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Determinants of the Customer Satisfaction towards E-Pharmacy in Pakistan: A Mediating Role of Service Quality and Trust on Platform

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Abstract
This study examines the determinants of customer satisfaction and trust on platform-based services by integrating perceived benefits, perceived security, perceived privacy, and perceived issues within the SERVQUAL framework. Data were collected from 594 individuals aged 18 years and above across urban and rural areas of Pakistan using a structured five-point Likert scale questionnaire and convenience sampling. PLS-SEM was employed to test direct and mediating relationships. Results indicate that perceived benefits and privacy positively influence service quality, while perceived issues negatively affect it, and perceived security shows no significant effect. Service quality enhances satisfaction but negatively affects trust, while trust positively impacts satisfaction. Mediation analyses reveal complex pathways through which service quality and trust shape satisfaction, providing theoretical and practical insights for platform-based services. These findings offer actionable guidance for platform managers to enhance service design, strengthen privacy measures, manage operational issues effectively, and build trust, ultimately improving customer satisfaction and long-term engagement.

Keywords: Service Quality, Trust on Platform, Customer Satisfaction, E-Pharmacy, Pakistan, PLS-SEM.

Introduction

E-purchasing of drugs is also a business entity that entails the selling of pharmaceutical drug products, both prescription and non-prescription, ordering them online, and having them delivered via a deliveryman (Saraswat et al., 2020). The e-pharmacy environment in the world indicates a fast-changing field, which has been facilitated by the increasing digital health advancement, increased internet penetration, and the need to access healthcare in a convenient manner (Bhatt et al., 2024). There was a great growth in e-pharmacy services, especially following the COVID-19

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pandemic, which increased the rate of uptake of online delivery of medicine and telecommunications in developed and developing nations (Bahamdan & Almanasef, 2024a).

The online pharmacy concept developed in the late 1990s as a new development, mainly in the United States and Europe, as a subset of the wider expansion of e-commerce in the healthcare industry, and offered a convenient means of purchasing medication online to the patient (Gray, 2011). Drugstore.com, an online pharmacy that opened its doors in the US in 1999, was one of the earliest popular online pharmacies that helped become a significant place to sell prescription and over-the-counter medications online. Similarly, in 2000, the UK came up with the National Health Service (NHS), which was an integrated digital prescription service. (Gomes & Romão, 2025)

E-pharmacy started to enter underdeveloped countries like Pakistan and India. India had also come up with e-pharmacy platforms such as Netmeds and PharmEasy in 2015, and developed in Pakistan in 2014-2015. Early websites such as Dawaai.pk and Sehat.com.pk started to provide the service of online ordering and delivery of medicine (Naz et al., 2024). Online pharmacies have been on the increase in the past 5 years in Pakistan as usage of the internet is changing our lives, and it is also affecting healthcare services greatly (Saraswat et al., 2020).

E-pharmacy sites have a high potential to enhance accessibility and convenience of healthcare, especially among rural Pakistanis. These sites can serve to fill the healthcare gaps by providing access to the services remotely, including medicines and professional consultation. Nevertheless, to establish a successful setup of e-pharmacies in the rural community, various systemic issues may need to be tackled, such as the deficiency of technological facilities, weak control through legislative bodies, and an undeveloped supply network (Naz et al., 2024). Major obstacles are poor internet connectivity, low digital literacy levels, a lack of coordination between government institutions, the private sector, and civil society, and weak enforcement of regulations (Maqbool et al., 2025). Such problems add to the unfair access to good healthcare in rural areas. Unless these issues are sorted out, the e-pharmacies will remain short of their potential. Enhancement of internet connection, the level of education and training of users, and regular adoption of regulations are key measures to making e-pharmacy services more effective (Sattar et al., 2025).

Some of the factors that determine customer satisfaction with e-pharmacy services would be the quality of the service, trust, security, privacy, benefits, and risks. The level of satisfaction is usually affected by the ability of the services to meet the expectations of the customer (Mustafidah et al., 2024).

In Saudi Arabia, perceived security, privacy, issues, and benefits (Bahamdan & Almanasef, 2024a). In Thailand, there is a perceived security and privacy (Mitchev & Nuangjamnong, 2021). In India, service quality and perceived risks (Bhatt et al., 2024), and in Pakistan, trust in the platform (Suleiman et al., 2025). These studies were predominantly in urban settings where digital infrastructures had been well established, and consumer behavior, satisfaction, and trust were determined through surveys or structured models.

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Although the e-pharmacy is becoming increasingly relevant in Pakistan, there are still a number of research gaps that have been identified. Empirical research on the issue of trust in e-pharmacy platforms among the Pakistani population is deficient. Certain issues, like the authenticity of the product, the availability of pharmacists to consult with, and the privacy of data, are only under-researched (Suleiman et al., 2025). The lack of applying risk-benefit analysis frameworks in comprehending the role of perceived risks (e.g., counterfeit drugs, data breaches) in determining the satisfaction in relation to perceived benefits, e.g., convenience and cost savings (Bahamdan & Almanasef, 2024a).

