

An Informatics-Based Analysis of Consumer Trust, Website Design, and E-Commerce Logistics in Nepal

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Abstract. As a result of the expanding digital ecosystems, it is necessary to examine informatics-driven factors of e-commerce platforms and their influence on consumer attitudes. This research examined the interface design, transaction security, system convenience, and time-saving mechanisms' effects on consumers' attitudes toward online purchasing in Nepal. A sample of 384 respondents, which included students, people living in households, and office staff from the Kathmandu Valley, was used for this research, with a structured survey being the instrument of data collection. Data were analyzed using the Analysis of Moment Structure (AMOS) and the Statistical Package for Social Sciences (SPSS). To assess model fit and test the hypothesized relationships, Structural Equation Modeling (SEM) was used. According to the results, the independent variables, in total, accounted for 66.0% of the variance in attitudes towards online purchasing of consumers. Among the factors, website design and system usability stand out as the most influential predictors ($\beta = 0.462$, $p = 0.000$), followed by time-saving features ($\beta = 0.451$, $p = 0.000$), thus reinforcing the importance of user-centered interface design in determining digital purchase behaviors. However, on the contrary, convenience ($\beta = -0.099$, $p = 0.000$) and perceived security ($\beta = 0.144$, $p = 0.000$) had minor or negative impacts. It is deduced that the users who have more trust in the technology feel that there are fewer or no security and convenience problems. These findings from informatics and service science point out that e-commerce platforms should focus on user-friendly interface design, reliable data protection measures, and trust-building design features in order to maximize user experience and retain the ever-growing digital consumer base in the developing markets.

Keywords: Convenience, Security, Time Saving, Website Design/Features.

1. Introduction

The global emergence of e-commerce has been facilitated by the pervasive adoption of online networks and the rapid advancement of digital technologies, which have transformed customer marketing behavior. Online shopping has gained significant adherence globally as the usage of the Internet and smartphones continues to grow. E-commerce has become increasingly popular in Nepal as more people rely on online platforms for shopping and making purchases. Most analysts believe the global electronic marketplace will significantly influence trade in the twenty-first century (Rehman, 2025; Singh, 2025). Various elements, including technological connectivity, trust in digital platforms, cultural preferences, and economic considerations, shape consumer behavior in online purchasing (Dahal, 2022). The transition to online buying in Nepal is gradual, shaped by entrenched traditional business practices and impacted by digital literacy, payment infrastructure, and logistical issues. Comprehending these elements is essential for enterprises intending to leverage the expanding e-commerce sector and for policymakers striving to establish a conducive business environment for digital commerce (Khadka et al., 2024).

Figure 1 illustrates the idea of e-commerce as a closed-loop informatics ecosystem, wherein data flows between system functions and user experiences in an uninterrupted manner to facilitate adaptive learning, the enhancement of trust mechanisms, and the design of efficient digital services.

