Terms— **Consumer behaviour, Digital comfortability, Digital payments, E-commerce, Graphs, Monthly spending, Online expenditure, Pie charts, Spearman's Rank Correlation, Statistical analysis, and Trust in technology.**

I. INTRODUCTION

Over the past few years, the way people in India shop and make purchase decisions has changed drastically. With faster internet, affordable smartphones, and easy-to-use digital payment options like UPI and online wallets, online shopping has moved from being a convenient alternative to becoming a regular part of everyday life—especially in urban and semi-urban areas.

E-commerce websites, quick-delivery apps, and online service platforms have raised customer expectations. Today, people look for speed, ease, personalised offers, and secure transactions whenever they shop online. Whether it is groceries, medicines, clothes, electronics, or even basic household items, more and more consumers prefer buying them online. This shift has also been supported by the growing trust in digital payments, which many users now see as safe, reliable, and extremely convenient.

But despite this growing trust, concerns around privacy and data safety continue to exist. Consumers may feel confident while making payments online, but they are often hesitant to share personal details on every platform—especially ones they do not recognise or trust fully. This creates an interesting gap: people trust digital payment systems, but they are far less comfortable sharing their personal information online.

To understand this behaviour better, this study examines three key aspects:

- How much people spend on online purchases
- How much they trust digital payment systems
- How comfortable they feel sharing personal information online

The data of 120 responses was collected through a structured questionnaire that included multiple spending ranges and Likert-scale ratings for trust and comfortability. The scale ranges from 1 to 5, where 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree and 5 means strongly agree. Using descriptive statistics and Spearman's Rank Correlation, the study explores whether higher trust in digital payments also makes people more willing to share their data.

As online shopping and digital payments become an essential part of life in India, understanding consumer behaviour in this space becomes extremely important. It can help companies design safer and more transparent platforms, and it can guide policymakers

in creating better privacy protections and digital awareness. Most importantly, this study helps explain how Indian consumers balance the convenience of online shopping with their concerns about safety and privacy.

II. FACTORS AND STATISTICS
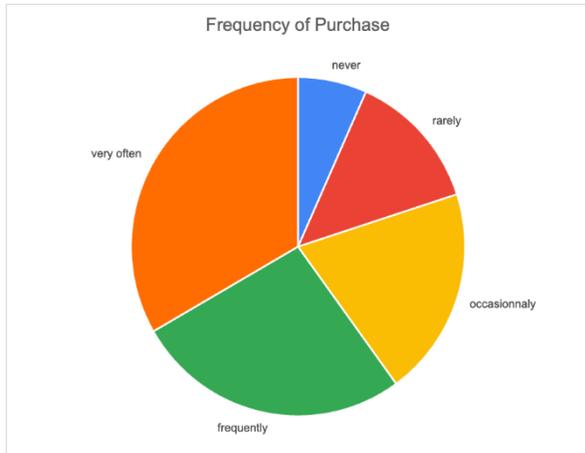
1. FREQUENCY OF PURCHASE

Figure 1 - Frequency of digital purchase by respondents

How often customers engage in online purchasing is a key indicator of reliance on digital platforms and modern purchasing habits. It helps to understand the market's transition towards, and dependence on digital commerce.

The figure illustrates the distribution of responses regarding how often customers make digital purchases, based on data collected from our survey.

As seen in the above figure, the color red shows the segment of customers who engage in digital shopping rarely, blue showing never, yellow showing occasionally, green showing frequently, and orange showing very often.

The high frequency demonstrates that online purchasing is a routine part of consumption, specifically since a large segment of respondents fall into the 18-24 age group, suggesting immediate fulfilment of needs of students.

2. MONTHLY SPENDING

Figure 2 - Monthly spending amount of respondents

The budget allocated by customers is a key factor which governs their digital purchasing decisions. Since customers naturally prioritise costs, a detailed look at their monthly expenditure helps us see the economic or monetary weight they place on accessibility and overall service quality of digital platforms.

