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## THE IMPACT OF USABILITY QUALITY AND SITE SECURITY FEATURES OF A RETAIL E-COMMERCE WEBSITE ON E-SATISFACTION AND INCREASING AI INTERVENTIONS

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### ABSTRACT

*Today, AI runs in the background of every website. They assist to boost internet shopping. E-retailers benefit from technology-enabled websites that provide value and give a competitive advantage. In this study, the researcher assesses the impact of usability quality and Site Security features of a retail E-commerce website on E-satisfaction and increasing AI interventions. In recent years, technology and artificial intelligence have been present on almost every website that supports online commerce. Technology-enabled websites add value to e-retailers, but little study has been conducted to relate this component of website design to consumer pleasure and buying behavior in the online domain, often known as e-satisfaction. It is becoming increasingly clear that AI is making an impact in this sector, and most merchants, particularly online retailers, are using some of the technologies since it is critical for businesses to remain relevant and up to date in terms of technology breakthroughs.*

**Keywords:** *Artificial Intelligence, E-commerce, Evaluation of Technology, E-satisfaction*

### INTRODUCTION

According to Goldman Sachs predictions (Business Today, 2020), online shopping in India is predicted to reach \$99 billion, with the market for online retailers more than tripling to around 11% by 2024, up from 4.7% in 2019 and expanding at a 27% CAGR. Furthermore, Statista (2022) states that active e-commerce use is 76.7%, with the online retail sector projected to be worth \$73 billion by 2022. Today, Amazon and Flipkart are India's leading online retailers, with their combined sales exceeding \$18 billion. The e-commerce industry will expand dramatically as additional internet consumers enter the market after and during the outbreak. Online adoption has increased to 7 to 8%, indicating a significant paradigm shift. In Europe, the online component was worth around US\$105 million in 2018 and is expected to approach US\$138 million by 2023. The retailing sector, Europe's largest retail industry, was valued at around US\$66 million in 2019 and is expected to reach US\$92 million by 2023 (Striapunina, 2019).

Wang et al. (2014) evaluated the impact of AI applications on the online retail market and found that techniques such as neural networks, genetic algorithms, and other AI tools are employed in the business process. The ever-changing technical landscape will always result in market disruption, which can be traced back to product history.

According to Marinchak et al. (2018), the adoption of AI has provided clients with a better awareness of product availability, as well as faster and more accurate delivery. Overall, artificial

intelligence has an influence on online buying across the company's value chain. It also influences how people shop online. Marketers should grasp the technologies that may be used to improve the customer experience when surfing the website. Johnson (2019) explains in her paper on the future of why AI treatments have become a crucial part of service delivery.

The retail business has experienced a transformation, with technology playing an important part in its digitalization. Smartphones and smart devices have given customers high expectations for service and satisfaction. Shoppers' expectations have skyrocketed over the last decade, as have their purchasing patterns. The expansion of ecommerce over the last decade, particularly since the pandemic, has resulted in a paradigm shift for both customers and enterprises. The focus has definitely shifted from offline to online. The way we explore and buy has migrated to the internet, and with it comes technology that allows us to "touch and feel" products without having to visit a physical store.

All of the technical innovation that has occurred in the retail business aims to accommodate this client need. Brands and businesses who fail to develop and adopt new technology are no longer relevant to today's tech-savvy consumer. Currently, AI technologies are mostly employed through Machine Learning (ML) and learning that is interactive. As an area of computational science, ML may also be considered as a multidisciplinary subject that includes pattern recognition or artificial intelligence, data mining, quantitative probability theory, and statisticians (Zhou et al, 2005).

As a result, both large and small businesses are striving to combine their product lines with digital transformation, whether through machine learning, computer vision, or other AI-powered technologies. This has enabled them to create better experiences for their customers, both offline and online. The quality of a website is increasingly seen as a strategic advantage for e-retailers. It is the instrument used to communicate and transact with their consumers. The internet is expanding faster, and the development of technologies such as ML and AI enables us to select items and execute transactions with the click of a mouse.

## **ROLE OF AI IN E-COMMERCE WEBSITES**

AI and associated technology have begun to play a significant role in helping and growing the e-commerce industry. AI is no longer just a science fiction notion seen in movies or on television; it has permeated our daily lives. AI has invaded our daily lives since its inception over 65 years ago, and the broader technology is being used in a number of sectors, including engines for searching, recognition of speech, learning/gaming, and recognizing objects (Haenlein et al. 2019).

