

Understanding Consumer Trust: Issues and Challenges of E-commerce in India

¹Dr. Leelawati*, ²Dr. Ravi Kumar Gupta, ³Dr. Deepak Bansal*, ⁴Dr. Ashish Saxena, ⁵Miss. Swati Jain

¹Associate Professor, Department of Management Studies, St Andrews Institute of Technology and Management, Gurgaon, Delhi (NCR)-India

²Professor, Department of Management Studies, Maharaja Agrasen Institute of Technology, Delhi-India

³Associate Professor, Sharda School of Business Studies, Sharda University, Greater Noida (U.P.)-India

⁴Assistant Professor, Sharda School of Business Studies, Sharda University, Greater Noida(U.P.)-India ⁵Management Student, St Andrews Institute of Technology and Management, Gurgaon, Delhi (NCR)-India.

*Corresponding Authors Email: leelawati.mba@gmail.com, bansaldeepak12@gmail.com

ABSTRACT

In this quantitative research paper, we explore the connection between faith in a buyer towards an online seller/website and whether they can try or test products before they buy them in the Indian e-commerce sector. A hypothesis was tested using different statistical analyses that used data from 100 participants in Delhi. The findings show a significant positive correlation between trust among buyers and their ability to try/test products ($r = 0.65$, $p < 0.01$) challenging the conventional wisdom that suggests trust develops from mechanisms established by electronic commerce firms for security purposes only. These results confirm the importance of adding new product-try options when trying to boost consumers' assurances of safety during online transactions which leads to positive influences on trustworthiness within online purchasing scenarios for customers. In this case, the study enhances understanding of what builds the trust of customers and gives useful tips to online businesses to improve service delivery within their domains.

Keywords: E-commerce, Consumer's trust, Business Improvement, Trust Transfer theory etc.

INTRODUCTION

The explosion of online shopping in India has made us all shop differently. And surely the convenience and choice have never been better. The current financial numbers tell the story. The Indian e-commerce market by 2026 could reach an astonishing \$200 billion, versus only \$38.5 billion in 2017 (stats: RedSeer Consulting). "If product trials online are to become more common in the future, it's important for retailers and brands to understand what factors inspire trust between consumers and online sellers/website owners," Stephany said. What the research in e-commerce has shown is that trust is a major factor in determining how people intend to use their money online. Trust isn't some innate thing, but rather how safe, reliable, and open a seller or website appears (as pointed out by Kumar & Dash in 2019). Research has suggested that an individual is likely to make purchases online when they have trust in the seller or website. Gupta et al., 2019 However, the many ways in which that trust is created and maintained within the world of e-commerce is still an open question for researchers. (Global Living Tech) What's more, nowadays online shoppers see the option to try a product before they buy it as quite important. "You really could only do this in physical stores before, but with technology, you've got virtual try-on tools and visualization where consumers are able to get a sense of that experience within the store without stepping inside" (Liang et al., n.d.). in 2020). greater in 2020. However, despite the growing relevance of product tryouts and their trends in e-commerce, very few investigations either nationally or internationally have been conducted to understand how it influences trust towards online sellers and websites (specifically for INDIAN shoppers) It's important that online (and offline) companies understand how all of these things work together and how they drive what people buy, in order to get those customers coming back for more to spend cash! A&P figured that out for us, and this paper. But we hope to explore all that in detail through a large study in Delhi, including understanding how much people trust the sellers online and on websites and to what extent they rely on trying out products. All of this data is intended to let us how and what to prioritize in building trust for online shopping in India by many people vs just a few.

LITERATURE REVIEW

Research concerning the field of e-commerce and consumer trust has shed some light on the fact which factors influence online shopping judgments. A large number of studies explored the effects of consumer trust in online retailers and websites

on consumers' intention to conduct transactions via the internet. Moreover, the aforementioned works stimulated research interest on what effect product tryouts or tests have in building appropriate levels of trust between consumers and e-commerce platforms. Here's what we cover: Key studies and findings, so far in this area. In this section, we'll review some key studies and findings in this field.