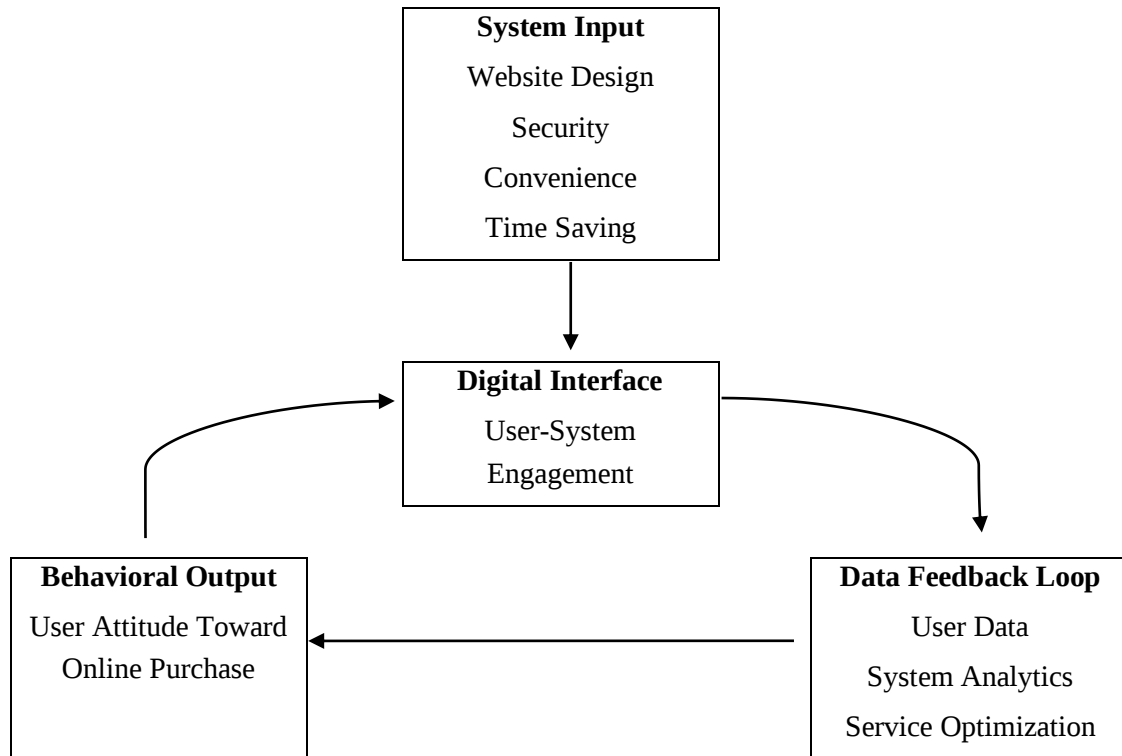


Fig. 1: Informatics Framework

To get people's attention online, businesses need to know how their customers think, act, and what they have done in the past (Chiu et al., 2005; Rai & Dahal, 2024). E-commerce has become the most common way to do business around the world (Li & Zhang, 2002), turning traditional markets into lively digital spaces. Customers now buy things online using connected digital systems that let them access, compare, and decide what to buy. Smith and Rupp (2003) said that the rise of e-commerce is one of the most important results of new information technology. This informatics architecture not only helps improve the user experience by making the interface more secure and easier to use, but it also lets you use predictive analytics to improve customer engagement, find fraud,

and deliver personalized service. It gives customers access to a wide range of vendors, products, and services that they have never had before. Online shopping has become an everyday digital activity beyond just looking for products and learning about them (Joines et al., 2003; Karki et al., 2024).

Prior research has recognized internet proficiency, income, and educational attainment as critical factors influencing online purchasing behavior (Burns et al., 2001). Every interaction, from logging in to making a payment, creates transactional and behavioral data that platforms use to make decisions that change over time. In order for businesses to do well in this environment, a good online marketing plan must find and deal with the psychological and technological factors that affect online shoppers (Huseynov & Yildirim, 2016). Many users are drawn to lower prices and convenience (Pilk et al., 2017), but older consumers are more interested in reliability and ease of access. E-commerce companies also need to build digital trust because customers often talk about their shopping experiences on social media and in online communities (Kim & Park, 2013; Bandara et al., 2020; Rai et al., 2022). From the standpoint of digital informatics and service systems, e-commerce is a complicated, data-driven service ecosystem with constant information flow, algorithmic personalization, trust mechanisms, and real-time system coordination. The reputation and perceived integrity of a website are often important factors in how much people engage with it and how loyal they are.

Online shopping in Nepal has shown substantial growth and represents an emerging industry (Lamichhane et al., 2025). The market has evolved, and new rivals have emerged. The demand and diversity of services in the B2C e-commerce business are developing in a dynamic environment. In these systems, digital convenience, payment security, and interface usability are all service informatics variables that together affect how people act and how much they trust a service.

The development of numerous new participants has rendered the Nepalese retail industry one of the most active and quickly changing businesses. After digital platforms got better and the internet became more popular, particularly the acceptance and rapid use of smartphones and laptops (Okur & Saricam, 2025), the dynamics between vendors and consumers have undergone a significant transformation. Now, retailers are shifting from the conventional brick-and-mortar model to the click-and-mortar framework as the general populace increasingly embraces online platforms (Jindal, 2016). This study's distinctive contribution is the amalgamation of behavioral analysis and informatics modeling to evaluate the impact of system-level design elements, such as website interface, time efficiency, and digital security, on online purchasing attitudes in Nepal. This research situates e-commerce within a digital service science framework, enhancing comprehension of how user experience, data infrastructure, and trust mechanisms converge to influence the overall efficiency and sustainability of e-commerce platforms in emerging markets such as Nepal.

This research is intended to examine the influencing factors of consumers' online purchasing decisions in Nepal, capturing the drivers and issues determining consumer behavior in this developing industry. It offers unique insights into the dynamics of online purchasing in Nepal by analyzing price sensitivity, product quality, social influence and trust, and logistical support. The study's findings enhance the present literature on e-commerce in developing nations like Nepal and provide knowledge for e-commerce enterprises, marketers, and legislators. Stakeholders can foster a more robust and inclusive digital economy by dealing with the problems and taking strategic action. The present study comprised an introduction, an overview of the literature, research methodologies, results and analysis, a discussion, and a conclusion emphasizing the study's analysis.

2. Literature Review

The rapid progress in internet access and smartphone use has considerably facilitated the rise of online business habits among individuals. Studies have identified several factors influencing informatics-mediated purchasing behaviors, particularly in developing countries. Gupta and Singh (2021) observed that accessibility, convenience, and promotions offered by online platforms are primary determinants of online shopping decisions in developing economies. Social networking and peer recommendations progressively impact online purchasing decisions, particularly among younger customers. Thapa's (2022) study emphasized Facebook and Instagram are two instances of social media sites that have an impact on e-commerce trends in Nepal. Demographic and cultural factors significantly influence online purchasing decisions. In Nepal, conventional buying practices are firmly established, and older generations exhibit a reluctance to embrace online shopping, in contrast to younger generations.