AI is currently used in companies such as healthcare, retail, and security detection. AI has the potential to positively influence clients, and advertisers want to know how these breakthroughs will impact the client experience. Novel marketing approaches, driven by developing AI technology, allow us to successfully connect with our target audience's emotions and provide extraordinary experiences, even in virtual space (Pusztahelyi, 2020).

According to Asling (2017), using AI into online purchasing enables customer-centric searches via recommendation systems and a new level of customisation. This immediately leads to a more efficient sales process.

## REVIEW OF RELATED STUDIES

Bhagat et al. (2022) analyze the difficulties that affect the real implementation of AI and its impact on customer OPI. They presented two hypotheses: (i) "subjective norms, faith, and awareness favourably affect AI enabled ease-of-use," (ii) "AI enabled ease-of-use improves purchase intention" . According to their research, AI has a positive influence on client purchase decisions. Websites that leverage technology and artificial intelligence assist customers not only save time while browsing for items, but also deliver a better shopping experience, increasing consumer trust in e-commerce companies. AI-enabled technology on websites streamlines a variety of tasks for customers, like searching for specific things, quickly comparing qualities, seeking in-depth information about products, and so on. They also urge additional study to enhance OPI.

Miao et al. (2021) evaluated the impact of "e-satisfaction", "e-trust", and "perceived value" on consumer repeat purchase intention in the B2C e-commerce sector. Their assumptions back up two claims: (i) delivery service impacts e-satisfaction, and (ii) customer service quality influences trust. The data indicate that e-satisfaction has a significant influence on consumer repeat purchase intentions. E-satisfaction is also influenced by online design, quality of information, and intent to repurchase. There is a gap when using this B2C approach to a single or several product categories. It may also include other factors such as culture and demographics, which can act as moderators and mediating variables.

Jain and Gandhi (2021) seek to look at the impact of contemporary technologies like artificial intelligence (AI) on impulsive purchase in India, namely internet shopping. Artificial intelligence-powered services such as "chatbots," "voice assistants," "virtual fitting rooms," and others are rapidly being implemented in retail enterprises to improve customer experience and income. Though it is still in its early phases, businesses have begun to use AI technologies such as Virtual Fitting Rooms (VFRs), which allow customers to try on clothing with mix-and-match choices and accessories in a simulated setting rather than a physical fitting room.

Chaudhary et al. (2021) explore the elements that impact customers' omni-channel retail purchases in the industry via the eyes of an Indian millennial. Their findings reveal that "perceived usefulness" (PU) has a major influence on the long-term desire to purchase via all channels.

Riedel and Mulcahy (2019) performed an empirical study on the classification of engaging retail technology as highly or weakly interactive. The goal of this study was to see how an interactive website engages the senses and how these visual and aural senses affect consumers' hedonic and enjoyable retail product experiences. They believe that highly collaborative retail technology creates a more engaging experience for customers, resulting in increased satisfaction with the e-retailer.

Pandey and Chawla (2018) investigate the OCE in retail and attempt to determine if the OCE dimensions have an influence on satisfaction and loyalty. This study attempts to adapt and validate the functional and psychological elements of OCE in the Indian environment. They are: (i) "e-Negative Beliefs", (ii) "e-Self-inefficacy", (iii) "e-Logistic use", (iv) "e-convenience", (v) "e-enjoyment", and (vi) "informativeness". While analyzing the functionality component of OCE, one of their theories is about the website's ability to meet client demands. They are: (i) "website interactivity/", (ii) "website informativeness", (iii) "website visual engagement", (iv) "website

navigation", and (v) "ease of search". They argue that these features will increase customer satisfaction and loyalty. Thus, website interaction increases e-satisfaction. They have implications for future study on the "OCE-satisfaction-loyalty" link, as well as other moderators such as age, education level, occupation, and income level. Especially when Generation Y uses cellphones to fulfill their online shopping needs.