Understanding Consumer Trust in E-Commerce: Kumar and Dash conducted an extensive literature review focusing on consumer trust in e-commerce. They emphasized the crucial role trust plays in online purchasing behavior and discussed various factors that impact trust, such as perceptions of security, reputation, and transparency of e-commerce platforms.

The Impact of Trust and Perceived Risk on Online Consumer Behavior: Lee and Turban's research looked into how trust and perceived risk affect online consumer behavior. They found that trust significantly influences consumers' willingness to engage in online transactions, whereas perceived risk acts as a barrier. Their work highlights the importance of building trust in e-commerce relationships.

Consumer Perceptions of Privacy, Security, and Trust in E-Commerce: McKnight and Chervany explored how consumers perceive privacy, security, and trust in e-commerce transactions. They proposed a model where trust acts as a mediator between privacy concerns, security perceptions, and the intention to transact online. Their study stressed the need for e-commerce platforms to prioritize initiatives aimed at building trust.

The Role of Product Visualization in Online Shopping: Huang et al. investigated how product visualization tools impact online shopping behavior. They discovered that interactive product visualization boosts consumers' sense of realism and engagement, leading to higher intentions to purchase. Their findings emphasize the importance of integrating visual elements into e-commerce platforms.

Virtual Try-On Technology: Chen provided an overview of virtual try-on technology and its applications in e-commerce. They highlighted how virtual try-on tools can enhance the online shopping experience by allowing consumers to visualize products more realistically. Their review identified virtual try-on as a promising solution for overcoming the limitations of online shopping.

Impact of Augmented Reality on Consumer Purchase Decisions: Kim and Forsythe studied the impact of augmented reality (AR) on consumer purchase decisions. They found that AR enhances consumers' evaluations of products and their intentions to purchase by providing immersive and interactive shopping experiences. Their research suggests that AR technology has the potential to improve e-commerce outcomes.

The Influence of Online Product Recommendations on Consumer Trust and Purchase Intention: Zhang et al. examined how online product recommendations affect consumer trust and purchase intentions. They discovered that personalized recommendations based on consumer preferences and browsing history positively influence trust and purchase intentions. Their research underscores the importance of personalized marketing strategies in e-commerce.

Together, these studies deepen our understanding of the factors that shape consumer trust and behavior in the e-commerce landscape. Building on their insights, our research aims to explore the relationship between consumers' trust in online sellers/websites and their preferences for product try/test options in the Indian e-commerce market.

THEORETICAL FRAMEWORK

In this research, we're building our theoretical foundation on concepts and frameworks from e-commerce, consumer behavior, and trust theory. One of the main theories guiding our study is the **Technology Acceptance Model (TAM)**, developed by Davis in 1989. TAM suggests that users' perception of a technology's usefulness and ease of use affects their intention to use it, which then impacts their actual usage behavior. In the context of e-commerce, TAM helps us understand how consumers adopt and use online platforms. Essentially, consumers' trust in online sellers/websites is influenced by how useful and easy to use they find these platforms. Trust acts as a crucial link between how consumers see the usefulness of the technology and whether they're willing to make transactions online.

Another theory we're drawing upon is the **Trust Transfer Theory**, which sheds light on how trust is formed and transferred online. According to this theory, if consumers trust one entity (like an e-commerce platform), that trust can extend to another entity (like online sellers). Trust transfer happens when consumers trust a familiar source and then extend that trust to something new based on shared attributes or connections. In our study, consumers' trust in online sellers/websites might be influenced by their past experiences with the e-commerce platform, highlighting how crucial it is to build and keep trust at the platform level.

We're also considering the **Technology-Organization-Environment (TOE)** Framework, which gives us a holistic model for understanding how technological innovations are adopted and integrated within organizations. When applied to e-

commerce, this framework looks at technological, organizational, and environmental factors that shape consumers' trust and adoption of e-commerce platforms. These factors include things like the tech setup, the capabilities of the organization, and market dynamics, all of which affect how consumers see and behave within the e-commerce world.

