

Impact of Website Design and Product Image Quality on Efficient Online Shopping Experiences

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Abstract

Purpose : The present study aimed to examine the role of website design, product pictures, and their qualities in facilitating the online shopping experience for consumers. The world economy has moved its paradigm from a manufacturing to a service-driven economy, where international market dynamics, changing consumer expectations, and technological advancements have led to cut-throat competition and complexities, especially in the online shopping domain. The current study, therefore, aimed to evaluate the effect of website design quality and high-quality product images on consumers' trust, e-satisfaction, and online shoppers' pleasure.

Design/Methodology/Approach : A structured questionnaire was administered using quota sampling to collect primary data from 220 customers from Delhi and Gurugram. Customers frequently use e-commerce websites (Flipkart, Amazon, Meesho, and Myntra) to shop online. In India, a pilot study was first performed to ensure the questionnaire's reliability.

Findings : We found that product image quality and website design quality significantly improved e-satisfaction, which in turn affected user shopping loyalty. The findings suggested that the quality of product images alone had a significant impact on e-satisfaction, highlighting the importance of visual appeal in stimulating positive consumer responses.

Practical Implications : Using the study's findings and the impact of different variables on customer trust and e-satisfaction, marketers were able to develop strategies that emphasized multicultural marketplaces.

Originality/Value : Unlike prior research, the current study established the foundation for understanding changing customer preferences regarding visual appeals and their dimensions in affecting customer loyalty toward websites.

Keywords : website design, product picture quality, online shopping, consumer trust, e-satisfaction

Paper Submission Date : July 20, 2024 ; **Paper sent back for Revision :** February 18, 2025 ; **Paper Acceptance Date :** May 15, 2025 ; **Paper Published Online :** June 15, 2025

Digitalization has introduced revolutionary changes in the marketplaces across the globe. It has minimized the digital divide, offering equal opportunities irrespective of developed, developing, underdeveloped economies, regional boundaries, etc. It has paved the way and opened endless opportunities for firms and consumers (Srivastava et al., 2023). Online giant players like Amazon, Flipkart, Myntra, and Meesho have tapped the hidden opportunities through technical advancements and highly customized integrated platforms.

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DOI : <https://doi.org/10.17010/ijom/2025/v55/i6/175109>

Research Problem

The present study aims to examine how exactly they contribute and to what extent they lead to customer satisfaction in a nutshell. Purchasers can now draw in organizations in new ways due to improvements in web technologies and related applications (Payne et al., 2017). While trying to catch a more significant part of the web market, many organizations are taking a massive interest in client-driven internet-based source advances.

Research Gap

As per Bleier et al. (2018), organizations utilize many of their endeavors to improve the quality of their clients' collaborations and work on their sites' vibe. In addition, it habitually concentrates on the association between customer conduct and web composition (Rosário & Raimundo, 2021). Even though web composition is significant, earlier exploration has not shown which parts of sites influence clients' decisions in every case. Concentrates to date report clashing outcomes regarding how much data a site ought to give to diminish client risk discernment and empower informed buying choices (Omar et al., 2021). This paper aims to bridge this gap by examining the key website elements that influence user perceptions and decision-making.

Research Aim and Purpose

This study employs the technology acceptance model (TAM) to explore how web architecture components impact purchasers' behavior.

The TAM explains how users come to accept and use a technology. The key constructs are as follows:

- ✎ **Perceived Usefulness (PU)** : The degree to which a person believes that using a system would enhance his/her performance.
- ✎ **Perceived Ease of Use (PEOU)** : The degree to which a person believes that using the system would be free of effort.
- ✎ **Attitude Toward Using (ATT)** : The user's evaluation of the system.
- ✎ **Behavioral Intention (BI)** : The user's intention to use the system.
- ✎ **Actual System Use** : The real usage of the system.

The study variables can be mapped as being equated to PEOU with website design quality (including easy navigation, clear layout, and responsiveness); PU with product picture quality (which helps users make better decisions and reduces purchase anxiety); trust and e-satisfaction with mediators between perceived ease/usefulness and behavioral outcomes ; attitude toward use with online shopper's pleasure (i.e, how enjoyable the experience is); behavioral intention with shopping loyalty (the likelihood of returning/purchasing again); and actual system use with that of the frequency of using online shopping platforms.

Potential Contribution of the Study

Web-based financial services set the stage for the inquiry. In the financial business, shopper conduct is task-situated. Clients can openly choose from various channels to finish exchanges, including PC, cell phone, tablet, or in-person banking. The more significant part does, in any case, regularly use many channels. The sort of exchange

may likewise impact which channel is picked; for example, eye-to-eye banking is proper for high-intracacy exchanges like credits, while web channels are more qualified for low-intracacy exchanges like equilibrium checks. Banks contend in the web-based financial market, so to stick out, they frequently feature various parts of web architecture, for example, decadent (style) or utilitarian (item-related data, route) viewpoints. This assists helps addressing the necessities of different purchaser segments and exchanging insights for clients.