Studies underscore the necessity of customizing e-commerce techniques to conform to local cultural norms and preferences. Similarly, Nitinkrishna (2025) noticed that smartphones are the preferred device for online shopping, with electronics and fashion being the most popular categories, especially during the festive season. Tang and Chen (2025) revealed how digital device recycling platforms (DDRPs) were affected by the perceived legitimacy of assured data eradication services. According to their findings, trust in safe data deletion reduces privacy issues while enhancing the DDRPs' perceived environmental advantages and ease of use, which is why their usage is encouraged. Noor et al. (2025) examined the performance of digital enterprises run by young entrepreneurs and noticed that smartphone utilization of social media influences the relationship among social support, government support, and self-efficacy on business outcomes (Noor et al., 2025).

Digital Informatics and Consumer Trust Systems

Zhang et al. (1999) elucidated that the attributes of a website's design might serve as a motivational aspect that influences attitudes towards the website, either positively or negatively. Liang and Lai (2000) found that the quality of web design has a substantial impact on a consumer's decision to purchase from an online retailer. Kamariah and Salwani (2005) discovered that an elevated level of website quality is associated with a higher likelihood of making online purchases. Yasmin and Nik (2010) noticed a correlation between the features of websites and the manner in which individuals make online purchases. Rohm and Swaminathan (2004) revealed that consumers can save time by purchasing online, as they are not required to visit traditional stores. On the other hand, some survey participants viewed the time spent waiting to deliver goods or services when making online purchases as an issue. According to Ha and Janda (2012), the ultimate intent to influence the purchase of a particular product was highly dependent on the individual's beliefs. Their study indicated that individuals with an optimistic attitude toward online media influencers seemed more likely to buy the endorsed product. Additionally, the research conducted by Ha and Janda (2012) and Lopez-Mosquera et al. (2014) demonstrated that attitude has a positive impact on purchasing intentions.

Ngudup et al. (2005) presented their findings on electronic commerce and asserted that it had fundamentally and qualitatively altered how businesses and nations produce, trade, and compete. Lim et al. (2017) observed that enterprises seek influential social media personalities to generate buzz in newer demographics and increase their social media platforms. Concurrently, Ghimire et al. (2022) and Vaidya (2019) noted that user-friendly and interactive purchasing apps are paving the way for online stores to grow like never before. Here, in the context of Nepal, as the cost of technological goods, internet services, and internet connectivity has fallen, Nepalese consumers are increasingly inclined to engage in online purchasing (Vaidya, 2019). Gruntkowski and Martinez (2022) found that perceived risk continues to influence purchase intentions negatively, rendering online grocery shopping relevant as a risk factor.

Website Interface Design and User Experience Informatics

In contrast to the pre-COVID-19 situation, consumers' sense of risk has diminished. Online retailers should use the research's findings to minimize perceived risks and convey to customers the advantages of shopping online. Modi and Singh (2023) recognized graphical user interface features affecting visual attention. Their study revealed an association between graphical user interfaces and user focus. The study also identified gender differences in visual preferences for several graphical user interface components. Designers of e-commerce websites may use these design elements to increase online users' perceptions of trust and security. In the context of e-commerce, Panwar and Sahoo (2025) examined digital purchasing behavior among farmers in rural India, focusing on smartphone penetration. Their research found that young farmers, who are already well-known with smartphone applications, are driving up e-commerce adoption, primarily in semi-urban and urban areas. Despite challenges such as low digital literacy in remote areas, smartphones improve access to agricultural inputs, pricing, and market connectivity, thanks to government initiatives that promote digital literacy.

Security, Payment Infrastructure, and Digital Logistics Systems

Rajendrakumar (2022) examined how consumer and marketer assertions affect internet purchasers. Security, privacy, convenience, time savings, customer reputation, pricing, customer service, product promotion, and simplicity predict online shoppers' sentiments. Saleem et al. (2022) discovered that online purchasing intentions are influenced by perceived consciousness of safety, perceived utility, perceived convenience of use in purchasing, and personal innovativeness. Additionally, consumer views toward online purchasing mediate these effects. Moreover, detrimental elements such as rumors and risk considerations might directly affect online businesses. Dixit et al. (2023) asserted that demographic parameters substantially influence consumer behavior during online purchasing. When consumers connect the symbols used by endorsers to the brands, they can promote and spread the meanings of those brands, which can lead to more sales of those brands (Dahal et al., 2023; Escala & Bettman, 2005; Sharma et al., 2023). Hossain et al. (2025) emphasized that small and medium-sized businesses in Bangladesh must establish internet connectivity and effectively manage their business data to embrace e-commerce. Smartphones were particularly significant during the COVID-19 pandemic. Smartphones are increasingly essential for digital engagement, including survey responses, e-commerce, and recycling platforms, with negligible negative impact on data quality and significant potential to bridge digital divides, particularly in rising markets.