Ahmed et al. (2017) looked at the link between hedonism, pleasure, and website quality, as well as how these affect e-satisfaction and e-loyalty. They feel that service quality is being employed as a competitive advantage in the marketplace. More and more e-commerce businesses are employing cutting-edge e-service tactics to attract, retain, and convert new users into loyal repeat customers. They claim that online dimensions such as (i) "web layout", (ii) "web info", (iii) "customer service", (iv) "fulfilment", and (v) "privacy" have a positive influence on "e-satisfaction". Overall, online consumer happiness has a clear correlation with e-loyalty. Beyond the measures specified by the authors, these characteristics and dimensions may be expanded to incorporate more regions.

Kundu and Datta (2015) identify trust as a mediating variable between e-SQ and consumer satisfaction in internet banking. Their findings have several managerial implications. The findings suggest that considerable caution should be used to uphold the promise given to clients about internet banking and consumer privacy protection.

Lin et al. (2015) used a triadic approach to better understand the impact of service quality on client retention and satisfaction in the e-commerce supply chain. They planned to evaluate e-SQ, Logistics Quality (LSQ), and Customer Satisfaction. To assess e-SQ, five qualities were used: "use", "website design", "customization", "responsiveness", and "assurance". LSQ was evaluated using nine criteria: "staff contact quality", "order release quantities", "details quality", "ordering processes", "order accuracy", "order condition", "order quality", "order dispute handling", and "promptness".

Etemad-Sajadi (2014) performed a study to examine users' impressions of the website's quality, as well as their behavioral intentions toward the site when engaging with a virtual agent on a website. The author intended to explore the usefulness of technology in giving e-Services on the website of a business, as well as consumers' demand for an enhanced and engaging experience. According to the study, adding an interactive virtual agent to a website increases its "hedonic value". There is still opportunity for research on the availability and success rate of virtual agents.

Mohamed et al. (2013) used current consumer behavior theories and measurement scales to develop a framework for assessing travelers' website satisfaction and willingness to buy tickets directly from airline websites. They provide a framework that includes nine constructs: information quality, system quality, PU, PEOU, e-trust, airline reputation, price perception, electronic happiness, and purchase intent (PI).

## **OBJECTIVES OF THE STUDY**

- To assess the impact of usability quality features of a retail e-commerce website on E-satisfaction
- To assess the impact of site security features of a retail e-commerce website on E-satisfaction

## RESEARCH METHODOLOGY

The study examines both client e-satisfaction and present-day applications of AI and ML algorithms that power online retailing platforms. The survey was done using non-probability judgment sampling, with the presumption that the person who responded is familiar with internet shopping and has purchased things online during the last six months. The exploratory investigation included the districts of Western Uttar Pradesh. Google Forms was used to collect survey data for this investigation. The data were examined with SPSS version 29 software.

## DATA ANALYSIS INTERPRETATIONS

### USABILITY QUALITY

Usability quality is a WebQual 4.0 construct that assesses website quality based on system requirements and website characteristics. It refers to system satisfaction and the website's appeal. This concept measures the website's navigation and ease. The things in this construct pertain to the logical and utilitarian characteristics of the websites. It also includes size and fitting tools, which leverage underlying technology driven by AI and ML algorithms. This survey measures usability quality using seven statements. The gathered replies are subjected to descriptive analysis (mean score, average deviation, maximum and minimum score) against the various assertions used to assess usability. The mean values of the agreement scores for the various categories are displayed under the usability construct, which often shows the website's ease of operation, navigation, and engagement.

**Table 1: Descriptive analysis-Usability quality**

SN	Statements	Mean	Std. D	Min	Max
1	The site is easy to use and operate	3.87	1.068	1	5
2	Interaction with the site is clear and easy to understand	3.76	1.102	1	5
3	The site has clear navigation	3.75	1.084	1	5
4	The site has good appearance	3.83	1.094	1	5
5	The technology used in the website design is facilitating	3.86	1.005	1	5
6	The site allows me to instantly compare alternatives among products	3.57	1.048	1	5
7	The size has sizing tools which are accurate for retailing	3.77	1.005	1	5