Objectives of the Study

To evaluate the impact of website design quality and high-quality product images on consumers' trust, e-satisfaction, and online shoppers' pleasure. The current study aligns with the market trends in e-commerce and digital consumer behavior, highlighting its relevance and demand. With the rapid expansion of online shopping, consumers have become more discerning, making website design quality and high-resolution product images critical factors influencing trust, e-satisfaction, and loyalty. Technological interventions and developments, from artificial intelligence to augmented and virtual reality, have significantly changed the e-commerce landscape. Moreover, this, in turn, has instilled the demand for a visually stunning and interactive shopping experience. On another note, the avowed competition between major online retailers like Amazon and Flipkart also compelled an increased focus on the UI/UX and visual representation of products to maintain low bounce rates and improve conversions. Moreover, academically and practically, this study contributes to instilling a fresh perception of consumer preferences while guiding marketers, UX/UI designers, and e-commerce managers in improving online shopping experiences. Given the digital economy's ongoing transformation, this research is both timely and valuable for businesses seeking competitive differentiation and customer engagement.

Literature Review

The literature review critically examines the key elements that have the potential to influence customer satisfaction in online shopping, with a focus on website design, product quality (PQ), information quality, user loyalty, and trust. The review investigates how these elements contribute to customer satisfaction and to what extent they influence purchasing decisions. In the wake of advancements in web technologies and interactive applications (Payne et al., 2017), businesses increasingly invested in customer-oriented online tools to capture a larger digital market share. This literature review lays the foundation for analyzing how these technological developments translate into customer satisfaction.

Picture Product Quality

PQ is crucial for online buying. The product details report identified PQ as an influential factor that affected online transaction performance (Suhendar & Ruswanti, 2019). A product was given for sale to satisfy consumer demands, industrial needs, or use (Suhendar & Ruswanti, 2019). When it comes to online shopping, where things are only found on computer screens, the quality of the product pictures is everything. It could influence customers' purchasing decisions, as it often forms the initial and frequently the most enduring impression they have. Electronic products are displayed to affect how customers think about them and whether they decide to use them (Mehta & Chugan, 2018). According to studies, 60% of internet buyers reported that excellent product images are the primary factor in their decision to buy. Chincholkar and Sonwaney (2022) empirically analyzed Tier-III markets, revealing that consumer preferences varied according to age, gender, marital status, profession, and income.

Users' Shopping Loyalty

Trust, strong satisfaction, and positive online reviews created loyal customers on e-commerce platforms (Al-Adwan et al., 2020). A fundamental idea in marketing research is loyalty. According to Ltifi and Gharbi (2012), customer loyalty is a belief corresponding to the commitment to regularly repurchasing or using a favored product, which is what customer loyalty means. Similarly, loyalty is described as an ongoing bond between a customer and a brand (Ltifi & Gharbi, 2012). Ltifi and Gharbi (2012) defined e-commerce loyalty as a customer's positive perception of an online retailer that leads to recurring purchases. According to Vijay et al. (2019), customers' positive attitude toward a specific e-commerce website is a direct outcome of the quality of the information available on the site, which in turn determines their loyalty toward the platform.

Information Quality

Considering how crucial the internet has become in the communication domain, it is understood that consumers who shop online would review various product details before selecting which to purchase (Madiawati et al., 2020). Because of this, an informative website works as a marketing strategy that ensures the seamless completion of transactions during online shopping. The ability to provide online consumers with accurate, precise, understandable, reliable, and honest information is referred to as information quality (Mofokeng, 2021). Information is made up of a variety of elements that collectively define its quality. Various studies attempted to identify the key information features. Bao and Huang (2018) highlighted accurate, comprehensible, and current information. Offering reliable and correct information online boosts the possibility of drawing in and keeping customers.

Consumer Trust

Omni-channel approaches became a popular research topic because most studies have been carried out to find out their impact on consumer satisfaction and loyalty intentions. Lazaris et al. (2021) analyzed the effects of different levels of offline-to-online integration on the firm's performance attributes. They asserted that omni-channel retailing contexts also generated good experiences for customers in retail stores. Wooton and Cui (2022) further discovered that consumer satisfaction and trust were significant determinants of purchasing intentions because satisfying consumer needs would directly boost interest in buying via online selling applications. In this context, the importance of consumer satisfaction in directing purchasing decisions was highlighted—a same point also emphasized by Lazaris et al. (2021), who stressed the need for desirable continuity between retail channels to better customer engagement.

Information Trust

A successful e-commerce website attracts users and customers to its offerings. Users' perceptions of the honesty, reliability, and trustworthiness of an e-commerce website are therefore crucial. In e-commerce, information trust is crucial since online consumers cannot physically touch, view, or inspect the goods they plan to purchase (Fadhillah et al., 2021). Customers who perceive the online information offered as trustworthy and legitimate are more likely to trust e-commerce companies. Singh and Verma (2017) comprehensively tested the connection between corporate social responsibility (CSR) and brand equity, finding that CSR further enhanced loyalty, purchase intention, and overall brand performance. As articulated by Bulsara and Vaghela (2022), the unique ability of millennials to manoeuvre within the digital marketplace gives them a definitive edge in capturing a

potential consumer segment. The outlook of the study revealed trust, e-service quality, and subjective norms as the most significant factors impacting purchase intention toward consumer electronics among millennials. Similarly, Kumar and Kaushal (2019) pinpointed the key aspects influencing consumers' attitudes toward electronic durable goods.