Based on the aforementioned researchable gap, the study formulated an effective survey to gauge customer satisfaction towards e-pharmacies in Pakistan. The study will help in scaling the provision of health services using digital means in Pakistan, which is in tandem with the global trends of telemedicine and online administration of health services. It provides empirical evidence that is context-specific, especially from low- and middle-income countries (LMIC), where empirical evidence is limited at present. In practice, the study is relevant because it informs e-pharmacy providers, policymakers, and digital health stakeholders that the way to enhance customer experience, confidence in the platform, and user retention is through improved approaches to emerging digital healthcare markets, such as Pakistan.

Literature Review

SERVQUAL Framework

Proposed in 1988 by A. Parasuraman, Valarie A. Zeithaml and Leonard L. Berry, SERVQUAL was a framework that evaluated perceived service quality based on the difference between expectations and actual performance. The model conceptualizes the quality of services on five points which include; tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1988). It assumes that excellent performance in these dimensions positively increases satisfaction and loyalty. When applied to e-pharmacy platforms, SERVQUAL offers a systematic attitude to assess how online service experiences, process efficiency, accuracy of information and customer support affect customer satisfaction, as well as determining how trust in the platform and overall customer experience outcomes are achieved (Bahamdan & Almanasef, 2024b).

Development of the Hypotheses

Perceived Benefits and Service Quality

Perceived benefits indicate the degree at which customers perceive that a service is convenient, efficient, and cost saving, and it is functional. Users are more inclined to judge the service encounter positively and create positive perceptions about the quality of services when they see significant benefits associated with the service experience. Such advantages as the time efficiency, convenience, and better decision making strengthen the reliability and responsiveness assessments (Pang & Zhang, 2024). Also, with this congruence of perception, the customers understand the service as reliable and worthy, reinforcing the quality perceptions of both functional and

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relational levels. Thus, more felt benefits will probably result in a more favorable evaluation of the quality of services overall (Diwayanti et al., 2025).

Perceived Security and Service Quality

Perceived security is the degree to which the customers feel that transactions and interactions are secure against unauthorized access, fraud, or misuse. The perceived risk and uncertainty are minimized in a safe environment, and this impact is directly transferred to the process of service performance evaluation (Song et al., 2025). The customers are likely to experience more confidence that the financial and transactional processes are well-protected, which will make them feel that the service is dependable and professionally organized. The mechanisms of security indicate competence and integrity of operation which reinforce aspects of quality that are an assurance and trustworthiness. On the other hand, the bad security perceptions are able to dwarf the functional strengths. Therefore, perceived security that is more powerful promotes better services evaluation (Almaiah et al., 2023).

Perceived Privacy and Service Quality

Perceived privacy denotes customer ideations about privacy security and responsible management of personal data. In situations where the privacy protection is properly conveyed and established, the customers feel more psychologically comfortable, which positively influences how they evaluate the quality of the service provided (Almaiah et al., 2023). Confidential data respect improves empathy and assurance perceptions, indicating that the service provider appreciates rights of customers and ethical norms. Good privacy practices will lower fear and raise confidence of service processes, which will augment reliability perceptions. On the contrary, quality judgments are eroded by issues of privacy. Thus, perceived greater privacy is likely to enhance ratings of general service quality (Su et al., 2022).

Perceived Issues and Service Quality

Perceived issues are customer concerns on faults in the operations, delays, technicality, or inconsistency in the services. Customers develop negative attitudes towards the reliability and responsiveness when they experience recurrent problems, which directly undermines the quality of service ratings. Any kind of operational disruption results in dissatisfaction and doubt of the competence of the provider (Almaiah et al., 2023). Even minor repetitive issues might indicate inefficiency and have an adverse effect on the overall quality estimates. Nonetheless, problem resolutions can to some extent alleviate the negative perceptions effectively through responsiveness. Overall, the more the perceived issues, the lower the service quality perceptions because customers perceive repetitive troubles as a sign of low service performance (Singh et al., 2023).

Service Quality and Trust on Platform

Service quality is the general assessment of customers on the performance of services on reliability, responsiveness, assurance, empathy, and tangibles as seen through the

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many dimensions of service quality. The quality of service provision is consistently high, which creates positive experiences that supports ideas about the competence and integrity of the provider. By providing services correctly, timely, and openly, customers gain trust in the intentions and opportunities of the platform (Kim & Yum, 2024). Quality performance minimizes perceived risk and uncertainty, which are very significant factors of trust formation. Credibility and relationship develop with time through repeated satisfactory interactions. As a result, high quality of service will greatly boost trust on platform as it sends a message of reliability and ethical integrity (Homyamyen et al., 2024).

Service Quality and Customer Satisfaction with E-Pharmacy

Service quality is a general rating of the way customers assess the effectiveness of a service in terms of reliability, responsiveness, assurance, empathy, and tangibility. Customers also realize positive confirmation when performance is constantly satisfying and even above expectations, which results in increased satisfaction (Bahamdan & Almanasef, 2024b). The quality of services leads to minimized inconvenience, errors, and builds confidence in competence of the provider. Proper processes, prompt responses, and proper service delivery are some of the factors that lead to positive emotional and cognitive appraisals. Conversely, failure to meet or low-quality performance creates dissatisfaction and negative attitudes (Erik et al., 2025).