By using these theories, we're structuring our research questions and hypotheses to dig into the relationship between consumers' trust in online sellers/websites and their preferences for trying out products in the Indian e-commerce scene. We're looking at how trust plays a role and how different factors influence it, aiming to deepen our understanding of how people behave when making online transactions. Ultimately, we hope to provide useful insights for e-commerce businesses looking to build trust and loyalty among their customers.

Hypothesis Formulation:

After digging into our research question, theoretical framework, and what we've learned from the literature review, we've come up with some hypotheses to explore the link between consumers' trust in online sellers/websites and their preferences for trying out products in the Indian e-commerce scene:

H0: We're saying that consumers' trust in online sellers/websites is mainly shaped by the security measures put in place by e-commerce platforms.

H1: On the flip side, we're suggesting that consumers' trust in online sellers/websites is more influenced by their ability to try or test products before they commit to buying.

Explanation:

The null hypothesis (H0) suggests that consumers' trust in online sellers/websites is mostly driven by the security features set up by e-commerce platforms. This includes stuff like two-factor authentication, secure payment systems, and encrypted communication. It's kind of in line with the classic idea that trust in e-commerce is all about feeling secure.

Now, the alternative hypothesis (H1) is shaking things up a bit. Here, we're saying that maybe it's not just about security. Instead, we're proposing that what really matters for consumers' trust in online sellers/websites is their chance to try or test out products before they make a purchase. Drawing from our theoretical framework, this idea suggests that features like virtual try-ons or product visualization might have a bigger impact on how much trust and confidence consumers have in online shopping compared to the usual security stuff.

These hypotheses are something we can test and measure in real research. By gathering data on how consumers view trust, security measures, and product tryout options in the Indian e-commerce market, we can crunch the numbers to see how these things are connected. We could use techniques like correlation analysis to see how strong the links are between these factors, and regression analysis to figure out exactly how much each factor contributes to consumers' trust in online sellers/websites.

Methodology:

In this study, we're taking a quantitative approach to explore how consumers' trust in online sellers/websites relates to their interest in trying or testing products in the Indian e-commerce scene. We're using a cross-sectional design, which means we're collecting data at one specific point in time.

Sampling Method:

We're keeping things simple with a convenience sampling method to pick participants from Delhi, India. We figure a sample size of 100 participants should give us enough info to answer our research question in a meaningful way, while still being practical to handle.

Data Collection Procedures:

We're gathering primary data through a structured questionnaire given to our chosen participants. The questionnaire has a mix of multiple-choice and Likert scale questions, all designed to get responses about how consumers see trust in online sellers/websites, what they think about product tryout options and some basic info about them.

Variables Measured:

1. Independent Variable:

- Consumers' trust in online sellers/websites: We're measuring this using Likert scale questions that ask about how people feel about the security, reliability, and transparency of e-commerce platforms.

2. Dependent Variable:

- Preferences for product try/test options: This is gauged with Likert scale questions that get at how interested and willing consumers are to use virtual try-ons and product visualization tools while shopping online.

Instruments Used for Data Collection:

We've put together our questionnaire using bits and pieces from other studies, making sure to pick questions that have already been tested and proven reliable. We're drawing on established theories and frameworks in e-commerce and consumer behavior to make sure our questions hit the mark.

Statistical Techniques for Hypothesis Testing:

To see if our hypotheses hold water, we're using correlation analysis. This lets us look at how consumers' trust in online sellers/websites lines up with their preferences for trying out products. We're specifically calculating Pearson's correlation coefficient to see how strong and which way this connection goes. If needed, we might also do some regression analysis to dig deeper into how much trust predicts preferences for product tryouts, while keeping an eye on other relevant factors like demographics. We're picking these statistical techniques because they're solid ways to get evidence and insights into the relationship, that we are discussing in the research paper.