E-Satisfaction

When customer expectations and experiences are compared, customer satisfaction is frequently seen as the outcome. When the end product—that is, the experience—meets or exceeds the expectations of the client, customer satisfaction is attained. Satisfaction and loyalty are the two main factors influencing an e-commerce market's success. Satisfied clients are more likely to repurchase if the seller meets their expectations (Alam & Yasin, 2010). The term “e-satisfaction” refers to consumer satisfaction in an online context that emerges with e-commerce.

Website Design

According to Guo et al. (2023), web design features play a role in customer satisfaction and loyalty, with usability acting as a mediator, while trust moderates these effects. Various points of view have been considered while concentrating on website design, and the more significant part of them pinpoints the components that might have influenced how well-received a website is (Eneizan et al., 2020). The most common way of making a curio is with the structure's design, which is arranged, deliberate, and valuable with a defined design. Strong digital merchandising portals must have features like being user-friendly, responsive, and having strong technology integration (Sharma & Sachdeva, 2022).

The study titled “*The Impact of Website Design on Users' Trust*” by Kairi Fimberg and Sonia Sousa, presented at the 11th Nordic Conference on Human-Computer Interaction (Fimberg & Sousa, 2020), explores how various aspects of website design influence users' trust perceptions. The researchers aimed to identify specific design elements that foster trust among users. Consumers are more likely to opt for green products online when the website is trustworthy and designed innovatively (Srisathan et al., 2024). An online experiment involving two different websites was conducted to assess how these design dimensions affected users' trust perceptions (Fimberg & Sousa, 2020). Appropriately designed websites lead to a stronger bond with e-customers by assuring them and keeping them happy (Suurmaa, 2021). The study showed that professional visual design significantly contributed to positive first impressions in consumers, which is closely linked to increased trust. Beyond the initial impressions, elements within the content and social-cue design further enhanced trust. The study underscored that trust is not attributed to a single design component but instead it forms from the collective integration of multiple design elements (Fimberg & Sousa, 2020). Consumer characteristics and product presentation styles play a significant role in influencing online impulse purchases in the fashion industry. E-loyalty is strongly influenced by e-trust, e-service quality, and e-satisfaction in digital retail environments. Trust in a website and its design improves the quality of online services, encouraging customers to be loyal (Venkatakrishnan et al., 2023).

Product Visuals

Consumer behavior toward advertising has been studied primarily in recent years, with an increasing focus on the neurophysiology of consumers and digital marketing approaches. Alsharif et al. (2022) revealed the processes in the brain, such as emotions, motivation, reward, attention, perception, and memory, that underlie consumer responses toward advertisements. Their systematic literature review found the relevant brain areas engaged

during consumer reactions to advertisements. Online videos have become important in persuading consumers to make purchasing decisions, sometimes more than traditional media, especially on social platforms such as TikTok. Dendi et al. (2023) examined the influence of content on TikTok Shop videos on consumer purchasing behavior, finding that engaging, informative, and innovative video content drives consumer interest in products and services. High-quality product pictures raise the overall appeal of products and help guide customers in their buying process (Szulc & Musielak, 2022). Collectively, these studies highlight the evolving nature of consumer behaviour towards advertising ; whereas, conventional studies concentrate on neurophysiological factors influencing consumer reactions to advertisements, formulating digital marketing strategies also bears witness to the growing importance of online video content in shaping purchasing decisions. The 2023 study *“Trust and Website Conversion in Consumer Responses to Green Product Purchasing”* examined how innovative website design and technology integration influenced consumer trust and conversion rates for green products. Based on a survey of 384 Thai consumers, the research found that features like virtual reality, chatbots, and social media integration enhanced perceived usability and website quality, building user trust. The study findings highlighted the importance for marketers and website designers to focus on trust-building elements in website design to promote green product purchases effectively.

Research Methodology

Type of Research

This study employs a quantitative research design to explore factors behind customer satisfaction when shopping online. A structured survey technique was utilized to gather measurable data so that the variables involved in website design, quality of product pictures, information trustworthiness, and user loyalty could be accurately analyzed. This technique enables statistical analysis as it identifies patterns and relationships among variables.

Research Design and Data Collection Approach

The research collected primary data using a structured questionnaire to ensure that the gathered data is simple, valid, and reliable. A pilot test was implemented on a preliminary sample of the respondents to verify the understanding and applicability of the questions. The pilot study's findings were applied to improve the questionnaire and achieve effectiveness for the larger sample size. Quota sampling was used to guarantee that the sample adequately represented the demographics of online shoppers in Delhi and Gurugram, India. The non-probability sampling technique was provided to represent particular demographic groups by criteria like age, gender, occupation, and level of education. This study intentionally focused on Delhi and Gurugram due to their significant online consumer base, high internet penetration, and dense population of tech-savvy consumers. In comparison, the study objectives acknowledge the geographic limitation, and quota sampling ensures that the demographic diversity within these regions, such as age, gender, occupation, and education, offers data and information applicable to urban online shoppers in similar Tier 1 cities. Future studies are encouraged to include Tier 2 and rural markets to broaden generalizability.