Trust on Platform and Customer Satisfaction with E-Pharmacy

Trust on platform is an understanding that the service provider is dependable, capable and is of integrity. Emotional security and confidence is enhanced when customers understand that a platform is reliable and upholds its commitments and protects its interests. Trust will minimize the level of perceived risk and uncertainty especially in digital service settings (Bahamdan & Almanasef, 2024b). Positive relational ties are established on a trusted platform and this makes the customers engage more positively with their overall experience. Low trust on the contrary increases skepticism and decreases satisfaction despite satisfactory functional performance. Hence, higher levels of trust on platform are likely to positively influence customer satisfaction with E-Pharmacy services (Shinde et al., 2025).

Service Quality Mediates between Perceived Benefits and Customer Satisfaction with E-Pharmacy

Perception of benefits leads to positive anticipations on convenience, efficiency and value. Nevertheless, these advantages are converted into satisfaction only when they are successfully achieved by the high quality of services. Service quality would be the means in which the perceived benefits are put into practice as actual positive experiences (Bahamdan & Almanasef, 2024b). Such benefits as ease of use and time savings are facilitated by the presence of reliable and responsive service performance which makes customers feel more satisfied. On the other hand, when the quality of the services is low, then perceived benefits might not be realized entirely positive results.

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Therefore, service quality is expected to mediate the relationship between perceived benefits and customer satisfaction with E-Pharmacy (Misra, 2025).

Service Quality Mediates between Perceived Security and Customer Satisfaction with E-Pharmacy

Perceived security mitigates risk and enhances trust in a transaction but its impact on satisfaction lies on the general service delivery. Even the secure systems cannot bring about satisfaction without the provision of reliable, responsive and highly professional delivery of services. Service quality turns the perceptions about security into positive experiences by reinforcing assurance and operational competence (Bahamdan & Almanasef, 2024b). Satisfaction is enhanced when customers believe that they are under high security level incorporated in effective service processes. On the other hand, the positive impact of security perceptions can be undermined by poor performance in service. Thus, service quality is likely to mediate the relationship between perceived security and customer satisfaction with E-Pharmacy (Bhatt et al., 2024).

Service Quality Mediates between Perceived Privacy and Customer Satisfaction with E-Pharmacy

Perceived privacy adds confidence whereby customers are assured that their personal information is secured and handled ethically. However, the aspect of privacy protection is the best contributor to satisfaction when incorporated in the high service quality. Service quality serves as intermediary through which the perception of privacy is converted into a positive general judgment (Bahamdan & Almanasef, 2024b). Trustworthy communication, open policies, and information handling in a professional way support the value of privacy and experience. Privacy protection may not guarantee satisfaction with inefficient service processes. As a result, the perceived privacy and the customer satisfaction with the E-Pharmacy services are supposed to be mediated by service quality (Erik et al., 2025).

Service Quality Mediates between Perceived Issues and Customer Satisfaction with E-Pharmacy

Delays, errors, or technical disruptions are perceived issues that negatively impact general assessments. Nonetheless, the degree to which such issues decrease satisfaction is highly dependent on the quality of the services. The negative impact of perceived problems can be alleviated by high quality of service especially in responsiveness and problem solving which prove competence and commitment to customer care (Homyamyen et al., 2024). Good recovery measures rebuild trust and minimize dissatisfaction that comes as a result of defective operations. On the other hand, low service performance enhances adverse preconceptions and dissatisfaction. Thus, service quality would be assumed to mediate the connection between perceived problems and customer satisfaction with E-Pharmacy through buffering through or strengthening the effect of the faced problems (Singh et al., 2023).

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Service Quality Mediates between Perceived Benefits and Trust on Platform

The perceived benefits create the positive expectations in terms of convenience and value, but trust is created when these expectations are met repeatedly with consistent performance. The experiential evidence that confirms perceived benefits is service quality. A customer gets a sense of trust in the competency of the platform when the assistance is backed up by the correct transactions, punctual responses, and professionalism (Su et al., 2022). Quality in the services indicates integrity and reliability in the operation and this perceived benefits are translated into trust. Conversely, perceived benefits might fail to build trust when there is inconsistency in delivering the services. Therefore, the relationship between perceived benefits and trust on platform will be mediated by the quality of services (Song et al., 2025).

Service Quality Mediates between Perceived Security and Trust on Platform

Perceived security lessens uncertainty and financial risk on which trust is built. Nor is trust strengthened, though, when the perceptions of security are instilled in a continually high level of service quality. Assurance and credibility are increased by reliable systems, transparent processes and positive interactions amongst professionals (Bahamdan & Almanasef, 2024b). The quality of the service proves that the security measures are properly introduced and supported, which reinforces the trust in the integrity of the platform. On the other hand, the beneficial effect of security perceptions on trust might be undermined by operational inefficiencies. As such, service quality is projected to facilitate the association between the sensed safety and trust on platform by turning protective processes into reliable service encounters (Pang & Zhang, 2024).

