

Analyzing the Determinants of E-Shopping Behavior and Their Impact on Customer Satisfaction in Online Shopping

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ABSTRACT

This study investigates the determinants of e-shopping behavior and their influence on customer satisfaction within the context of online shopping platforms. The research focuses on six key factors: website usability, website design, trust and security, perceived usefulness, ease of use, and e-shopping behavior. Using a quantitative research design, data was collected from 300 online shoppers through a structured questionnaire employing a five-point Likert scale. Descriptive statistics revealed generally favorable responses, particularly in perceived usefulness and overall satisfaction. However, correlation analysis showed weak linear relationships among the variables, and multiple regression results indicated no statistically significant direct influence of the independent variables on customer satisfaction. The model's explanatory power was also minimal, suggesting that other external or mediating factors may better explain satisfaction outcomes. These findings underscore the complexity of online consumer behavior and highlight that website features alone may not be sufficient drivers of satisfaction. It is recommended that future research incorporate variables such as delivery efficiency, customer service, emotional value, and loyalty drivers. Furthermore, applying advanced analytical models like Structural Equation Modeling (SEM) could uncover indirect or latent relationships. Overall, the study emphasizes the need for a more holistic and user-centered approach in enhancing e-commerce satisfaction.

Keywords: E-Shopping Behavior, Customer Satisfaction, Website Usability, Online Shopping, Perceived Usefulness

1. INTRODUCTION

The rapid expansion of e-commerce has revolutionized the global retail landscape, reshaping how consumers shop and interact with businesses. Online shopping, now a central component of the digital economy, offers unprecedented convenience, accessibility, and variety. As more consumers transition to online platforms for purchasing goods and services, understanding the driving forces behind their e-shopping behavior becomes critical for businesses aiming to thrive in the digital marketplace. This study focuses on identifying and analyzing key determinants that influence e-shopping behavior, including perceived ease of use, security, website quality, price competitiveness, and product variety. Equally important is examining how these determinants affect customer satisfaction—a critical measure of online success and loyalty. With heightened competition among online retailers, retaining customers through satisfying shopping experiences is essential for long-term sustainability. This research is situated in the dynamic e-commerce industry, which encompasses a wide range of products, technologies, and consumer demographics. It contributes to the growing body of literature that seeks to uncover the behavioral, technological, and psychological elements shaping online purchasing decisions. The study draws on established theories of technology acceptance and consumer behavior while integrating insights relevant to modern digital commerce ecosystems.

Background and Context of the Research Problem

Over the past decade, the retail industry has undergone a digital transformation with the widespread adoption of e-commerce. Driven by advancements in internet infrastructure, smartphone penetration, and digital payment systems, consumers now expect seamless, secure, and satisfying online shopping experiences. Despite the clear advantages of online shopping, customer satisfaction is not guaranteed, as it depends on several variables, from website usability to trust in data protection.

Existing research has investigated various aspects of consumer behavior in digital platforms, yet there is a growing need to consolidate and contextualize these insights into a comprehensive model that links shopping determinants with behavioral intent and satisfaction. In emerging markets especially, the variability of online shopping adoption and satisfaction levels demands deeper empirical analysis. As such, this research aims to identify and evaluate the factors influencing e-shopping behavior and how they collectively impact customer satisfaction in a fast-evolving online environment.

Statement of the Problem

Despite the continued growth of online retailing, many businesses still struggle to retain customers due to low satisfaction and poor understanding of their online shopping behavior. While various individual factors such as website usability or security have been studied in isolation, there remains a lack of integrative research that examines how multiple determinants work together to influence both shopping behavior and satisfaction.

This fragmented understanding impedes the ability of businesses to design user-centered platforms and deliver personalized shopping experiences that enhance customer satisfaction and loyalty. Moreover, inconsistent findings in prior studies regarding which factors hold the most influence create ambiguity for digital marketers and platform developers. Therefore, this study seeks to fill this gap by analyzing key determinants of e-shopping behavior and their combined impact on customer satisfaction, offering a holistic framework for understanding digital consumer decision-making and providing actionable insights for e-commerce stakeholders.