Sampling Design

The final study sample comprised of 220 internet consumers (both male and female) from Delhi and Gurugram. The sample size was determined based on representativeness and an adequate level of statistical power for data analysis. The sample size of 220 respondents was determined based on the minimum recommended ratio of

observations to parameters in structural equation modeling (SEM). Following the general rule of thumb (i.e., 5–10 respondents per parameter estimated), this sample size is statistically sufficient to ensure valid path analysis. Furthermore, a pilot study was conducted beforehand, which informed the reliability and refinement of the questionnaire, thereby reducing noise and increasing the data quality even within a moderate sample size. The final size ensures an acceptable level of statistical power to detect medium to significant effects. The survey was anonymous to minimize any risk of bias in the responses. Before the study was carried out, the participants were assured that their privacy was protected, encouraging more candid responses. The quota sampling approach controlled for demographic variation in age, gender, and occupation, making sure that the sample was inclusive as well as diverse. Further, during the pilot phase, we examined response patterns for misalignment or bias and changed the final questionnaire accordingly to minimize bias and improve clarity. Future iterations of this study are suggested to use cross-validation, triangulation, and other approaches to better assess bias.

Data Collection Tools and Techniques

The data collection tool was a structured questionnaire distributed electronically. Respondents were selected from users of four major Indian e-commerce platforms: Flipkart, Amazon, Myntra, and Ajio. The questionnaire assessed user responses to online information, website features, and purchasing behaviors. The survey link was distributed via Google Forms using direct WhatsApp, email, and messenger messages to maximize reach and participation. Participants received discount codes or printable vouchers for online coupons and gifts as a token of appreciation.

Justification of the Sample Framework

Quota sampling was the preferred technique for representing different segments of the population on parameters such as age, gender, education, and occupation. The selected method allowed control of sample structure and ensured representation across different demographic categories of relevance to consumer behavior in India with respect to online shopping.

Analysis Techniques and Software Used

We analyzed the data using SEM to explore direct and indirect relationships between variables. The following statistical techniques were employed:

- ✦ Descriptive analysis to summarize data characteristics.
- ✦ Correlation tests are used to examine relationships between variables.
- ✦ Factor analysis to identify underlying constructs.
- ✦ Path analysis using SEM to assess the causal relationships.

For the data, all analyses were performed using IBM SPSS and AMOS software for SEM.

Instrument Reliability

The reliability of the scales used in the questionnaire was verified using Cronbach's Alpha. All scales measuring user loyalty, information trust, e-satisfaction, product picture quality, and website design quality achieved alpha values above the accepted threshold of 0.70, ensuring internal consistency.

Time Period and Geographical Scope

The data collection process spanned nine weeks, from February 2024 to April 2024, covering the regions of Delhi and Gurugram, India. These locations were specifically chosen due to their high internet penetration and significant engagement with e-commerce platforms, ensuring a relevant sample for the study. The research was conducted in the first quarter of 2024, with the findings analyzed and compiled for submission in July 2024.

Respondents' Profile

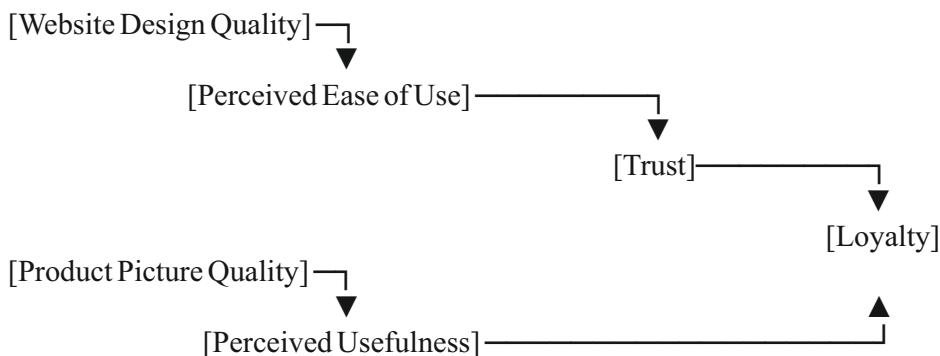
The study group comprised of 220 respondents from diversified age groups, incomes, genders, and academic and career backgrounds. This study, based on data collected from a heterogeneous group of respondents, would tend to, in fact, present better information and clarification on how the different consumer segments engage in online shopping.

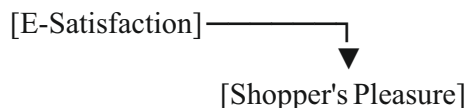
Hypotheses Statements

- ✦ **H01** : Website design quality and product picture quality do not positively influence PEOU, which enhances trust and leads to higher shopping loyalty.
- ✦ **Ha1** : Website design quality and product picture quality positively influence PEOU, which enhances trust and leads to higher shopping loyalty.
- ✦ **H02** : High-quality product images do not enhance PU, which positively impacts e-satisfaction.
- ✦ **Ha2** : High-quality product images enhance PU, which positively impacts e-satisfaction.
- ✦ **H03** : Product picture quality does not positively influence e-satisfaction.
- ✦ **Ha3** : Product picture quality positively influences e-satisfaction.
- ✦ **H04** : Website design and product picture quality do not directly increase customer satisfaction.
- ✦ **Ha4** : Website design and product picture quality directly increase customer satisfaction.