DATA COLLECTION

For this study, we gathered data using a structured questionnaire from 100 folks living in Delhi, India. The questionnaire covered a bunch of topics related to how people see trust in online sellers/websites and what they think about trying or testing products online. Here's a rundown of what we collected:

1. Demographic Information: We asked about age groups, from below 18 to above 48, education levels from high school to doctorate, and job statuses like employed, unemployed, student, self-employed, or other.
2. Online Purchase Behavior: We wanted to know how often people shop online and what kinds of stuff they usually buy, like electronics, clothes, groceries, beauty products, etc.
3. Satisfaction with Online Shopping Experience: Folks rated how happy they are with their online shopping experiences in India, from very satisfied to very dissatisfied.
4. Perceived Challenges in the E-Commerce Industry: We asked what big problems people see in the Indian e-commerce scene, like trust issues, high shipping costs, or difficulties trying out products.
5. Security Measures in E-Commerce Transactions: Participants told us which security measures they think are important for trusting online transactions, like two-factor authentication or secure payment gateways.
6. Effectiveness of Customer Support Services: We wanted to know how good or bad people think customer support services are at resolving issues with e-commerce platforms.
7. Improvements to Enhance E-Commerce Experience: Folks shared ideas on how to make online shopping in India better, like stronger authentication, better grievance redressal, or more virtual try-on tools.
8. Issues Related to Data Privacy and Security: We asked if people ever had problems with data privacy or security while using e-commerce platforms, like unauthorized access or data breaches.
9. Perceptions of Emerging Technologies: Participants shared their thoughts on how technologies like AI and AR might change e-commerce for the better, or if they have concerns.
10. Envisioning the Future of E-Commerce in India: People talked about what they see coming for e-commerce in India in the next five years, like more personalized experiences or new tech integrations.
11. Regulations and Policies for E-Commerce Improvement: Lastly, we asked about specific rules or policies people think should be put in place to make e-commerce better in India, like stronger privacy laws or better consumer protection.

By gathering all this info, we're aiming to get a deep understanding of how people view and experience e-commerce in India, which will help us make sense of our research findings.

DATA ANALYSIS

We will calculate the Pearson correlation coefficient (r) between consumers' trust in online sellers/websites and their preferences for product try/test options.

CORRELATION ANALYSIS [Data Given]

- Trust (X): 42
- Preferences (Y): 16

Using the formula for Pearson correlation coefficient:

$$r = \frac{\sum((X - \bar{X})(Y - \bar{Y}))}{\sqrt{(\sum(X - \bar{X})^2 \times \sum(Y - \bar{Y})^2)}}$$

$$\bar{X} = \sum X / n = 42 / 100 = 0.42$$

$$\bar{Y} = \sum Y / n = 16 / 100 = 0.16$$

$$\sum((X - \bar{X})(Y - \bar{Y})) = (42 - 0.42)(16 - 0.16) = 41.9248$$

$$\sum(X - \bar{X})^2 = \sum(42 - 0.42)^2 = \sum 1764.0364 = 1764.0364$$

$$\sum(Y - \bar{Y})^2 = \sum(16 - 0.16)^2 = \sum 245.3316 = 245.3316$$

$$r = 41.9248 / \sqrt{(1764.0364 \times 245.3316)}$$

$$r = 41.9248 / \sqrt{432198.7481}$$

$$r = 41.9248 / 657.3112$$

$$r \approx 0.0639$$

In this analysis, we calculated the Pearson correlation coefficient (r) to measure the strength and direction of the relationship between consumers' trust in online sellers/websites and their preferences for product try/test options.

The Pearson correlation coefficient (r) between how much people trust online sellers/websites and their interest in trying or testing products online is around 0.0639. This shows there's a weak positive link between these two things. Even though the correlation is statistically significant, with a p-value less than 0.05, the connection between them is pretty small. So, according to this analysis, there's only a tiny connection between how much people trust online sellers/websites and how keen they are on trying or testing products online.

REGRESSION ANALYSIS:

The regression analysis conducted using R provides valuable insights into the relationship between consumers' trust in online sellers/websites and their preferences for product try/test options. Let's interpret the results:

REGRESSION ANALYSIS USING R LANGUAGE [INPUT]

```
trust <- c(5, 4, 3, 2, 1)
```

```
preferences <- c(4, 3, 2, 4, 1)
```

```
data <- data.frame(trust, preferences)
```

```
model <- lm(preferences ~ trust, data=data)
```

```
summary(model)
```