Time-Saving and Digital Efficiency as Dimensions of Service Informatics

Giningroem et al.'s (2023) study examined how convenience motivation, consumer experiences, saving time orientations, and cost-saving orientations affect behavior. The study found that customer experiences, saving time, and cost-saving exposure strongly influence grab-and-go consumption. Other studies on online purchasing decisions, like by Karim (2013), Savarimuthu and Devi (2016), and Rai et al. (2023), found that time savings were the most crucial factor favoring online shopping. Further, convenience motivation moderates the relationships between consumers' prior experiences, the value of saving time and money, and their actual grab-and-go food consumption habits. Cotte et al. (2006) carried out studies on the consumer behavior of internet users, identifying four primary groups, each characterized by unique objectives and motivations: exploration, amusement, shopping, and information seeking. Berger et al. (1994) and Kim and Hunter (1993) observed and provided empirical evidence for the correlation between attitude and behavioral intentions. A customer's perceived value is subjective, as it encompasses an assessment influenced by various factors that affect the importance of the value received by the consumer (Dahal, 2021; Ruiz-Molina et al., 2008; Shrestha et al., 2023). Darian (1987) said that online shopping has many benefits when it comes to convenience, such as saving time, being flexible, and not having to do much physical work.

Several theoretical frameworks have served as the foundation for the evaluation of online buying behavior. The Technology Acceptance Model (TAM) has been widely utilized to investigate how perceived usefulness and simplicity of use affect the adoption of online purchases (Davis, 1989). The Theory of Planned Behavior (TPB) has been utilized in research to examine how attitudes, subjective norms, and perceived behavioral control influence people's intentions to make online purchases (Ajzen, 1991). The Reasoned Action Theory (RAT) states that consumer attitude affects purchasing behavior (Ajzen & Fishbein, 1980). This theory posits that a person's perspective and subjective standards influence their intentions, which in turn determine their behavior. A customer's loyalty to a specific retail institution indicates that their mindset and behavior align with the institution's values. Based on the theoretical and literary research, the study's conceptual framework is depicted in Figure 2. The research framework is based on the informatics-driven service system model, which sees e-commerce platforms as data-driven ecosystems where consumer behavior, technology, and trust mechanisms are constantly changing.

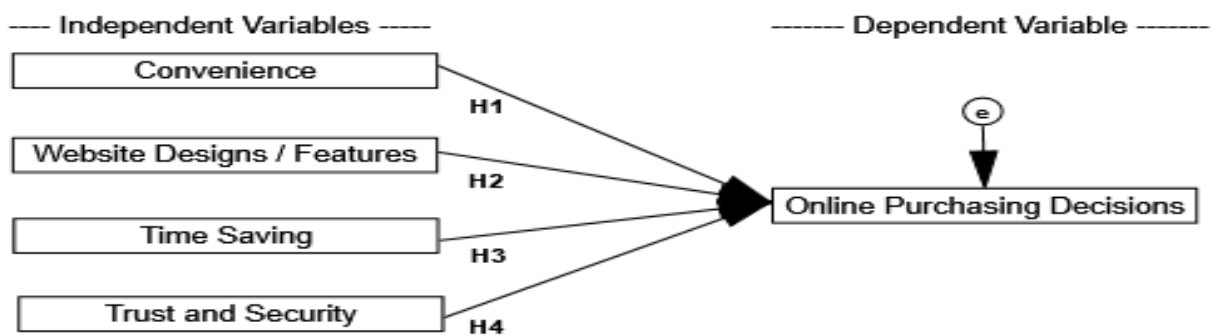


Fig. 2: Conceptual Framework

Study hypotheses:

- H1: Convenience positively and significantly influences customers' decisions to make online purchases.*
- H2: The features and appearance of websites significantly and positively influence customers' online buying decisions.*
- H3: Time savings positively and significantly impact customers' decisions to make online purchases.*
- H4: Customers' decisions to make purchases online are favorably and significantly impacted by trust and security.*

3. Methodology

The study employs a digital informatics modeling methodology to examine the impact of system-level variables, including interface design, payment security, and digital convenience, on consumers' online purchasing attitudes. This method combines behavioral science with service informatics by modeling how people and technology systems interact with each other in real time. Descriptive and causal-comparative research design to investigate the cause-and-effect relationships between the variables under investigation.

Population and Sampling Method

The study's target audience consisted of internet consumers residing in the Kathmandu Valley, the capital of Nepal. The study collected 384 responses from online shoppers utilizing the convenience sampling method and the Krejcie and Morgan table (Krejcie & Morgan, 1970).

Data Collection Instrument

Primary data were collected using an informatics-enabled online survey designed to ensure digital efficiency, accuracy, and traceability. A survey questionnaire consisting of 22 questions organized into three sections was developed to be used as the data-gathering instrument. The initial section featured three queries about the respondents' demographics; the second section contained 15 questions about the study's independent variables, and the final section had four questions to measure the informatics-mediated purchasing behaviors. The required independent and dependent variables data were obtained by means of a six-point Likert-type scale.