Conceptual Framework

Applying TAM to study the impact of website design and product image quality on consumer trust, e-satisfaction, and shopping loyalty.





Here, the conceptual framework shows that website design quality influences PEOU. In contrast, product picture quality influences PU, PEOU and PU impact trust and e-satisfaction; trust and e-satisfaction both contribute to loyalty, and e-satisfaction also boosts shoppers' pleasure, which enhances loyalty.

Data Analysis and Results

The data analysis in this study employs a comprehensive approach, including descriptive analysis to examine data characteristics, correlation tests to identify relationships, factor analysis to uncover underlying constructs, and path analysis using SEM to explore both direct and indirect relationships between variables.

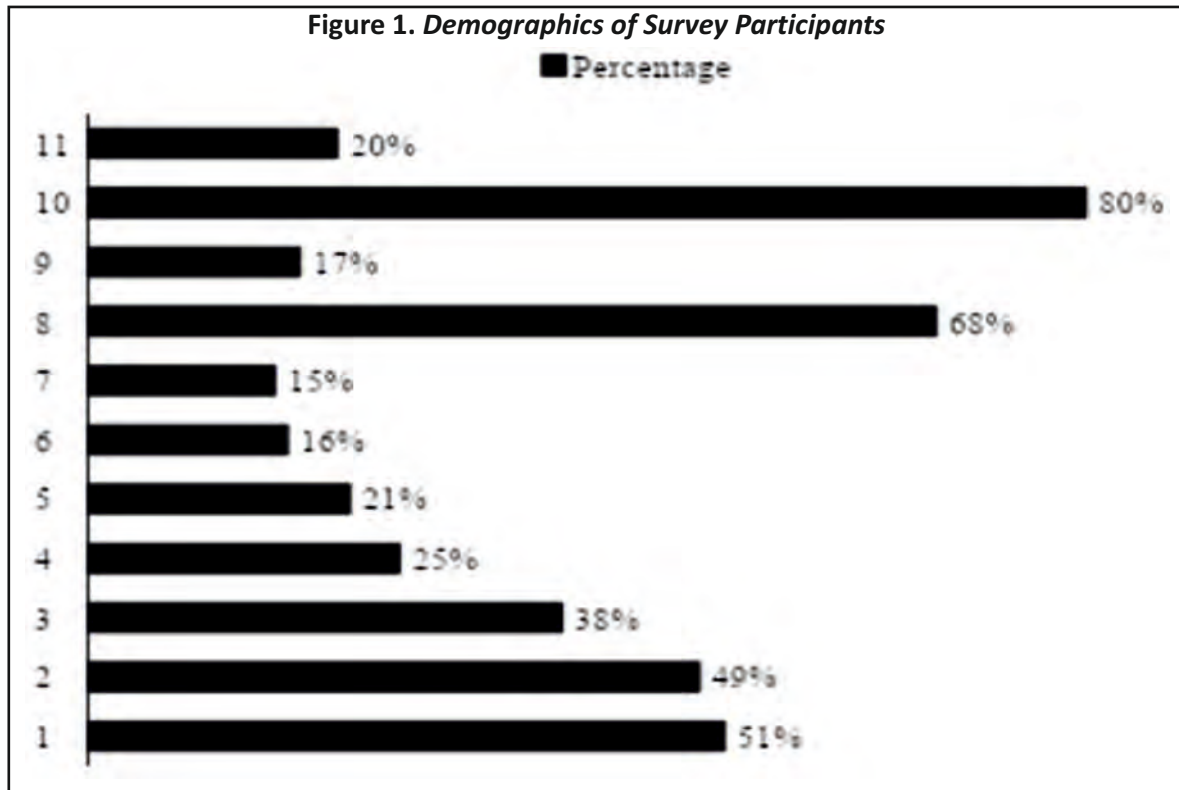
Characteristics of the Sample

Online and offline surveys were used to administer the study's questionnaire in Delhi and Gurugram. A total of 220 valid surveys were distributed.

Table 1 and Figure 1 provide specifics on the participant characteristics. According to the sample statistics, the survey received replies from 220 people, with a relatively equal distribution of genders (49% female, 51% male). The majority of the group (38%) was in the 20–30 age range, followed by the next largest group (25%) in the 31–40 age range. A total of 21% of participants were aged between 41 and 50, while the remaining 16% were over 50. Additionally, 68% of the sample group had a university degree, indicating a well-educated group. Interestingly, 15% of respondents had only completed high school, offering important insights into online consumer viewpoints. Furthermore, an additional layer of analysis was provided, as 17% of respondents held Ph.D. degrees. The participants' employment status indicated that 80% were employed, while the remaining 20% were not working. This dissection offers a representative image of internet users with various work histories.