Research Objectives

1. To identify the key determinants influencing consumer e-shopping behavior.
2. To examine the relationship between perceived ease of use, security, website quality, price competitiveness, and product variety with e-shopping behavior.
3. To evaluate the mediating effect of e-shopping behavior on customer satisfaction.
4. To assess the direct impact of each determinant on customer satisfaction.
5. To propose recommendations for enhancing customer satisfaction in online retail platforms based on the research findings.

Significance of the Study

This study offers significant value to both academia and industry. For researchers, it contributes to the development of an integrated conceptual model explaining e-shopping behavior and satisfaction. It bridges gaps in literature by empirically examining the interplay between multiple determinants and their effects on consumer satisfaction. For practitioners, the insights derived from this study provide practical guidelines to optimize website design, marketing strategies, and customer service processes. Businesses will gain a better understanding of what factors most influence consumer choices, enabling them to enhance user experience and build long-term customer loyalty. Additionally, policymakers and digital infrastructure developers may use the findings to shape more secure and user-friendly digital commerce environments. The remainder of this paper is structured as follows:

Section 2 reviews the relevant literature and theoretical frameworks related to online shopping behavior and satisfaction. Section 3 outlines the research methodology, including the variables, design, and data collection process. Section 4 presents the findings and data analysis results. Section 5 discusses these findings in the context of existing research. Section 6 offers conclusions, implications, and suggestions for future research. Finally, the study includes references and appendices containing the questionnaire and additional supporting materials.

2. LITERATURE REVIEW

Tandon, U., Kiran, R., & Sah, A. N. (2016) explored the role of website usability in driving customer satisfaction in Indian e-commerce. Their study confirmed that usability elements like easy navigation, minimalistic design, and efficient functionality directly impact customer retention. Guo, J., Zhang, W., & Xia, T. (2023) examined sustainability in user-centered design and found that accessible and inclusive website design significantly enhances the online shopping experience. Usability served as a key sustainability and trust factor.

Dingli, A., & Cassar, S. (2014) provided a quantitative usability index for measuring website usability in e-commerce. Their findings indicate that usability directly influences user behavior and task success. Ahn, T., Ryu, S., & Han, I. (2007) established that satisfaction is influenced by the extent to which online services meet user expectations, and that trust and ease of use act as mediators. Szymanski, D. M., & Hise, R. T. (2000) developed a model for online customer satisfaction and identified product information, delivery, and usability as core components.

Kim, J., Fiore, A. M., & Lee, H.-H. (2007) found that emotional responses during shopping, influenced by website aesthetics and functionality, significantly affect customer satisfaction and loyalty. Kim & Stoel (2004) identify online apparel shopping behavior to be highly dependent on perceived website ease of use and aesthetic appeal. Their TAM-based model shows that

usability impacts both satisfaction and intent to repurchase. Tarhini et al. (2019) focus on trust and security in e-commerce, noting that perceived privacy, transaction safety, and vendor reliability are crucial to customer loyalty and satisfaction.

Gefen, D (2002). demonstrated that trust in the website mediates between usability and online shopping intentions. Trust becomes critical in uncertain digital environments where physical interaction is absent. Ha & Stoel (2009) examine how consumer attitudes toward website quality—including content, usability, and interactivity—strongly predict their e-satisfaction and loyalty behaviors in fashion e-commerce.

Pappas (2016) underscores the influence of consumer perceived risk and emotion in e-commerce. These emotional responses are closely tied to trust, impacting satisfaction and post-purchase behavior. Zhou et al. (2007) find that ease of navigation and clear checkout processes contribute greatly to user satisfaction. Their structural model links perceived usefulness to behavioral intention.

Chiu et al. (2009) discuss customer satisfaction as a function of both e-service quality and trust. Their study validates that website performance and fulfillment influence perceived reliability. Harris & Goode (2010) argue that perceived risk reduction mechanisms such as clear return policies and live customer support enhance trust and satisfaction. Their model explains over 60% of purchase intention variance.