Service Quality Mediates between Perceived Privacy and Trust on Platform

The perceived privacy displays the confidence in the responsible management of information, which facilitates the formation of the trust. However, with privacy protection that is supported with credible and transparent service performance, there is increased trust. Service quality realizes the promises of privacy by providing information in a comprehensible manner, using uniform processes, and handling data professionally (Diwayanti et al., 2025). Good service will mean that the privacy policies are not merely proclaimed but are being put in effect. Conversely, inconsistent service delivery can raise the privacy assurances. In this regard, service quality would have mediated perceived privacy to trust on platform by enhancing credibility by using experience to validate (Song et al., 2025).

Service Quality Mediates between Perceived Issues and Trust on Platform

The perceived problems cause doubt and can make confidence in the platform weak. Such concerns have a strong impact on trust, which will depend on the quality of the service, especially whether the problem can be addressed effectively. Complaints should be handled in a responsible way and dealt with promptly and clearly, which proves competence and accountability, which in turn will inspire confidence (Almaiah et al., 2023). Service quality can help in transforming any negative incidents and turn

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them into an opportunity to build on the trust by successfully recovering it. On the other hand, a lack of responses to the received services reduces suspicion and credibility. Therefore, service quality is supposed to mediate the relationship between the issues perceived and the trust on platform because it will either undermine or strengthen the perceptions of trust (Su et al., 2022).

Trust on Platform Mediates between Service Quality and Customer Satisfaction with E-Pharmacy

Quality of service is directly related to the customer ratings; its impact on satisfaction is partially mediated by trust on platform. The quality of services is high and improves reliability, competence and integrity perceptions that build trust. This trust lowers the perceived risk and enhances emotional assurance resulting in more positive satisfaction judgments (Almaiah et al., 2023). Customers have a greater degree of trust in the platform, and, when they do, their positive experience of a service is perceived more positively and more reliably, which increases the level of satisfaction. On the other hand, low trust can curb the good influence of quality of service. As such, platform trust is likely to intervene in the connection between quality of services and customer satisfaction with E-Pharmacy (Singh et al., 2023).

Research Framework

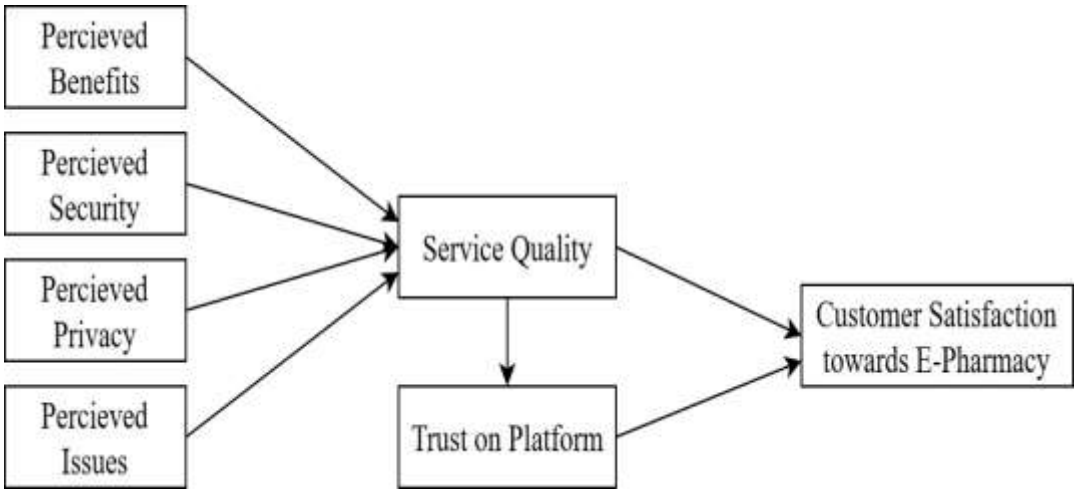

Figure 1: Research Framework

Methodology

Sampling Design

A non-probability convenience sampling technique was employed to collect data using an online, self-administered questionnaire. The study targeted the general population of Pakistan, comprising individuals aged 18 years and above, from both urban and rural areas across Pakistan. The use of convenience sampling was necessitated by the absence of an adequate sampling frame that could represent the target population (Vehovar et al., 2016). Moreover, practical considerations, such as

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limited time and resources, justified the adoption of this method, which is widely recognized as appropriate in exploratory and social research contexts where probability sampling is not feasible (Etikan et al., 2016). A minimum sample size of 282 responses was calculated with an anticipated effect size of 30% and desired statistical power of 95% using Soper (2025) online sample size calculator. Likewise, Krejcie and Morgan (1970) suggested a minimum of 384 responses for a population size of 1 million or above; however, sample of 500 or more are generally suitable for behavioral studies (Roscoe, 1975). Therefore, the study has collected 594 useable and valid responses from the sample population. Table 1 shows the demographic profile of the respondents.