Table 1. Demographics of the Survey Participants

Variables	Sub-Variables	Frequency	Percentage
Gender	Male	112	51%
	Female	108	49%
Age	20–30 years	84	38%
	31–40 years	55	25%
	41–50 years	46	21%
	Above 50 years	35	16%
Level of Academic	Less than High School	33	15%
	University	150	68%
	Graduate School	37	17%
Job Category	Employed	176	80%
	Non-Employed	44	20%



Descriptive Statistics and Inter-Construct Relationships

The association matrix with mean scores and standard deviations is shown in Table 2. All relationships are positive, demonstrating that higher qualities in a single variable are generally related to higher qualities in the others. The most grounded connection is between E-satisfaction and user shopping loyalty ($r = 0.961, p < 0.001$), recommending that customers who are happier with their internet shopping experience are bound to be faithful to the website. Data entrust additionally has serious areas of strength for it has with different factors, going from 0.745 (website design) to 0.845 (item picture quality). This proposes that customers who trust the data they find on a website are bound to be happy with their experience and are bound to be faithful. The mean qualities for every variable are additionally displayed in the table. Data trust has the most noteworthy mean ($r = 3.263, p < 0.001$),

Table 2. Correlation Matrix

	Information Trust	Product Picture Quality	Website Design	E-Satisfaction	User Shopping Loyalty
Information Trust	1				
Product Picture Quality	0.878	1			
Website Design	0.745	0.785	1		
E-Satisfaction	0.845	0.896	0.874	1	
User Shopping Loyalty	0.761	0.845	0.811	0.961	1
Mean	3.263	0.836	2.963	3.112	2.96
S.D.	0.912	0.845	0.936	0.912	1.023

Note. Significance value: $p < 0.005$.

trailed by e-satisfaction ($r = 3.112, p < 0.001$) and user shopping loyalty ($r = 2.96, p < 0.001$). By and large, customers will more often than not trust the data they find on websites and are, for the most part, happy with their web-based shopping experience. The standard deviations (*SD*) show the fluctuation of every variable. Data trust has the least standard deviation (0.912), showing that customers' degrees of trust will generally be steady. User shopping loyalty has the best quality deviation (1.023), recommending that there is more variety in how steadfast customers are to various websites.

Validation of Measurements

The research model and assumptions were validated by applying SEM. This study conducted a reliability test to ensure the construct's reliability. Reliability is defined as having a reliability coefficient of 0.6 or above. In this manner, a confirmatory factor analysis (CFA) was performed to assess the estimation model utilizing AMOS 23.0. Cronbach's alpha (α) and composite unwavering quality (CR) were used to assess internal consistency or constancy. As can be shown in Table 3, every construct's Cronbach's α is more significant than 0.7, satisfying the accepted criterion advised, and every construct's composite reliability exceeds 0.70, satisfying the recommended threshold. Table 3 displays Cronbach's values ranging from 0.712 to 0.974. This suggests excellent stability and reliability for each construct's measurement items.

The factor 'Website Design Quality' encompasses elements that contribute to the quality of the website design. It includes the website as a brand identity (loading: 0.712), color variations (loading: 0.785), website headers and banners (loading: 0.845), website performance (loading: 0.896), and accessibility (loading: 0.755). The reliability of this construct is high, with a coefficient of 0.789. The factor, 'Product Picture Quality,' is characterized by components related to the quality of product images. It comprises professional image (loading: 0.715), high resolution (loading: 0.821), plenty of images (loading: 0.963), visibility (loading: 0.974), and relevance with the product/s (loading: 0.854). The construct exhibits strong reliability with a coefficient of 0.812. 'Information Trust'

Table 3. Exploratory Factor Analysis

Constructs	Items	Loading	Reliability
Website Design Quality	Website as a Brand Identity	0.712	0.789
	Color Variations	0.785	
	Website Headers & Banners	0.845	
	Website Performance	0.896	
	Accessibility	0.755	
Product Picture Quality	Professional Image	0.715	0.812
	High Resolution	0.821	
	Plenty of Images	0.963	
	Visibility	0.974	
	Relevance to the Product/s	0.854	
Information Trust	Credibility of Information	0.712	0.741
	Security and Privacy	0.699	
E-Satisfaction	User Interface (UI) and Experience (UX)	0.785	0.765
	Transaction Process	0.879	
User Shopping Loyalty	Brand Loyalty	0.844	0.891
	Rewards and Incentives	0.896	

is defined by two main components: Credibility of information (loading: 0.712) and security and privacy (loading: 0.699). The reliability coefficient for information trust is 0.741, indicating good internal consistency. 'E-Satisfaction' is gauged by user interface (UI) and experience (UX) (loading: 0.785) and transaction process (loading: 0.879). This construct demonstrates a reliability coefficient of 0.765, suggesting a high level of reliability. The final construct, 'User Shopping Loyalty,' comprises brand loyalty (loading: 0.844) and rewards and incentives (loading: 0.896). This construct exhibits strong reliability with a coefficient of 0.891.