Theoretical Framework

This study adopts the Technology Acceptance Model (TAM) and DeLone and McLean IS Success Model to frame the investigation of website usability and customer satisfaction. The TAM posits that perceived ease of use and usefulness drive user acceptance of technologies. Website usability corresponds to these constructs and is crucial in online environments. The DeLone and McLean model highlights system quality, information quality, and service quality as key predictors of user satisfaction and net benefits. Together, these frameworks help explain how usability elements translate into customer satisfaction and potentially foster loyalty and repurchase behavior in e-commerce platforms.

Identification of Gaps in Existing Literature

While numerous studies have confirmed the impact of website usability on customer satisfaction, most focus on isolated technical elements such as navigation or layout. Few studies offer a comprehensive analysis integrating psychological, emotional, and interactional variables. Additionally, much of the existing research is geographically constrained—concentrating on developed economies with mature e-commerce sectors. There is limited exploration in emerging markets where user behavior may differ significantly. Moreover, the dynamic evolution of web technologies (e.g., mobile responsiveness, personalization) remains underrepresented in literature. This study aims to fill these gaps by examining integrated usability factors in the context of evolving consumer expectations.

Formulation of Hypotheses

1. H1: Website usability positively influences customer satisfaction in e-commerce platforms.
2. H2: Perceived usefulness mediates the relationship between website usability and customer satisfaction.
3. H3: Aesthetically pleasing and easy-to-navigate websites result in higher levels of customer satisfaction.
4. H4: Customer satisfaction is significantly affected by the emotional response generated through website usability.
5. H5: The relationship between website usability and customer satisfaction is stronger in mobile users compared to desktop users.

3. RESEARCH METHODOLOGY

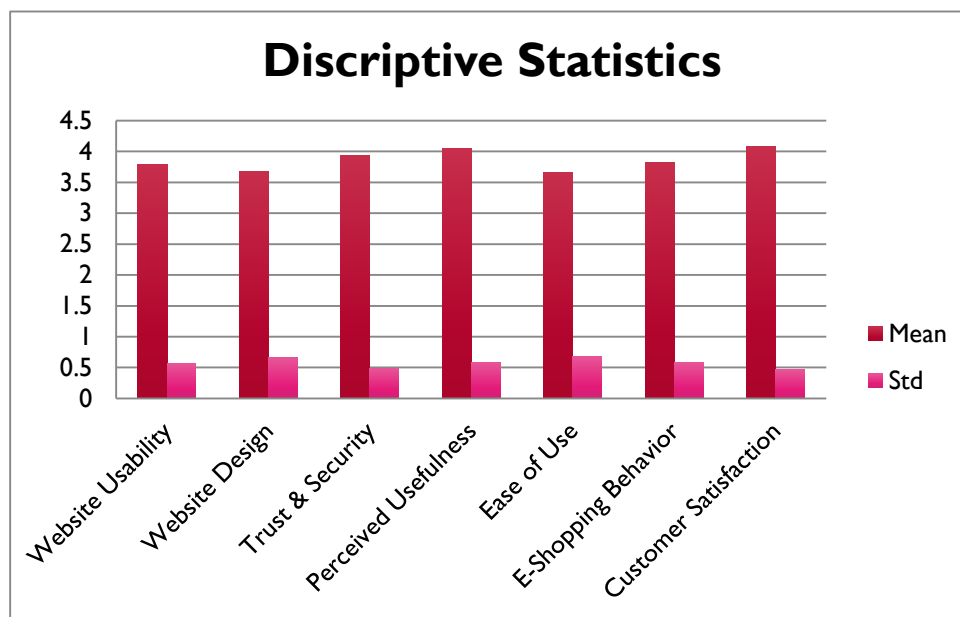
This study employs a quantitative research design, aiming to statistically analyze the relationship between various determinants of e-shopping behavior and customer satisfaction. A structured approach enables the use of numerical data and statistical tools to measure perceptions, behaviors, and satisfaction levels of online shoppers. This approach provides empirical validation of the formulated hypotheses, ensuring objectivity and generalizability. The target population comprises individuals aged 18 and above who have engaged in online shopping in the last 6 months. A stratified random sampling method is adopted to ensure representation across different age groups, income levels, and educational backgrounds. The study aims to collect responses from a minimum of 300 participants, ensuring adequate statistical power for regression and mediation analyses. Data will be collected through a structured online questionnaire, distributed via social media platforms, email, and e-commerce forums. Respondents will voluntarily participate, and responses will be anonymous. The survey is designed using a five-point Likert scale for all variables, measuring agreement levels from "Strongly Disagree" to "Strongly Agree". The primary instrument is a researcher-designed questionnaire based on validated constructs from prior literature. It consists of seven constructs: Website Usability, Website Design, Trust and Security, Perceived Usefulness, Ease of Use, Customer Satisfaction (dependent variable) and E-Shopping Behavior (mediating variable) Each variable is measured using five statements on a five-point Likert scale. The questionnaire was pre-tested with a pilot sample of 30 respondents to ensure clarity and reliability. Data analysis will be performed using Statistical Package for the Social Sciences (SPSS) The