Table 1:
Demographic Profile (n = 594)

		Frequency	Percent
Age	18 – 30 years	193	32.5
	31 - 40 Years	190	32.0
	41 – 60 years	173	29.1
	Above 60 years	38	6.4
Gender	Male	317	53.4
	Female	277	46.6
Education Level	Matriculation	21	3.5
	Intermediate	63	10.6
	Undergraduate	129	21.7
	Graduate	127	21.4
	Masters	127	21.4
	Postgraduate	107	18.0
	Professional Certifications	20	3.4
Occupation	Student	21	3.5
	Unemployed	14	2.4
	Employed	189	31.8
	Business Owner	167	28.1
	Homemaker	167	28.1
	Retired	36	6.1
City/ Location	Karachi	175	29.5
	Lahore	109	18.4
	Islamabad/Rawalpindi	83	14.0
	Peshawar	13	2.2
	Quetta	21	3.5
	Faisalabad	116	19.5
	Others	77	13.0

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Measures

Perceived Benefits

Five measures of perceived benefits were adapted from Eid (2011) based on a five-point Likert scale. A sample item is "The e-pharmacy I used provided useful health information and access to professional consultation services to me."

Perceived Issues

Five measures of perceived issues were adapted from Bahamdan and Almanasef (2024a); Bhatt et al. (2024) based on a five-point Likert scale. A sample item is "The service quality of the e-pharmacy was poor or inconsistent."

Perceived Privacy

Four measures of perceived privacy were adapted from Eid (2011) based on a five-point Likert scale. A sample item is "The e-pharmacy collected only the personal and health-related information necessary to fulfill my prescriptions and provide services."

Perceived Security

Four measures of perceived security were adapted from Eid (2011) based on a five-point Likert scale. A sample item is "The e-pharmacy I used had secure mechanisms to ensure that my personal and medical information was transmitted safely."

Perceived Service Quality

Six measures of perceived service quality were adapted from Ramsaran-Fowdar (2007) based on a five-point Likert scale. A sample item is "I consistently receive timely and efficient service from the e-pharmacy staff."

Trust on Platform

Six measures of trust of platform were adapted from Rakowska (2021) based on a five-point Likert scale. A sample item is "I feel safe and secure while sharing my personal and medical information with the e-pharmacy store."

Customer Satisfaction

Six measures of customer satisfaction were adapted from Bahamdan and Almanasef (2024a); Eid (2011) based on a five-point Likert scale. A sample item is "The e-pharmacy meets my expectations in terms of safety, service, and quality."

Data Collection

The participants were administered a structured questionnaire on a five-point Likert scale of strongly disagree to strongly agree to collect data. The instrument was created to record the perception of respondents in a standardized and measurable format that would be consistent and comparative of the responses. This method made it easy to collect data easily and effectively in a heterogeneous demographic population under a tight time and resource limit.

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Data Analysis

The proposed relationships and the mediation effect among the constructs were tested using PLS-SEM. (Hair et al., 2019) suggest that PLS-SEM can be used in predictive research models which include various constructs, multifaceted relationships, and mediation . It is especially appropriate when the aim is to achieve theory development and variance explanation, but not rigid theory test. PLS-SEM is also efficient in non-normal data distributions and moderate samples (Hair et al., 2011). Moreover, it allows measuring the measurement model and structural model at the same time, and consequently, the construct validity, reliability, and hypothesized path relationships are reliably evaluated (Sarstedt et al., 2014).

Results and Discussions

Measurement Model

Measurement model refers to the statistical estimation and validation of the constructs development with its theoretical underpinnings (Hair et al., 2011). It measures the statistical representation of the indicators towards their theoretical construct (Hair et al., 2022). Table 2 provides the result of measurement model for construct development and convergent validity based on PLS algorithm estimations.

Table 2:
Measurement Model

Constructs	Items	Loadings	Prob.	Alpha	CR	AVE
Perceived Benefits	BNF1	0.962	0.000	0.918	0.947	0.855
	BNF3	0.850	0.000			
	BNF5	0.958	0.000			
Customer Satisfaction	CST3	0.911	0.000	0.759	0.892	0.805
	CST4	0.884	0.000			
Perceived Issues	ISS1	0.962	0.000	0.909	0.957	0.917
	ISS2	0.953	0.000			
Perceived Privacy	PRV1	0.800	0.000	0.831	0.891	0.733
	PRV2	0.851	0.000			
	PRV4	0.914	0.000			
Perceived Service Quality	PSQ4	0.944	0.000	0.911	0.956	0.916
	PSQ5	0.970	0.000			
Perceived Security	SEC3	0.987	0.000	0.973	0.987	0.974
	SEC4	0.986	0.000			
Trust on Platform	TP1	0.870	0.000	0.822	0.894	0.738
	TP2	0.782	0.000			
	TP5	0.920	0.000			

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Above table showed that indicators have loadings higher than the recommended threshold of 0.70 with probability level below 5% (Hair et al., 2022; Hair et al., 2011) manifesting that indicators have substantial reliability for achieving construct validity. Moreover, constructs have alpha coefficient and composite reliability higher than the recommended thresholds of 0.70 and 0.80, respectively (Hair et al., 2019) and therefore, construct reliability has been established. Lastly, the table has showed that constructs have AVE coefficients higher than 0.50 (Hair et al., 2011; Hair et al., 2013) and thus, it manifested that there is a substantial degree of convergence between indicators and constructs.

Discriminant Validity

Discriminant validity can be defined as the degree to which latent traits represented by one construct has low correlation to the latent traits represented by the other constructs (Campbell & Fiske, 1959). Table 3 shows the result of Heterotrait-Monotrait (HTMT) ratio for assessing discriminant validity between latent constructs.