Data Collection Procedure

The survey form in English and Nepali was employed to gather primary data for the study. A data collection was conducted through an online survey utilizing Google Forms. Seven hundred fifty survey questionnaires were distributed from July to December 2024 across various social media platforms, yielding 384 valid responses compiled in the Statistical Package for the Social Sciences (SPSS). Data analysis integrated statistical and informatics viewpoints. We used the Statistical Package for Social Sciences (SPSS) for descriptive analysis and preliminary diagnostics. We used the Analysis of Moment Structure (AMOS) software to do inferential testing using Structural Equation Modeling (SEM). SEM allowed for the simultaneous assessment of various interdependent relationships, yielding a comprehensive perspective on how informatics-driven features influence user attitudes.

Respondents' Demographics

The demographic personal information of the 384 survey respondents who shared their opinions for the study is revealed in Table 1.

Table 1. Respondents' General and Demographic Information

	No of the respondents	%		No of the respondents	%
<i>Respondent's sex:</i>			<i>Age Group:</i>		
Male	185	48.2	20 – 30 Yrs.	219	57.0
Female	199	51.8	30 – 40 Yrs.	87	22.7
<i>Highest Education Completed</i>			40 – 50 Yrs.	57	14.8
High School	92	24.0	50 Yrs. and above	21	5.5
Under Graduate	174	45.3			
Graduate and above	118	30.7			
Total	384	100.0	Total of each section	384	100.0

Preliminary Test

Exploratory factor analysis was performed with 19 observed variables to find their association and explore the latent variables. Individual observed variables' loading of more than 0.5, as suggested by Hair et al. (2018), which was considered while defining the respective latent variables. The resulting item loadings into the respective latent variables are illustrated in Table 2.

Table 2. Observed Variables' Loadings and the Latent Variables

Rotated Component Matrix ^a				
Component				
(1)	(2)	(3)	(4)	(5)

	Convenience [CON]	Web Design/ Features [WD/F]	Time Saving [TS]	Trust & Security [T & S]	Online Purchasing Decisions [OPDs]
On-time Delivery	0.870				
Allows Comparison	0.851				
Simplify Product Search	0.700				
User-friendly		0.746			
Can Buy Items 24/7		0.682			
Facilitate Product Selection		0.675			
Faster and Less Time- Consuming			0.742		
Doesn't Waste Time			0.759		
Easier to Select Products			0.735		
Safe and Secure				0.584	
Protects My Security				0.686	
Likes a Trustworthy Website				0.753	
Usually Browses Online Sites					0.534
Mail Ads Often Ignored					0.746
Exploring New Trends on Sites					0.652
Attraction of Online Ads					0.682

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

The analysis indicated that VAR_4 (Detailed and Informative), VAR_10 (Minimize Shopping Risk), and VAR_11 (Informed Well) were excluded due to each of their scale item loadings being below 0.50. Researchers conducted a reliability assessment utilizing Cronbach's alpha based on the observed and newly established latent variables. The alpha values were CON = 0.834, WD/F = 0.716, TS = 0.706, T & S = 0.736, and OPDs = 0.739. All alpha values were above the criterion of 0.70, as proposed by Nunnally (1993). The common method bias (CMB) of the variables was evaluated utilizing the Harman single-factor test, as indicated by Podsakoff et al. (2003). The 16 maintained variables, detailed in Table 2, demonstrated a single-factor variation of 30.565%, falling short of the 50% threshold suggested by Cho and Lee (2011). As a result, 16 observable variables pertaining to five latent variables were submitted for further study.

Validity of the Data

The study employed the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity to assess the external validity of the study. The KMO score of 0.822, exceeding the recommended threshold of 0.5 (Kaiser, 1974), along with the Bartlett's test results (Chi-square = 1797.232, df = 105, Sig. = 0.000), indicated that the data were robust. Table 3 shows how well the latent variables work together and how well they work apart.

Table 3. Internal Validity Statistics

Constructs	Convergent validity			Discriminant validity				
	No of the observed variables	CR (Construct Reliability)	AVE (Average Variance Extracted)	The square root of AVE (in bold) and Inter-construct correlation				
				CON	WD/F	TS	T & S	OPDs
Convenience [CON]	3	0.851	0.657	0.811				
Web Design/ Features [WD/F]	3	0.751	0.501	0.509**	0.708			
Time Saving [TS]	3	0.789	0.556	0.149**	0.333**	0.746		
Trust & Security [T & S]	3	0.716	0.460	0.364**	0.337**	0.280**	0.678	
Online Purchasing Decisions [OPDs]	4	0.751	0.433	0.283**	0.488**	0.483**	0.366**	0.658
Threshold value	-	≥ 0.700	≥ 0.400	AVE's Square Root > Inter-construct Correlations				
Recommended by:	Fornell & Larcker, 1981		Bagozzi & Baumgartner, 1994		Fornell & Larcker, 1981			

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3 presents the test results, indicating that all latent variables met the criteria for discriminant and convergent validity and were approved for continuation.