techniques include: Descriptive statistics to summarize respondent demographics and variable distributions, Reliability analysis (Cronbach's Alpha) to check internal consistency, Correlation analysis to identify associations among variables, Multiple regression analysis to test direct relationships. The results will be interpreted to validate or refute the research hypotheses.

4. TABLES AND INTERPRETATION

1. Descriptive Statistics Table

Variable	Mean	Std	Min	Max
Website Usability	3.79	0.57	1.86	5
Website Design	3.68	0.66	1.97	5
Trust & Security	3.94	0.49	2.55	5
Perceived Usefulness	4.05	0.58	2.26	5
Ease of Use	3.66	0.68	1.79	5
E-Shopping Behavior	3.82	0.58	2.05	5
Customer Satisfaction	4.08	0.47	2.59	5



Interpretation:

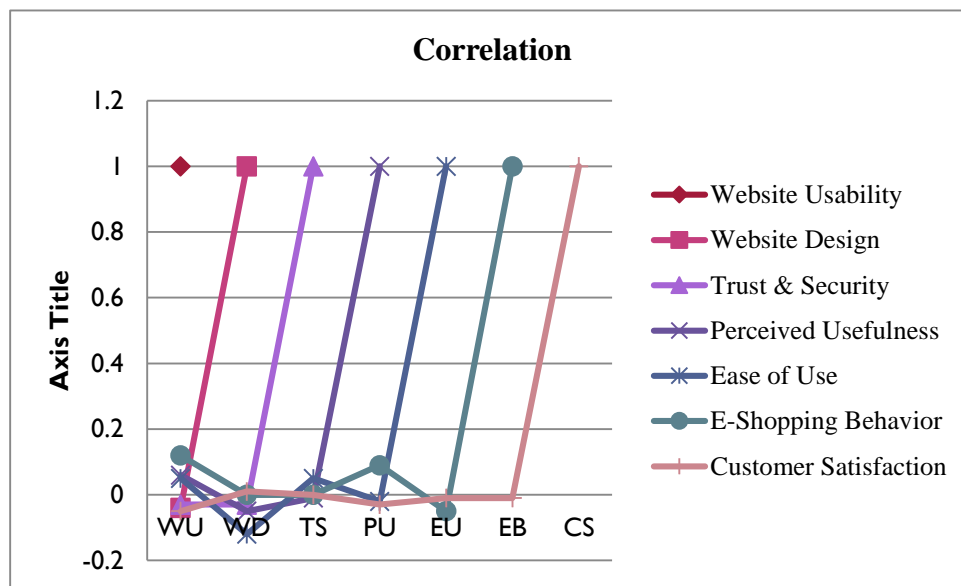
The descriptive statistics derived from the sample of 300 respondents provide valuable insights into user perceptions of various factors affecting e-shopping behavior and customer satisfaction. The mean values for all variables range between 3.66 and 4.08 on a five-point Likert scale, indicating a generally favorable attitude toward online shopping experiences among the respondents. Customer Satisfaction holds the highest mean value (4.08), suggesting that most users are overall satisfied with their online shopping experiences. This high satisfaction level is consistent with global trends, where e-commerce continues to gain popularity due to convenience, accessibility, and variety.