Table 3:
Heterotrait-Monotrait (HTMT) Ratio

	BNF	CSAT	ISS	PRV	PSQ	SEC	TP
BNF							
CSAT	0.565						
ISS	0.864	0.820					
PRV	0.472	0.883	0.486				
PSQ	0.217	0.296	0.339	0.604			
SEC	0.201	0.209	0.227	0.224	0.085		
TP	0.565	0.760	0.304	0.787	0.296	0.203	

BNF = Perceived Benefits; SEC = Perceived Security; CSAT = Customer Satisfaction; ISS = Perceived Issues; PRV = Perceived Privacy; PSQ = Perceived Service Quality; TP = Trust on Platform

Henseler et al. (2016); Henseler et al. (2015) suggested that HTMT ratio between two constructs should not exceed 0.90 for acceptable degree of divergence between them. In the above table, all HTMT ratios are below the recommended threshold of 0.90 manifesting that constructs have substantial divergence between each other and thus, discriminant validity using HTMT ratio has been established.

Predictive Power of the Endogenous Constructs

Table 6 shows the predictive power of the endogenous constructs in the structural model.

Table 6:
Predictive Power of the Endogenous Latent Constructs

	R-Square	Adjusted R-Square
Customer Satisfaction	0.464	0.462

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Perceived Service Quality	0.414	0.410
Trust on Platform	0.014	0.012

Above table showed that customer satisfaction has a moderate predictive power of 46.4 percent in the structural model (Chin, 1998) while perceived service quality also has moderate predictive power of 41.4 percent (Chin, 1998). However, Cohen (1988) suggested that 2 percent or below are weak predictive powers but acceptable therefore, trust on platform has a weak but acceptable predictive power of 1.4 percent.

Structural Model

Direct-Effect Analysis

Table 4 shows the result of direct-effect analysis for hypothesis testing using PLS path modeling analysis based on bootstrapping technique.

Table 4:
Direct-Effect Analysis

	Estimate	Std. Dev.	t-Statistics	Prob.	Decision
H1: BNF -> PSQ	0.260	0.046	5.613	0.000	Supported
H2: SEC -> PSQ	0.043	0.036	1.197	0.231	Not Supported
H3: PRV -> PSQ	0.584	0.023	24.928	0.000	Supported
H4: ISS -> PSQ	-0.331	0.060	5.542	0.000	Supported
H5: PSQ -> TP	-0.119	0.040	2.986	0.003	Supported
H6: PSQ -> CSAT	0.312	0.032	9.780	0.000	Supported
H7: TP -> CSAT	0.643	0.029	21.833	0.000	Supported

BNF = Perceived Benefits; SEC = Perceived Security; CSAT = Customer Satisfaction; ISS = Perceived Issues; PRV = Perceived Privacy; PSQ = Perceived Service Quality; TP = Trust on Platform

Hypothesis 1 is supported by the findings demonstrating that perceived benefits have a significantly positive effect on perceived service quality ($\beta = 0.260$; $p < 0.05$). This indicates that as consumers perceive greater benefits, their assessment of service quality improves significantly. Such a relationship is well-documented in consumer behavior research, where perceived benefits enhance value perceptions, thereby positively influencing service quality evaluations (Farooq & Maqbool, 2024; Marwan et al., 2024; Migkos et al., 2025)

Hypothesis 2 is not supported by the findings positing that perceived security has an insignificantly positive effect on perceived service quality ($\beta = 0.043$; $p > 0.05$). This suggests that perceived security does not have a meaningful impact on service quality perceptions in this context. Previous studies have shown mixed results, i.e., perceived security factors may affect customer trust more directly than perceived service quality,

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emphasizing that security alone might not suffice to elevate quality assessments (Banu et al., 2019; Shankar & Jebarajakirthy, 2019; Yang, 2012)

Hypothesis 3 is supported by the findings manifesting that perceived privacy has a significantly positive effect on perceived service quality ($\beta = 0.584$; $p < 0.05$). This finding aligns with literature emphasizing that consumers' concerns and perceptions regarding privacy considerably shape their evaluations of service quality, particularly in digital platform settings where privacy risks are salient (Marwan et al., 2024; Migkos et al., 2025; Sun et al., 2025)

Hypothesis 4 is supported by the findings showing that perceived issues have a significantly negative effect on perceived service quality ($\beta = -0.331$; $p < 0.05$). This confirms that the presence of issues diminishes consumers' perceptions of service quality, a well-established relationship in service quality literature linking problem occurrences to degraded quality perceptions (Hussain, 2016; Jasmani & Sunarsi, 2020; Ullah, 2012)

Hypothesis 5 is supported by the findings indicating that perceived service quality has a significantly negative effect on trust on platform ($\beta = -0.119$; $p < 0.05$). Although counterintuitive, this may represent contextual nuances where higher service quality expectations intensify scrutiny or risk awareness that reduces trust, a phenomenon documented in some recent trust and service quality research (Banu et al., 2019; Sun et al., 2025; Tartaraj et al., 2024)