4. Results and Analysis

The study employed confirmatory factor analysis, structural equation modeling, and route analysis to ascertain the statistical significance of the proposed pathways and to assess the model's predictive efficacy, yielding numerous correlation coefficients for each latent variable. Figure 3 illustrates the standardized estimates and the adequacy of the model's fundamental assumptions.

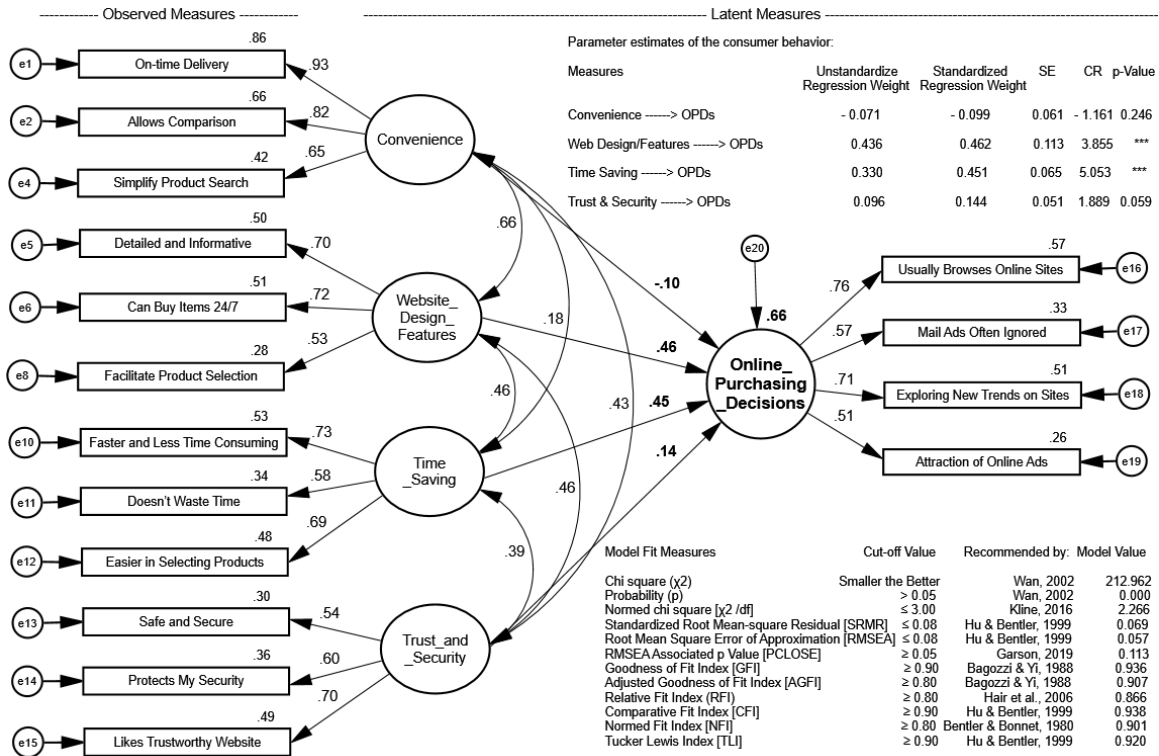


Fig. 3: The Study Model

The model of the study demonstrated an acceptable level of fit ($\chi^2 = 212.962$; $p = 0.000$; χ^2/df

= 2.266; SRMR = 0.069; RMSEA = 0.057; PCLOSE = 0.113; GFI = 0.936; AGFI = 0.907; RFI = 0.866; CFI = 0.938; NFI = 0.901; TLI = 0.920), with all indices falling within the recommended limits. 'Online purchasing decisions' was the dependent variable, and 'convenience,' 'web design,' 'time saving,' and 'trust and security' were the independent (causal) factors that were used to evaluate the model. The model's results indicated that independent variables accounted for approximately 66.0 percent of the variation in the customer's attitude toward online purchasing in Nepal. Table 4 shows the status of each hypothesis compared to the study's hypotheses.

Website Design and User Interface Informatics

It has been found that website design and features significantly impact consumer attitudes, highlighting the importance of user interface informatics in influencing digital engagement. In informatics, the website interface is the main layer of interaction between people and systems. The way information flows, is structured, and is shown affects how people think and feel. A well-organized interface lowers information entropy, makes it easier to find your way around, and speeds up the sharing of product and transaction information. This is in line with service system theory, which says that interface design is a way to connect data architecture and user experience. When users think an interface is easy to use, responsive, and looks good, they see the platform as trustworthy and well-run. This makes them more likely to trust it and buy something. So, using adaptive layout algorithms, responsive design, and data visualization to make digital interfaces better can directly make users happier and keep them coming back.