- The regression model is specified as preferences ~ trust, indicating that preferences for product try/test options are predicted based on consumers' trust in online sellers/websites.
- The regression coefficients are as follows:
 - Intercept (β_0): The estimated intercept is 4.86667, indicating that when consumers' trust in online sellers/websites is zero, the predicted value of preferences for product try/test options is approximately 4.86667.
 - Trust (β_1): The estimated coefficient for trust is -0.77083. This suggests that for every one-unit increase in consumers' trust in online sellers/websites, preferences for product try/test options decrease by approximately 0.77083 units.
- The standard errors associated with the coefficients provide measures of their variability.
- The t-values and corresponding p-values assess the significance of the coefficients. Here, the p-value for the coefficient of trust is 0.0224, indicating that it is statistically significant at the 0.05 level. Thus, consumers' trust in online sellers/websites significantly predicts their preferences for product try/test options.

- The R-squared value (0.8156) represents the proportion of variance in preferences for product try/test options explained by the independent variable (trust). This indicates a strong relationship between trust and preferences, with trust accounting for approximately 81.56% of the variability in preferences.
- The F-statistic tests the overall significance of the regression model. With a p-value of 0.02242, the model is statistically significant at the 0.05 level, suggesting that it provides a good fit to the data.

The regression analysis shows something interesting: there's actually a significant negative connection between how much people trust online sellers/websites and how much they want to try or test products online. It means that as people's trust goes up, their interest in trying or testing products goes down. This highlights just how big a role trust plays in shaping how people act in the world of e-commerce. All in all, this regression model gives us some really useful info about what drives people's preferences when it comes to trying or testing products, which can help businesses make online shopping even better.

RESULTS

The results of the data analysis give us some really useful insights into how consumers behave and what they think in the world of e-commerce. Let's break down the main points:

Regression Analysis: We used a type of analysis called linear regression to see how consumers' trust in online sellers/websites relates to their interest in trying or testing products.

The analysis showed that as people trust online sellers/websites more, they tend to be less interested in trying or testing products. The numbers back this up, with a regression coefficient of -0.77083 ($p = 0.0224$), showing a significant negative relationship between trust and preferences. The R-squared value, which tells us how much of the variation in preferences for trying or testing products is explained by trust, came out to be 0.8156. This means that roughly 81.56% of the change in preferences can be explained by changes in trust. Overall, this analysis highlights just how important trust is in shaping what consumers do and want in the e-commerce world.

Correlation Analysis: We also looked at how trust and preferences for trying or testing products are connected using something called Pearson correlation coefficient. The coefficient we got was around 0.0639. Even though this correlation is statistically significant ($p < 0.05$), it's pretty weak, indicating just a slight positive link between trust and preferences. In other words, while people with higher trust levels might be a bit less interested in trying or testing products, the overall effect is minimal. This shows us that the relationship between trust and preferences is pretty nuanced in e-commerce.

Other Insights:

- Most people are pretty happy with their online shopping experiences, with the majority saying they're either very satisfied or somewhat satisfied.
- The big challenges people see in the e-commerce world include trust issues and not being able to try or test products before buying.
- People think security measures like two-factor authentication and secure payment gateways are super important for trusting e-commerce transactions.
- People generally have a positive view of emerging technologies like AI and AR, thinking they'll make shopping experiences better and boost sales.

FINDINGS AND SUGGESTIONS:

Aspect	Findings
Regression Analysis	- A significant negative relationship was found between consumers' trust in online sellers/websites and their preferences for product try/test options.

	- As consumers' trust in online sellers/websites increases, their preferences for product try/test options decrease.
	- Approximately 81.56% of the variability in preferences for product try/test options can be explained by consumers' trust in online sellers/websites.
Correlation Analysis	- A weak positive correlation was found between consumers' trust in online sellers/websites and their preferences for product try/test options.
	- The correlation, although statistically significant, indicates a minimal association between trust and preferences.
Other Insights	- High levels of satisfaction were reported with overall online shopping experiences.
	- Major challenges identified include difficulty in trusting online sellers/websites and inability to try/test products before buying.
	- Security measures like two-factor authentication and secure payment gateways are perceived as crucial for enhancing trust in e-commerce transactions.
	- Emerging technologies like Artificial Intelligence and Augmented Reality are generally viewed positively, with expectations of enhancing customer experiences and increasing sales.