Hypothesis 6 is supported by the findings manifesting that perceived service quality has a significantly positive effect on customer satisfaction ($\beta = 0.312$; $p < 0.05$). This robust positive effect aligns with extensive empirical evidence affirming service quality as a key determinant of customer satisfaction across service industries (Hussain, 2016; Liao et al., 2022; Ullah, 2012)

Hypothesis 7 is supported by the findings demonstrating that trust on platform has a significantly positive effect on customer satisfaction ($\beta = 0.643$; $p < 0.05$). Trust is widely recognized in the literature as a critical antecedent of satisfaction and loyalty in platform-based services, fostering favorable customer evaluations and continued engagement (Juwaini et al., 2022; Kuo et al., 2013; Yum & Kim, 2024)

Specific Indirect-Effect Analysis

Table 5 shows the result of specific indirect-effect analysis for hypothesis testing based on the PLS bootstrapping technique.

Table 5:
Specific Indirect-Effect Analysis

	Estimate	Std. Dev.	t-Statistics	Prob.	Decision
H8: BNF -> PSQ -> CSAT	0.081	0.019	4.263	0.000	Supported
H9: SEC -> PSQ -> CSAT	0.013	0.011	1.188	0.235	Not Supported
H10: PRV -> PSQ -> CSAT	0.182	0.018	10.271	0.000	Supported
H11: ISS -> PSQ -> CSAT	-0.103	0.026	4.010	0.000	Supported
H12: BNF -> PSQ -> TP	-0.031	0.013	2.467	0.014	Supported

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H13: SEC -> PSQ -> TP	-0.005	0.005	1.033	0.302	Not Supported
H14: PRV -> PSQ -> TP	-0.069	0.025	2.828	0.005	Supported
H15: ISS -> PSQ -> TP	0.039	0.013	3.071	0.002	Supported
H16: PSQ -> TP -> CSAT	-0.076	0.028	2.708	0.007	Supported

BNF = Perceived Benefits; SEC = Perceived Security; CSAT = Customer Satisfaction; ISS = Perceived Issues; PRV = Perceived Privacy; PSQ = Perceived Service Quality; TP = Trust on Platform

Hypothesis 8 is supported by the findings showing that perceived benefits has a significantly positive mediating effect via perceived service quality on customer satisfaction ($\beta = 0.081$; $p < 0.05$). This underscores that perceived benefits enhance customer satisfaction by improving service quality perceptions, consistent with prior studies demonstrating that service quality mediates the relationship between perceived benefits and customer satisfaction in various service contexts (Hussain, 2016; Kuo et al., 2013; Xu et al., 2007)

Hypothesis 9 is not supported by the findings positing that perceived service quality has an positive but insignificant mediating effect between perceived security and customer satisfaction ($\beta = 0.013$; $p > 0.05$). This indicates that security perceptions alone do not significantly translate into customer satisfaction through service quality in this study, echoing findings from prior research noting mixed or context-dependent influences of perceived security on satisfaction (Banu et al., 2019; Gross, 2015; Shankar & Jebarajakirthy, 2019)

Hypothesis 10 is supported by the findings demonstrating that perceived service quality has a significantly positive mediating effect between perceived privacy and customer satisfaction ($\beta = 0.182$; $p < 0.05$). This confirms the important role of quality perceptions as a pathway for how reviews influence satisfaction, aligning with empirical evidence documenting the impact of peer reviews on quality perceptions and satisfaction (Hussain, 2016; Kuo et al., 2013; Xu et al., 2007)

Hypothesis 11 is supported by the findings indicating that perceived service quality has a significantly negative mediating effect between perceived issues and customer satisfaction ($\beta = -0.103$; $p < 0.05$). This shows that increased issues reduce satisfaction by lowering perceived service quality, consistent with literature noting the detrimental impact of issues on quality perceptions and satisfaction (Elshaer et al., 2025; Hussain, 2016; Ullah, 2012)

Hypothesis 12 is supported by the findings as perceived service quality has a significantly negative mediating effect between perceived benefits and trust on platform ($\beta = -0.031$; $p < 0.05$). Though negative, this may reflect a complex relationship where increased benefits heighten expectations or scrutiny that affects trust negatively, a phenomenon supported by nuanced trust literature emphasizing that perceived value and trust interactions can vary with context (Elshaer et al., 2025; Kuo et al., 2013; Yum & Kim, 2024)

Hypothesis 13 is not supported by the findings manifesting that perceived service quality does not mediates the effect of perceived security on trust on platform ($\beta = -$

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0.005; p > 0.05). This suggests that security perceptions alone might not significantly foster trust via service quality, reflecting varied findings in studies of security and platform trust (Banu et al., 2019; Gross, 2015; Shankar & Jebarajakirthy, 2019)

Hypothesis 14 is supported by the findings showing perceived service quality has a significantly negative mediating effect between perceived privacy and trust on platform (β = -0.069; p < 0.05). This reveals that certain perceptions from reviews can negatively affect trust through service quality, which aligns with findings that negative or critical reviews impair trust in platforms (Elshaer et al., 2025; Hussain, 2016; Juwaini et al., 2022)