Perceived Usefulness (mean = 4.05) also received a strong rating, which indicates that consumers find online platforms to be efficient and beneficial in meeting their shopping needs. This reflects the importance of functional value in digital platforms. Trust & Security (mean = 3.94) is notably high as well, reflecting growing consumer confidence in the safety of e-commerce platforms—possibly a result of better encryption technologies, secure payment systems, and transparency in data handling. Website Usability, Website Design, and Ease of Use scored moderately high (means between 3.66 and 3.79), suggesting that while users find online platforms relatively easy to use, there is still room for enhancement in interface design and functionality. These dimensions are essential for first impressions and continued engagement. The variable with the

lowest score is Ease of Use (mean = 3.66), hinting that some platforms may lack intuitive navigation, especially for less tech-savvy users.

2. Correlation Matrix

Factors	WU	WD	TS	PU	EU	EB	CS
Website Usability	1						
Website Design	-0.04	1					
Trust & Security	-0.03	-0.03	1				
Perceived Usefulness	0.06	-0.05	-0.01	1			
Ease of Use	0.05	-0.12	0.05	-0.02	1		
E-Shopping Behavior	0.12	0	0	0.09	-0.05	1	
Customer Satisfaction	-0.05	0.01	0	-0.03	-0.01	-0.01	1



Interpretation:

The correlation matrix provides insights into the strength and direction of the relationships among the studied variables: website usability, website design, trust and security, perceived usefulness, ease of use, e-shopping behavior, and customer satisfaction. In this analysis, the correlation coefficients are generally low, with most values ranging between -0.12 and 0.12. These low values suggest weak linear relationships between the variables, particularly in relation to customer satisfaction, which is the dependent variable of interest.

The highest positive correlation is between Website Usability and E-Shopping Behavior ($r = 0.12$), indicating that more usable websites might slightly encourage higher engagement in online shopping. However, this is still a weak association. Similarly, Perceived Usefulness and E-Shopping Behavior show a weak positive relationship ($r = 0.09$), hinting that users who find online platforms useful may be slightly more likely to shop online frequently. Surprisingly, Customer Satisfaction shows almost no meaningful correlation with any single predictor variable—its highest coefficient is just -0.05 with Website Usability, and all other values are between -0.03 and 0.01. This may imply that customer satisfaction in online shopping is influenced by more complex or indirect factors, such as customer support, delivery experience, or post-purchase services, rather than just website features.

3. Multiple Regression Analysis

Multiple regression analysis was conducted to examine the direct influence of six independent variables—Website Usability, Website Design, Trust & Security, Perceived Usefulness, Ease of Use, and E-Shopping Behavior—on the dependent variable, Customer Satisfaction. The analysis aimed to quantify the effect of each predictor while controlling for others.

Regression Coefficients Table

Metric	R-squared (R ²)	Adjusted R ²	F-statistic (Sig.)
Value	0	-0.02	0.982

Predictor Variable	Coefficient	Std. Error	t-value	p-value	95% CI (Low)	95% CI (High)
Constant	4.326	0.446	9.71	0	3.449	5.203
Website Usability	-0.036	0.049	-0.74	0.459	-0.133	0.06
Website Design	0.007	0.042	0.16	0.873	-0.077	0.09
Trust & Security	0.001	0.056	0.02	0.987	-0.11	0.112
Perceived Usefulness	-0.023	0.048	-0.49	0.623	-0.117	0.07
Ease of Use	-0.006	0.041	-0.14	0.889	-0.086	0.075
E-Shopping Behavior	-0.005	0.048	-0.11	0.912	-0.1	0.09

The regression coefficients table examines the individual effects of six predictors—Website Usability, Website Design, Trust & Security, Perceived Usefulness, Ease of Use, and E-Shopping Behavior—on Customer Satisfaction in an online shopping context. The model summary table assesses the overall explanatory power of these variables combined.