Test of the Research Model

SEM was used to test the model's validity. The results obtained with Amos 23.0 are as follows: RMSEA = 0.071, $X^2 = 361.23$, $df = 219$, NFI = 0.912, RFI = 0.911, IFI = 0.874, CFI = 0.874, and $df = 219$. E-satisfaction and user shopping loyalty have R^2 values of 66% and 64%, respectively, as shown in Table 4. Thus, the current study indicates that the model is statistically viable based on the findings. Table 4 displays the outcomes of the route analysis for the designated hypotheses.

✎ **H1 :** Ha1 examines the effect of PEOU influenced by the design quality of the website and the quality of product pictures (which increases PEOU), resulting in greater trust and shopping loyalty. The path analysis shows a relationship between the two that is statistically significant, with a coefficient value of 0.448, having a significance value of 0.00. Therefore, the null hypothesis (H01), which reads that website design quality and product picture quality do not increase perceived ease of use to trust and shopping loyalty, is rejected.

Table 4. Path Analysis

Hypothesis	Null Hypothesis	Alternative Hypothesis	Path	Coefficient	Sig. Value	Result
H1	(H01) Website design quality and product picture quality do not positively influence PEOU, which enhances trust and leads to higher shopping loyalty.	(Ha1) Website design quality and product picture quality positively influence PEOU, which enhances trust and leads to higher shopping loyalty.	Website design quality and product picture quality → trust & shopping loyalty.	0.448	0.00	H01 Rejected/ Supported Ha1
H2	(H02) High-quality product images do not enhance PU, which positively impacts e-satisfaction.	(Ha2) High-quality product images enhance PU, which positively impacts e-satisfaction.	High-quality product images → Perceived usefulness → E-satisfaction	0.512	0.03	H02 Rejected/ Supported Ha2
H3	(H03) Product picture quality does not positively influence e-satisfaction.	(Ha3) Product picture quality positively influences e-satisfaction.	Product picture quality → E-satisfaction	0.536	0.02	H03 Rejected/ Supported Ha3
H4	(H04) Website design and product picture quality do not directly increase customer satisfaction.	(Ha4) Website design and product picture quality directly increase customer satisfaction.	Website design quality and product picture quality → Customer satisfaction	0.639	0.03	H04 Rejected/ Supported Ha4

↪ **H2** : H2 assumes that high-quality product images influence PU, and then, it will reflect on e-satisfaction. The path coefficient is 0.512, and its significance is 0.03, which means that there is statistical support for the alternative hypothesis. This shows that the PU by users will increase when there are high-quality images, hence, more e-satisfaction. Thus, the null hypothesis (H02) that there is no positive relationship between high-quality product images and PU, and ultimately to e-satisfaction, is rejected.

↪ **H3** : Ha3 is concerned with the direct effect of product picture quality on e-satisfaction. Path analysis also confirms the hypothesis with a 0.536 path coefficient and a 0.02 level of significance. These findings suggest that high-quality product images can, by themselves, lead to a significant positive influence on e-satisfaction. Hence, we reject the null hypothesis (H03), which states that product picture quality does not positively influence e-satisfaction.

↪ **H4** : Ha4 checks the direct effects of website design and product picture quality on customer satisfaction. The dimensionality analysis resulted in a solid coefficient of 0.639 (significance: 0.03), and this evidence supports the alternative hypothesis. This suggests that a good website and good product images in combination help to improve overall customer satisfaction. Thus, the null hypothesis (H04), which indicates that this factor does not have a direct effect on customer satisfaction, is rejected.

Discussion

The findings of this investigation correspond with and help to develop further the current communication understanding of online consumer behavior and the effect that product images and website design have on consumer satisfaction and trust.

Firstly, the study tends to support the hypothesis that the quality of product images and website design strongly impacts the trust patients have in the information they are provided with, as earlier studies have also shown. Earlier research has also examined the presence of photo-promising in increasing confidence in information on online trading companies, including the quality of images used in advertisements and the aesthetics of website design (Beronius & Andrén, 2017; Qalati et al., 2021). This work supports the assumption that enhanced, aesthetic, and credible product images affect consumer perceptions of information trust.

Second, this paper confirms the prior findings for the positive interrelationship between PIQ, website DQ, and e-satisfaction. Previous research has confirmed that better-quality product pictures and website layouts increase customers' satisfaction and pleasurable online shopping experiences (Chi, 2018; Eneizan et al., 2020). In so doing, the current study provides additional support for these assertions by empirically demonstrating that the dimensions of product image quality and website design quality are critical antecedents to consumer satisfaction in the e-tail environment.

Moreover, this research confirms that the quality of product images is a significant influencer of e-satisfaction, as other investigations have pointed out that eliciting a positive consumer response requires the aesthetic appeal of products (Chi & Sullivan, 2018; Lee et al., 2022). This outcome confirms the significance of high-quality images when developing compelling user experiences in online shopping.

Finally, the study shows that the combined effects of product images and website design on consumer satisfaction confirm previous findings in related research that reported these variables' combined effects. Past research has shown that the proper use of appealing product images and aesthetic website design leads to the enhancement of the levels of consumer satisfaction and the shopping experiences in general (Rosário & Raimundo, 2021).

Managerial, Theoretical, and Policy Implications

Managerial Implications

The findings of this study have direct implications for industry professionals, including e-commerce managers, digital marketers, and website designers. With an increase in digital shopping experiences, businesses must now allocate priority to good website design and high-quality product images that will build trust, e-satisfaction, and loyalty in consumers.