Hypothesis 15 is supported by the findings showing that perceived service quality has a significantly positive mediating effect between perceived issues and trust on platform (β = 0.039; p < 0.05), indicating that in some contexts, issues might increase trust by enhancing transparency or stimulating problem resolution via quality perceptions, an insight supported by research emphasizing complex issue-trust relations (Elshaer et al., 2025; Esmaeili et al., 2021; Hussain, 2016)

Hypothesis 16 is supported by the findings demonstrating that trust on platform has a significantly negative mediating effect between perceived service quality and customer satisfaction (β = -0.076; p < 0.05). This complex mediation path indicates that service quality influences satisfaction partially through trust, but some negative association might reflect contextual trust dynamics noted in platform literature where expectations and trust interplay nuancedly (Kuo et al., 2013; Ullah, 2012; Yum & Kim, 2024)

Conclusion and Recommendations

Conclusion

The research incorporated the SERVQUAL framework and trust and key perceptual variables in a developed mediation framework to examine the determinants of customer satisfaction. The dimensions were developed to conceptualize service quality based on the holistic service assessment by the customers. The general population of Pakistan was used as a non-probability convenience sampling method to collect the data on an online self-administered questionnaire. The number of valid responses of 594 was over the recommended minimum sample limits, which is a high level of statistical power and strength. The large sample population contributed to the increase of generalizability across the various demographic groups, whereas PLS-SEM allowed the evaluation of complicated direct and indirect correlations simultaneously in the suggested framework.

The results show that perceived benefits and perceived privacy have positive effects on perceived service quality, but perceived issues have negative effects on the perceived service quality. Perceived security also does not have a significant impact on perceived service quality. Perceived service quality has a positive impact on customer satisfaction but has a negative one on trust on platform. Customer satisfaction has a positive relationship with trust on platform. Analysis of mediation indicates that perceived service quality has a significant effect in mediating the relationship between perceived benefits, perceived privacy and perceived issues and

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not in mediating the relationship between perceived security and customer satisfaction. Moreover, the perceived service quality mediates the relations between perceived benefits, perceived privacy, and perceived issues with trust on platform, but not between perceived security and trust on platform. Lastly, the mediating variable between service quality perception and customer satisfaction is trust on platform.

Theoretical Implications

The research is an addition to the literature by making extensions of SERVQUAL paradigm within a digital platform setting and combining it with perception-related trust-based and perceptual constructs into a holistic mediation paradigm (Erik et al., 2025; Parasuraman et al., 1988). The results indicate the discrimination of perceived benefits, privacy, security, and issues in influencing the quality of services, trust, and satisfaction. Both positive and negative mediation directions are identified and these add to the comprehension of complex relational processes among these constructs. Besides, the findings contradict some conventional beliefs concerning unambiguously positive correlations between the quality of services and the level of trust, thus providing the subtle information that optimizes service and relationship marketing conceptions within platform-based settings (Bahamdan & Almanasef, 2024b).

Recommendations

First, the service providers are advised to focus on methods that enhance perceived benefits, which affect the quality of services positively and customer satisfaction indirectly. The quality perceptions can be reinforced in terms of functional value, convenience, and ease of use through the use of intuitive interfaces, simplified processes, and delivery on time. The service platforms must also focus on quality privacy practices because perceived privacy is a critical aspect of service quality and a mediator of satisfaction and trust. The privacy policies should be communicated clearly, personal information should be handled securely, and it should be made clear what data are used to strengthen the positive opinion of people.

The perceived security was not significantly associated with service quality, but there is still a need to uphold high security practices in order to build trust. The platforms are to introduce secure transaction, authentication and visible security assurance to minimize risk perception and credibility development. At the same time, it is important to prevent the perceived issues, as they have a negative impact on service quality and an inverse relationship with satisfaction. The adverse effect of operations difficulties can be reduced by ensuring an effective system of complaint management, attentive customer service, and the prompt elimination of problems, and in other instances, the trust can even be increased by showing competence.

The identified complicated interdependence between service quality and trust implies that the surpassing of customer expectations needs to be accompanied by the presence of regular, open communication. Customer expectations should be handled with a lot of care and too high promises made without perfect execution can break trust. Responsiveness, empathy and reliability of the staff can also be trained and monitored on the service performance and this will make certain that the quality of the service is

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always in support of satisfaction and trust. Lastly, by using service quality as an intermediary, platforms may aim at producing whole-hearted experience that combines both tangible and intangible aspects in a way that perceived benefits, privacy protection, and resolution of issues collaborate in establishing satisfaction and trust, which results in continued usage and loyalty towards platform-based services.

Limitations and Future Research

One of the main limitations of the study is that it utilized a non-probability method of convenience sampling and this could be a limitation to the generalizability of the results; future studies should use probability-based sampling to achieve better representativeness. The cross-sectional nature is also a limitation that will not allow making causal inferences in time; longitudinal research could examine how perceptions of benefits, privacy, and service quality change and affect trust and satisfaction. The research also trusted the self-reported measures and this can bring about bias in response, future studies may include some behavioral or transactional data to justify the perceptual responses. Lastly external validity is constrained by contextual attention to one country, comparative research across regions may examine cultural or market variations in future studies.

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