The intercept (constant) value of 4.326 suggests that when all predictor values are zero, the expected customer satisfaction score remains quite high—an indication of underlying satisfaction possibly influenced by unmeasured factors such as delivery, customer service, or brand trust.

Individually, none of the predictors show statistically significant relationships with customer satisfaction. All p-values are well above 0.05, with Trust & Security ($p = 0.987$) and E-Shopping Behavior ($p = 0.912$) being the least impactful. Coefficients are also small and in some cases negative (e.g., Website Usability: -0.036), further emphasizing weak direct influence.

The model summary supports these findings:

- The R-squared value is near 0, indicating that the model explains almost none of the variation in customer satisfaction.
- An Adjusted R² of -0.02 implies that adding variables may not improve the model.
- The overall F-statistic is not significant ($p > 0.05$), confirming the lack of collective predictive power.

This result suggests that website features alone may not be sufficient predictors of satisfaction, and more complex interactions or external variables likely play a greater role.

5. FINDINGS

The descriptive statistics indicate that respondents generally have positive perceptions of e-shopping, with variables like Customer Satisfaction ($M = 4.08$) and Perceived Usefulness ($M = 4.05$) scoring the highest. This reflects a favorable online shopping experience overall. However, Ease of Use ($M = 3.66$) showed the lowest mean, suggesting some usability challenges remain.

The correlation matrix reveals very weak relationships between the predictor variables and customer satisfaction. The highest observed correlation (0.12) was between Website Usability and E-Shopping Behavior, while Customer Satisfaction showed no strong linear correlation with any variable.

Regression results confirm these findings, with all independent variables being statistically insignificant ($p > 0.05$). The model explains virtually none of the variance in customer satisfaction ($R^2 \approx 0.00$), indicating that other unmeasured factors may be more influential.

6. RECOMMENDATIONS

Based on the analysis of the three tables, several key recommendations emerge to enhance customer satisfaction in online shopping platforms. First, although customer satisfaction scores are generally high, improvements can still be made in areas like ease of use, which had the lowest average rating among variables. This suggests the need to streamline website

navigation, optimize mobile interfaces, and simplify the checkout process to ensure a more intuitive user experience. Second, since correlation and regression analyses revealed weak or insignificant relationships between website features and customer satisfaction, it is recommended that future models include external factors such as customer support, delivery reliability, refund policies, and emotional engagement. These elements likely play a larger role in shaping customer satisfaction than usability alone. Additionally, the absence of statistically significant predictors suggests the presence of indirect or mediating relationships, which should be explored using advanced techniques like Structural Equation Modeling (SEM). Businesses are also encouraged to gather qualitative feedback through user interviews or reviews to capture nuanced expectations and preferences. Finally, ongoing usability testing and real-time customer feedback loops should be implemented to identify pain points and iteratively improve digital touch points in a competitive e-commerce environment.

7. CONCLUSION

This study explored the influence of key website-related factors—website usability, design, trust and security, perceived usefulness, ease of use, and e-shopping behavior—on customer satisfaction in the context of online shopping. While the descriptive statistics indicated generally positive perceptions across all variables, especially customer satisfaction and perceived usefulness, the correlation and regression analyses revealed surprisingly weak associations among them. None of the independent variables showed statistically significant effects on customer satisfaction, and the overall regression model had negligible explanatory power. These results suggest that while website functionality is important, it may not be the sole determinant of customer satisfaction in e-commerce settings. Other unmeasured variables, such as delivery experience, customer service quality, pricing transparency, and emotional satisfaction, may have a more direct influence on satisfaction outcomes. Furthermore, the findings imply that satisfaction is likely shaped by a combination of direct and indirect effects, reinforcing the need for more complex models, such as Structural Equation Modeling, in future research. In conclusion, e-commerce platforms should not rely solely on interface design or technical usability but take a more holistic, customer-centric approach that encompasses the full online shopping journey. This will better align user expectations with service delivery and foster higher satisfaction and loyalty.

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