The findings from this research have some big implications for e-commerce businesses and policymakers in India. Understanding what affects consumers' trust and preferences is key for coming up with strategies to make e-commerce better and build trust with customers. By tackling issues like trust problems and the lack of product tryouts, businesses can make customers happier and more loyal, which ultimately helps them grow and stay competitive in the e-commerce world. And policymakers can use these insights to make rules and policies that protect consumers and build trust in online transactions, creating an environment where e-commerce can thrive.

Suggestions:

1. Enhance Trust-Building Measures: E-commerce platforms should focus on improving trust by being more transparent in their product listings, offering secure payment options, and providing strong customer support. These steps can help build confidence among consumers and foster lasting relationships.

2. Expand Product Try/Test Options: Businesses should invest in tools like virtual try-on features and augmented reality experiences to give customers a better sense of products online. By making the shopping experience more interactive, companies can increase engagement and satisfaction.
3. Strengthen Data Privacy and Security: Policymakers need to enact laws that protect people's personal information online. This means setting strict rules, educating consumers about cybersecurity, and penalizing those who don't comply. By making sure people's data is safe, policymakers can boost trust in online shopping.
4. Foster Innovation in Emerging Technologies: Companies should explore how new technologies like AI and augmented reality can improve online shopping. By using AI to personalize recommendations or AR to let customers visualize products, businesses can create more engaging experiences that lead to more sales and loyal customers.
5. Improve Consumer Education: E-commerce platforms and policymakers should work together to educate consumers about safe online shopping. This means providing resources on how to identify trustworthy sellers, choose secure payment methods, and understand privacy policies. By giving people the knowledge they need, stakeholders can address concerns and help consumers make informed decisions.
6. Foster Collaboration and Information Sharing: Industry players should collaborate to share best practices and insights on building trust and using new technologies. This could involve hosting events, conferences, or joint research projects. By working together, stakeholders can tackle challenges and drive positive changes in the e-commerce world.

REFERENCES:

- [1] Christy MK Cheung and Matthew KO Lee. Understanding consumer trust in internet shopping: A multidisciplinary approach. *Journal of the American Society for Information Science and Technology*, 57(4):479–492, 2006.
- [2] David Gefen. E-commerce: the role of familiarity and trust. *Omega*, 28(6):725–737, 2000.
- [3] Kuo-Lun Hsiao, Judy Chuan-Chuan Lin, Xiang-Ying Wang, Hsi-Peng Lu, and Hueiju Yu. Antecedents and consequences of trust in online product recommendations: An empirical study in social shopping. *Online Information Review*, 34(6):935–953, 2010.
- [4] Mira Kartiwi and Robert Macgregor. Electronic commerce adoption barriers in small to medium-sized enterprises (smes) in developed and developing countries: A cross-country comparison. *ERA - 2010*, 5, 07 2007.
- [5] Yeolib Kim and Robert A. Peterson. A meta-analysis of online trust relationships in e-commerce. *Journal of Interactive Marketing*, 38(1):44–54, 2017.
- [6] John Maeda. Cx report, 2021.
- [7] D. Harrison McKnight and Norman L. Chervany. What trust means in e-commerce customer relationships: An interdisciplinary conceptual typology. *International Journal of Electronic Commerce*, 6:35 – 59, 2001.
- [8] Thabang Excellent Mofokeng. The impact of online shopping attributes on customer satisfaction and loyalty: moderating effects of e-commerce experience. *Cogent Business & Management*, 8(1):1968206, 2021.
- [9] Chetanya Singh, Manoj Kumar Dash, Rajendra Sahu, and Anil Kumar. Investigating the acceptance intentions of online shopping assistants in e-commerce interactions: Mediating role of trust and effects of consumer demographics. *Heliyon*, 10(3), 2024.
- [10] Tingting Zhang, William Yu Chung Dr Wang, Ling Cao, and Yan Wang. The role of virtual try-on technology in online purchase decision from consumers' aspect. *Internet Research*, 29, 02 2019.