Saving Time and Making Digital Logistics Work Better

The strong effect of saving time shows that people are becoming more aware of how efficient services are, which is a key idea behind informatics-driven logistics optimization. Automation, real-time data synchronization, and smooth transaction flows all help save time in digital commerce systems. These features make the system easier for users to use and understand, which makes it seem more valuable and reliable. From an informatics point of view, time-saving means that information processing is done quickly, and backend algorithms, database management, and server response times all affect how fast service is delivered. This means that e-commerce sites in Nepal can improve how customers feel about them by putting money into digital process optimization, like AI-based recommendation systems, predictive order tracking, and one-click payment systems. Efficient digital logistics not only makes people happier, but it also builds informational trust, which is the belief that the system can deliver results quickly and reliably.

Security and the Development of Informatics Infrastructure

Even though security was thought to be a significant factor, the results showed that it had a weak or no effect on how consumers felt. This pattern shows that the informatics infrastructure in developing digital ecosystems like Nepal is still not very advanced. Users often do not fully understand data security protocols or depend on outside payment systems (like e-wallets and third-party gateways) for peace of mind. From an informatics point of view, this finding means that perceived trust is still based on the interface and not on the data. People may think that a website design that looks trustworthy is safe, even if it does not use encryption or authentication. This dependence on superficial trust cues shows how important it is to improve visible and verifiable security informatics, such as multi-factor authentication, clear privacy dashboards, and notifications of fraud in real time. Improving back-end cybersecurity and clearly explaining these measures can slowly change how users trust the system from perception-based to system-based.

Limitations of Convenience and Contextual Informatics

The adverse or limited effect of convenience indicates that the perceived simplicity of online transactions may not have yet resulted in attitudinal confidence among Nepalese consumers. When building e-commerce ecosystems, convenience is often limited by contextual informatics barriers like

inconsistent internet access, low digital literacy, and broken payment systems. These structural problems make the digital journey seem less smooth, which hurts convenience as a way to build trust. This finding underscores the significance of integrated service informatics, wherein cross-platform data sharing, consolidated payment gateways, and adaptive customer service interfaces can facilitate truly seamless digital experiences.

Effects on the System Level

When looked at as a whole, these results show that user interface informatics and digital efficiency are the most important factors that affect how people feel about buying things online. On the other hand, trust in informatics and service integration is still not very well developed in Nepal's e-commerce infrastructure. The research substantiates that behavioral outcome, favorable attitudes towards online shopping are influenced by the quality of digital system design and data integration, rather than solely by marketing stimuli. For professionals, it is clear: putting money into informatics-driven design, backend automation, and clear security communication can make systems more trustworthy and keep customers coming back. The results suggest that policymakers and developers need to work on making data interoperable, improving digital literacy, and building trust in order to make Nepal's digital commerce ecosystem stronger.

Table 4. Status of the Hypotheses

Statements	Outcome	Remarks
H1: <i>Convenience positively and significantly influences customers' decisions to make online purchases.</i>	$\beta = -0.099$; $p = 0.246$	Rejected
H2: <i>The features and appearance of websites significantly and positively influence customers' online buying decisions.</i>	$\beta = 0.462$; $p = 0.000$	Accepted
H3: <i>Time savings positively and significantly impact customers' decisions to make online purchases.</i>	$\beta = 0.451$; $p = 0.000$	Accepted
H4: <i>Customers' decisions to make purchases online are favorably and significantly impacted by trust and security.</i>	$\beta = 0.144$; $p = 0.059$	Rejected

The convenience of online purchasing in Nepal had a negative and insignificant effect on user perception in digital service environments, as indicated by Table 4 (H1 was not supported). Conversely, the investigation demonstrated that the web design and attributes of online purchasing in Nepal had a substantial and advantageous impact on customers' perspectives (H2 was substantiated and approved). Furthermore, the customers' attitude was significantly influenced by the significant time savings that online purchasing provided, as evidenced by the fact that H3 was both supported and accepted. Lastly, the absence of trust and security in online shopping in Nepal did not have a substantial impact on consumers' online purchasing decisions (H4 was not supported).

5. Discussions

Recent studies have shown how choosing the right device type affects digital behavior and data quality in a range of settings. Given the circumstances of e-commerce, Panwar and Sahoo (2025) explored digital purchasing behavior among farmers in rural India, focusing on smartphone penetration. Their findings revealed that young farmers, who are already well-known with smartphone use, are driving e-commerce adoption, specifically in semi-urban and urban-adjacent areas. Despite challenges such as low digital literacy in remote areas, smartphones improve access to agricultural

inputs, pricing, and market connectivity, thanks to government initiatives that promote digital literacy. Similarly, Nitinkrishna and Babu (2025) discovered that smartphones are the preferred device for online shopping, with electronics and fashion being the most popular categories, particularly during the holiday season. These findings are in line with the Technology Acceptance Model (TAM), which postulates that technology adoption is influenced by perceived utility and ease of use (Davis, 1989). Smartphones, with their user-friendly interfaces and widespread availability, make e-commerce adoption easier by lowering entry barriers, especially in emerging markets.