✦ **Improved Website User Experience** : The study underscores the importance of intuitive and aesthetically pleasing website designs. E-commerce managers should invest in user-friendly interfaces, mobile optimization, and seamless navigation to create a positive shopping experience.

✦ **Investment in High-Quality Product Imagery** : The research findings highlight that high-resolution product images significantly impact customer satisfaction and loyalty. Online retailers should allocate resources to professional product photography, 360-degree views, and augmented reality (AR) implementations to enhance customer confidence in PQ.

Theoretical Implications

This research contributes more information regarding digital marketing, e-commerce consumer behavior, and online trust by advancing new insights regarding aesthetics, site design, and usability.

✦ **Bridging the Gap in Consumer Trust Theories** : Prior studies primarily focused on trust determinants like security and reputation; this study expands the theoretical understanding by demonstrating how visual quality impacts consumer trust and engagement.

✦ **Integration of Design and User Experience in E-Commerce Theories** : The study adds to the discourse on technology acceptance and consumer behavior by integrating website design quality and product image clarity as key antecedents of e-satisfaction.

Policy Implications

The study holds important policy implications for regulatory bodies and industry standards in the e-commerce domain:

✦ **Standardization of Digital Product Representation** : Regulatory agencies may consider imposing guidelines on product imagery, with the goal of prohibiting misrepresentative practices and ameliorating consumer protection.

✦ **Accessibility Compliance in Website Design** : Given the importance of website aesthetics, policymakers should advocate for inclusive designs catering to diverse populations, including individuals with disabilities, through adherence to the web content accessibility guidelines (WCAG).

Practical Implications for Marketers

Using the study's findings, digital marketers can develop targeted strategies to optimize online shopping experiences, particularly in multicultural markets:

✦ **Personalized Visual Marketing :** Marketers can leverage AI-driven image personalization to present culturally and regionally adapted product images for different consumer segments.

✦ **Interactive Media Adoption :** Implementing technologies such as 3D product previews and AR can help bridge the gap between physical and digital shopping experiences for customers.

The present research, linking the outcome with past theories and studies, contributes significantly to existing theories and explains how visual elements drive consumer loyalty in digital commerce. It also offers useful recommendations for both scholars and practitioners in the industry.

Conclusion

The study explores the dynamics of online consumer behavior, emphasizing the relationships between user loyalty, information trust, e-satisfaction, product picture quality, and website design quality. Significant correlations were found between the variables under study when 220 survey responses were from Delhi and Gurugram residents of various demographic backgrounds. The results highlight how important information trust is and how product image quality and website design work together to shape e-satisfaction and, in turn, customer buying loyalty. The findings support the significance of a smooth online experience, wherein consumer pleasure and loyalty are significantly increased by the veracity of information and the attractiveness of product photos and website design.

Limitations of the Study and the Way Forward

It is equally important to acknowledge several limitations that must be considered in the context of the various relationships analyzed in this study. The association between user loyalty, information trust, e-satisfaction, as well as product picture quality and website design quality for the online consumer behavior analysis of this study has been limited by the following challenges:

✦ **Potential Response Bias :** The study used self-report measures, which means that the collected data contained some response bias and subjectivity. There is a likelihood that the participants' reactions and responses were biased by their perception. However, the results are notions of the audience posed in the question.

✦ **Measurement Limitations :** The study used a survey method to collect data, which may be subject to measurement limitations. Therefore, the accuracy and reliability of the collected data depended upon participants' interpretation, which potentially introduced measurement errors. The study initially used Harman's single-factor test, where no single factor emerged to explain the majority of the variance, indicating that CMB was not a major threat. However, we acknowledge the limitation of using this test alone. To enhance methodological rigor, we also examined variance inflation factors (VIFs) for each construct, and all values were below the critical threshold of 3.3, further suggesting minimal bias. Future studies may consider more robust procedures such as the marker variable technique or the CFA marker approach.

Future Scope of the Study

There are numerous directions that this field of study could go in the future. First, investigating how new technologies, like virtual and AR, affect online customer behavior may yield insightful information. Furthermore, examining the impact of cultural variables on how people perceive product photos and website designs could lead

to a more sophisticated understanding, particularly in multicultural marketplaces. Furthermore, it would be imperative to research how changing trends, including social and mobile commerce, affect customer preferences and behavior as the e-commerce industry develops.

Authors' Contribution

Rashmi Sharma conceived the idea, conducted the experiments, and analyzed the data. Dr. Sachin Datt contributed to conceptualizing the paper's concepts and some of its analysis. He had proofread every element to ensure accuracy, so there would be no mistakes in providing accurate research-related information. Dr. Kanika Sachdeva verified the analytical methods of the study and provided critical revisions to the manuscript. Rashmi Sharma conducted the data collection through an online questionnaire. All authors read and approved the final version of the manuscript.

Conflict of Interest

The authors certify they have no affiliations with any organization in the subject matter or materials discussed in this manuscript.

Funding Acknowledgment

The authors received no financial support for the research, authorship, or publication of this research paper.

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