According to table 1, the mean score of the replies to all assertions ranged from 3.57 to 3.87, showing the respondents' level of agreement with the various claims of "usability quality". The respondents believe that the website is simple to use and navigate (mean score = 3.87). The website's technology is user-friendly (mean score =3.86) and visually appealing (mean score =3.83). The user believes that the site's interaction is straightforward and easy to grasp (mean score = 3.76), as does its navigation (mean score = 3.75). The website's sizing tools are appropriate for selling (mean score = 3.77). The statement "Whether the site allows users to instantly compare options among products" received the lowest mean score (mean score = 3.57). The standard deviation of the replies represents

the variety in the responses. The responses range from 1 to 5 for all statements indicating "usability quality". The websites in question are those that were ranked first through third in the survey's descriptive section. The majority of respondents identified Amazon, Flipkart, Myntra, and Ajio as their preferred online retail websites, particularly for products. In this study, the items related to the technology behind the website are constructs declaration5, statement6, and declaration7, which deal with whether the technology is facilitating (declaration5), allowing the user to compare substitutes (statement6), and the accuracy of sizing tools used for shopping (statement7). As we can see, all of these items have mean ratings more than 3.5, indicating that they have a considerable influence on e-satisfaction.

### ***SITE SECURITY FEATURES***

This architecture includes four components related to the website's security aspects, such as measures that safeguard personal privacy and encourage trust, known as e-trust. The components in this build also address payment gateway security and online financial transaction security.

**Table 2: Descriptive analysis-Site Security Features**

SN	Statements	Mean	Std. D	Min	Max
1	I trust the security on the website	3.73	.975	1	5
2	I feel too much personalization is a risk to my privacy	3.66	.874	1	5
3	website keeps my personal information confidential	3.56	.935	1	5
4	I feel the payment gateways are secure	3.78	.882	1	5

According to table 2, the mean score of the replies to all assertions ranged from 3.56 to 3.78, reflecting the respondents' level of agreement with the various claims of "site security features". According to the respondents, the following site security features are important: "I trust the security on the website" (mean score = 3.83), "I feel too much customization is a risk to my privacy" (mean score = 3.66), "website keeps my personal information confidential" (mean score = 3.56), and "I feel the payment gateways are secure" (mean score = 3.78). As we can see all these items have high mean scores > 3.5 which means that they have significant impact on e-satisfaction.

### ***E-SATISFACTION FACTORS***

E-satisfaction is the trustworthy variable, which represents how satisfied customers are in the online setting. It assesses respondents' happiness with their interactions on the website. The items in this construct relate to consumer happiness across all dimensions or products. The e-satisfaction with the various aspects that power the website, such as navigability, technology features, the quality of reviews and ratings, and satisfaction with the Sizing/Fit features on the site, satisfaction with specific suggestions, satisfaction with the website's security (SAT6), and finally satisfaction with the payment options. The reliable variable online satisfaction is the total satisfaction with the individual things in this build.

**Table 3: Descriptive analysis–E-satisfaction Factors**

SN	Statements	Mean	Std. D	Min	Max
1	Navigability of the website	3.87	1.068	1	5
2	The different technology features on the site	3.76	1.102	1	5
3	The quality of reviews and ratings provided	3.75	1.084	1	5
4	Satisfaction level with the Sizing/Fit features on the site	3.83	1.094	1	5
5	Satisfied with personalized recommendations	3.86	1.005	1	5
6	Satisfaction level with security of the website	3.57	1.048	1	5
7	Satisfaction with the payment options	3.77	1.005	1	5

## CONCLUSIONS

Usability The quality of the website, such as ease of navigation, ease of operation, and good appearance, are sufficient conditions; however, what provides customer satisfaction are features on the website that allow you to do fast product comparisons and sizing tools for retailing, which make online shopping a positive experience. According to the results of the investigation, the majority of respondents strongly believe that this is an important element on the website. Furthermore, we may conclude that technology enhances the "touch and feel" part of online purchasing while lowering the perceived risk of purchase. This has a direct influence on OPI, reducing returns.

Site security features refer to the security features offered on the website. The analysis in this concept focused on payment gateway security, personal information confidentiality, and consumer data privacy. Nowadays, all websites, large and small, use AI and technological interventions, notably in the online retail industry, because it gives retailers a significant competitive edge and allows them to more correctly analyze their consumers' demands. This increases both the navigability and the whole value chain of the retail process. The results suggest that AI may be used to automate CRM processes, make predictions about consumer purchasing behavior, and identify trends. Today, AI in retail enables the analysis of massive amounts of data utilizing analytics and machine learning algorithms. They give insight into future demand trends, online product suggestions, and so forth. The sustainability of this technology is based on recent developments in data storage and access, such as Big Data applications and cloud computing. All of this technology enables us to obtain accurate findings across many sectors of the value chain using these algorithms.

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