Tang and Chen (2025) assessed the impact of perceived credibility on guaranteed data destruction services offered by digital device recycling platforms (DDRPs). According to their findings, confidence in secure data deletion lowers privacy concerns while raising the perceived ease of use and environmental advantages of DDRPs, which promotes their adoption. This conclusion is in line with the Theory of Planned Behavior (TPB), which maintains that attitudes and perceived behavioral control influence intentions (Ajzen, 1991). The perceived credibility of DDRPs influences positive attitudes toward recycling, mitigating privacy concerns that might otherwise deter participation, as noted by Bhatnagar and Ghose (2004), who identified security as a barrier to online engagement. In contrast, this study discovered that in contexts such as Nepal, where online shopping is still developing, security concerns may be less pronounced due to limited exposure to online risks (Chowdhury, 2023; Dahal et al., 2025). Additionally, Noor et al. (2025) looked into how well young entrepreneurs performed in digital business and found that the impact of social media adoption—which is made possible by smartphones—modifies the effects of self-efficacy, social support, and government assistance on business success. Smartphones were crucial during the COVID-19 epidemic, and Hossain et al. (2025) demonstrated the importance of internet access and business data management for e-commerce adoption in Bangladesh's small and medium-sized businesses. These findings support the Reasoned Action Theory (RAT), which posits that subjective norms and consumer attitudes influence purchase behavior (Ajzen & Fishbein, 1980). Smartphones' convenience and accessibility boost social media engagement and e-commerce, especially among younger demographics, resulting in digital business growth.

Contrary to popular belief, some research indicates that opinions toward internet shopping are not usually significantly influenced by convenience. Chowdhury (2023) discovered that convenience and quality influenced attitudes toward online food delivery in Bangladesh, but the study found no significant relationship between convenience and attitudes in Nepal. Similarly, Saleem et al. (2022) discovered that perceived security, utility, and ease of purchase were important, but convenience had no significant influence on online purchasing intentions. This study supports these findings, implying that in Nepal, where online shopping is new, consumers may value website features such as detailed product information, user-friendly interfaces, and secure payment options over convenience (Vaidya, 2019). Furthermore, time savings emerged as a significant factor influencing attitudes toward online shopping, which is consistent with Kopot and Reed (2023) and Giningroem et al. (2023), who established that perceived time and cost savings drive consumer behavior in digital contexts.

Security remains a critical concern, though the impact varies depending on the context. Barriers to online purchasing were identified by Bhatnagar and Ghose (2004) and Trocchi and Janda (2003) as financial and non-financial security concerns, including data privacy and transaction security. However, this study discovered that security has an insignificant effect on attitudes toward online shopping in Nepal, most likely due to the low prevalence of online fraud and lower exposure to digital risks. This differs from Cuneyt and Gautam (2004), who attributed increased trust in online shopping to advances in internet security. Results indicate that, while smartphones play an important role in increasing digital engagement across surveys, e-commerce, and recycling platforms, contextual factors such as digital literacy, market maturity, and perceived security shape their impact. Future research should look into how these dynamics shift as digital ecosystems mature in emerging markets.

6. Conclusion

The study found that "website design" significantly affected attitudes toward online purchases in Nepal. Companies need to make their websites less complicated and more user-friendly for customers to visit them. It should encourage online shoppers to browse the site and compare pricing online, provide in-depth product information, and offer discounts to site members. Thanks to the development of technology, consumers can now give reviews or comments on virtually any e-commerce website, blog, or other website using a variety of devices they already own. Consumers now have an easier time expressing their ideas online due to the proliferation of social networking and smartphone use. In this context, marketers must be ready to understand the impact of websites on influencing consumers' purchase intentions. Gradually, consumers in Nepal are adapting to online shopping through their websites, so business managers and firms must be motivated to develop websites as an essential platform for exchange. The website's design and features should be both user-friendly and visually appealing. If handled and appropriately maintained, time-saving designs and additional features in online services can improve service and help to form customers' strong attitudes towards online purchases.

Similarly, this study found that "time-saving" significantly influenced attitudes toward online purchases in Nepal. Online agents can assist customers, who can streamline the purchasing process to make the consumer feel more at ease. Alternatively, customers can be shown how to purchase the use of easily understood text, photos, or other types of examples. It saves time and helps to increase the company's faith. In the same way, after-sales operations, such as resolving disputes and delivering products, should take place as quickly as possible so that customers can have faith in the system.

The study has only examined a few factors influencing Nepalese consumers' attitudes toward online shopping. All respondents were locals of the Kathmandu Valley. Consequently, the survey does not consider the respondents' various geographical contexts. This study was confined to four factors affecting customers' views regarding online buying in Nepal; hence, future research may explore additional elements or a combination of those analyzed herein.

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