The above figure depicts the distribution of reported monthly spending on digital platforms. The yellow bars show the categories of spending, which include the ranges 0-₹500, ₹500-₹1000, ₹1000-₹3000, ₹3000-₹5000 and ₹5000-₹10000. The most frequently reported spending falls within mid-high ranges, that is, ₹1000-₹3000 and ₹3000-₹5000, with a significant number of customers spending well above ₹5000. This willingness to spend considerable amounts demonstrates that online shopping is viewed as a necessary and reliable expenditure.
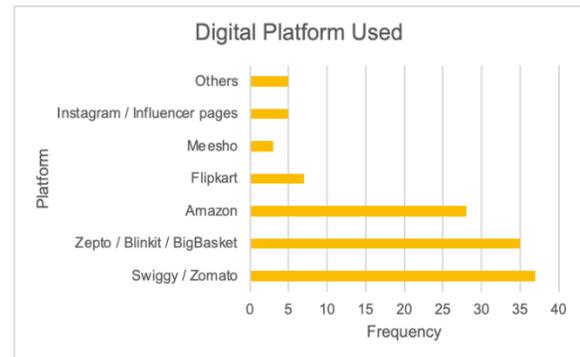
3. DIGITAL PLATFORM USED

Figure 3 - Digital platforms used by respondents

The choice of digital platform tells us where students and young adults actually spend their time and money online. It shows which particular platform or application has become essential for routine

purchases. The bars depict different e-commerce platforms used by customers.

The data shows a strong preference for instant commerce services. Platforms like Swiggy/Zomato (ready to eat food delivery) and Zepto/ Blinkit/ BigBasket (immediate grocery shopping) clearly dominate the usage charts. This confirms that customers prioritize quick access and immediate satisfaction, specifically consistent with customers in the 18-24 age group.

Bigger, established retail giants like Amazon also maintain a strong presence, standing their position as a "go-to" platform for general shopping.

Smaller categories such as Instagram/Influencer pages and Meesho show that a segment of customers is actively influenced by social media and aesthetic-driven marketing when making purchasing decisions.

This loyalty to specific platforms shows that platforms that fail to provide high accessibility and instant services will struggle to maintain engagement within the majorly young demographic.
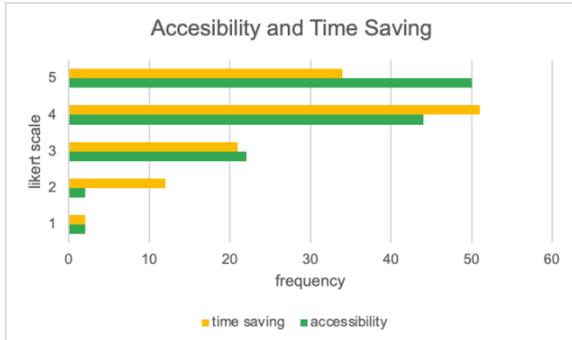
4. ACCESSIBILITY AND TIME SAVING

Figure 4 - Respondents' ratings of accessibility and time saving factors of digital platforms

Accessibility and time saving ratings measures the effectiveness and convenience offered by digital purchasing platforms. In the figure above, the green bar depicts ease of using the platform and the yellow bar depicts the time saving factor, both which have been recorded using likert scale.

Accessibility: The data for accessibility shows a strong concentration of high scores in the likert scale, mainly 4s and 5s. This confirms that the platforms are user-friendly, eliminating the obstacles which makes shopping tedious and difficult.

Time Saving: This factor is also heavily skewed towards 4s and 5s which shows that the customers consider the digital shopping environment as highly efficient.

This confirms that digital consumers prioritise platforms that deliver a simple and quick experience. Digital platforms are also moving in the same direction, by continuously enhancing their performance to provide ease and comfort of shopping to customers.

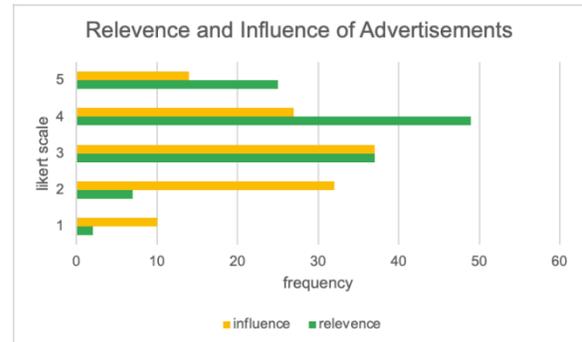## 5. RELEVANCE AND INFLUENCE OF ADVERTISEMENT

Figure 5 - Respondents' ratings on relevance and influence of advertisements

For any brand, advertisement plays a critical role in winning a major part of market share. Effective marketing requires the promotions to be relevant, for it to influence the customers.

The figure above shows the distribution of customer ratings for relevance and influence of advertisements, which are represented by green and yellow bars respectively.

Influence: A considerable number of respondents reported that digital promotions influence their purchasing choices, with the ratings being concentrated around 3 and 4. This shows that advertisements are deeply ingrained in the minds of customers, thereby driving sales.

Relevance: The ratings around relevance are highly concentrated around 3,4 and 5 showing that customers do get shown promotions which are relevant to their wants.

The overall high relevance and mostly positive influence proves that platforms are effectively using data to improve the attractiveness of promotions. This

reliance on promotions shows that digital platforms must make targeted and continuous investments to make their products or offers more appealing to customers.

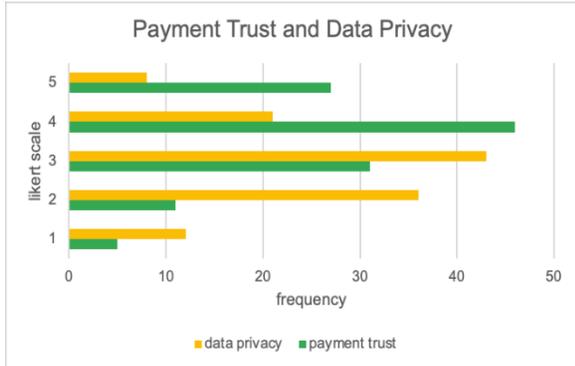## 6. PAYMENT TRUST AND DATA PRIVACY

Figure 6 - Respondents' ratings on payment trust and data privacy concerns

The risk of trusting digital platforms and sharing personal information is its hidden cost. Consumers' trust in data handling, and privacy concerns can greatly influence their satisfaction and loyalty.

The figure above shows customer's rating on a scale of 5 on their trust in digital payment systems and comfort with sharing personal information online.

Trust in payment systems: Ratings for trust in payment systems show high confidence, with a strong concentration in the 3 and 4 range. This financial trust is crucial, given the increased use of digital payment systems for purchasing in general. A high trust rating is essential to ensure that customers do not regret their decision of purchasing online.

Data Privacy Concern: The data privacy responses show a high concentration of responses in the 3 and 4 range, suggesting that although users are not completely dissatisfied, they are not confident enough to rate their data privacy experience positively.

A strong confidence in digital payment systems but a noticeably weak confidence in handling of personal data suggests that platforms must strengthen and clearly communicate their data privacy practices to their customers to match the high trust established on the digital payment systems. Closing this gap is essential for improving user confidence and loyalty.

III. SPEARMAN'S RANK CORRELATION

Spearman correlation is a non-parametric statistical measure that assesses the strength and direction of the monotonic relationship between two ranked variables. It works by ranking the data for each variable and then calculating the correlation based on these ranks, making it useful for ordinal data, non-normally distributed data, and situations with outliers. The result is a coefficient between -1 and +1, where +1 is perfect positive correlation, -1 is a perfect negative correlation, and 0 indicates no correlation. It is calculated by ranking the data for each variable and then applying the Spearman correlation formula to the ranks instead of the original values.

We conducted a survey on consumer spending patterns on online purchases. Through our survey we also found out consumer's trust and comfortability with online payment systems. We found correlation coefficient between trust in online payment systems and the consumer's comfortability in sharing their personal information online.

Through our survey, we asked our respondents to rank both of these factors on a scale of 1 to 5, 5 being the highest. We computed the Spearman's Rank Correlation based on the responses to assess the correlation between trust in online payment systems and their comfortability in sharing their personal information online.

Correlation Criteria	Coefficient	p-Value
Trust and Comfortability	0.0315	0.7322

The correlation coefficient between trust and comfortability was found to be 0.0315 which is very close to 0. This indicates a very low positive correlation between the two, indicating that the consumer's trust in online payment systems is not mainly influenced by the consumer's comfortability in sharing their personal details online.

The p-Value was also found to be 0.7322 which is close to 1, this indicates that the relationship between our two variables is not statistically significant. This suggests that the observed correlation is likely due to a random variation rather than a monotonic relationship. Therefore, based on our analysis there is no reliable evidence that suggests that a person's trust in online payment systems is associated with their

comfort level in sharing their personal information online.

IV. LIMITATIONS

1. Small Sample Size & Demographic
The sample predominantly is made up of young adults between 18–24 years, which limits the generalization of findings to such a narrow age group and is not an effective representation of the diverse consumer population in India, particularly older working professionals, rural consumers, and non-student groups.

2. Sampling Bias
Data was collected using convenience sampling, meaning responses came from easily reachable individuals already active online, creating a very strong digital-user bias and reducing the study's ability to reflect the behaviours of less tech-savvy or offline consumers.

3. Self-Reported Responses
Since all expenditure, frequency of purchase, trust levels, and comfort levels were self-reported, the results may be subject to recall errors or respondents giving socially desirable answers; hence, the data may be less reliable and may overstate digital engagement.

4. Limited Variables Considered
By not incorporating such critical influencing factors as income, occupation, education, product preference, and past experiences with online fraud, this study is limited in the depth of analysis it can provide and, by extension, prevents an understanding of why consumers do what they do.

5. Heavy Reliance on Descriptive Statistics
Most of the analysis is graphical and descriptive in nature, with very few statistical tests beyond a simple correlation, which precludes any deeper relationships, significance evaluation, or stronger data-supported conclusions.

6. Graphs Without Numerical Values
Though there are various graphs included in the study, most of them lack specific numerical values or percentages; this makes it difficult for the readers to interpret the data precisely and verify the analysis or use the findings for any comparative or further statistical work.

7. Spending Categories Too Broad
The monthly spending ranges are wide and uneven; this merges different consumer types within the same category and reduces the granularity of insights, making it harder to detect smaller but meaningful differences in spending behaviour.

8. Limitations of Likert-Scale Measurement
Only trust, accessibility, influence of advertisements, and comfort levels are gauged through Likert scales, which give the general sentiment but do not explain the reasons behind the ratings or delve deeper into more psychological or behavioural insights.

9. No Control Over External Factors
It does not account for external factors such as seasonal sales, festival months, marketing campaigns, and recent cybersecurity incidents that might have a significant impact on online spend and digital trust.

10. Lack of Regional and Cultural Diversity
The respondents are probably from the same institution or locality, so there is hardly any geographical diversity, and thus, the results cannot represent the vast cultural, linguistic, and regional differences of India in digital adoption and online shopping behaviour.

11. Single Time-Point Study
Since it was collected only once, the research is cross-sectional, not longitudinal, which will prohibit any observation of changes in consumer behaviour over time-a critical issue in an ever-evolving digital economy.

12. Correlation Cannot Prove Causation
Although the study identifies a relationship between trust in digital payments and comfort in sharing information, correlation alone cannot determine whether one actually influences the other, limiting the strength of any behavioural conclusions drawn.

V. CONCLUSION

The rapid expansion of India's digital economy has significantly transformed consumer purchasing

behaviour, especially among young adults. The findings of this study reveal that online shopping has become deeply embedded in everyday life, with high purchasing frequency and substantial monthly spending indicating strong dependence on digital platforms. Convenience, accessibility, and time efficiency were found to be the primary drivers of digital adoption, supported by strong consumer trust in online payment systems. However, this trust does not necessarily translate into equal comfort with sharing personal information, highlighting an important behavioural gap.

The results also demonstrate that instant-commerce platforms such as food and grocery delivery services are the most widely used, reflecting a strong preference for speed and immediate fulfilment. Digital advertisements also play a meaningful role in shaping consumer purchase decisions, especially when perceived as relevant and personalised.

While the study offers useful insights into the dynamics of digital purchasing behaviour, it is limited by its small sample size, demographic uniformity, self-reported responses, and reliance on descriptive statistics. Broader and more diverse sampling, along with deeper analytical tools, would provide a more comprehensive understanding of influencing factors across different consumer segments.

Overall, this study concludes that online shopping is no longer viewed as an optional convenience but as an essential and trusted mode of purchasing among India's young population. Yet, concerns about data privacy and information sharing continue to shape behaviour, indicating that digital platforms must prioritise both security and transparency to retain long-term consumer confidence. As India's digital ecosystem evolves, continuous monitoring of these behavioural trends will be crucial for businesses, marketers, and policymakers aiming to serve a rapidly maturing digital consumer base.

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