Factors shaping E-trust and purchasing intentions in Pakistan's online market: A structural equation modeling analysis

Zia Moiz Qureshi
Iqra University, Karachi

Zehra Abdul Ahad
Research Associate, Shaheed Benazir Bhutto University, Shaheed Benazirabad

Ayesha Manzoor
Researcher, Department of Media, Management and Transformation Centre (MMTC) University - Jönköping University, Sweden

Muhammad Mutahar
Iqra University, Karachi

Kiran Manzoor
Assistant Professor, Department of Management Sciences, Balochistan University of Information Technology, Engineering and Management Sciences, Quetta

Abstract
The fast expansion of online shopping has changed the buying habit of consumers; nonetheless, the issue of trust in online shopping platforms has been a major challenge especially in emerging economies. The study proposed was to investigate the determinants of consumer trust in online shopping and the impact that such determinants have on online purchase behavior in Pakistan. The quantitative and cross-sectional design was used to collect the data of 302 consumers with a prior experience of online shopping using a structured questionnaire. The relationships between perceived security, privacy protection, the quality of the site, perceived risk, the reputation of the vendors, consumer trust as well as online purchase behavior were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM). According to the findings, consumer trust significantly depends on perceived security, privacy protection, the quality of the web site, and reputation of the vendor, whereas perceived risk has a hefty negative impact on consumer trust. The online purchase behavior was found to be strongly positively related to consumer trust. The mediation analysis also showed that consumer trust partly mediates the associations between determinants of trust and online purchasing behavior. The structural model had a high explanatory power as it had a significant percentage of variance in consumer trust and online purchase behavior. This paper is significant to the literature on e-commerce since it shows empirical data on Pakistan, which is a developing digital market and consumer trust is a key factor in online buying behavior. The results can be used by

online retailers and policy makers as a guideline as they can see the need of enhancing security, privacy protection, the quality of the websites and the reputation of vendors to increase consumer trust and encourage long-term expansion of online shopping.

1. Introduction

The rapid growth of e-commerce has essentially changed how consumers seek information, judge products, and how they buy (Yang, Xu et al. 2022). The development of the internet penetration, mobile technologies, and digital payment systems have allowed the online retail platforms to develop at an unprecedented rate thus providing the consumers with a higher level of convenience, variety, and price transparency (Taylor 2016). Regardless of these benefits, because of the lack of a physical interaction between buyers and sellers, a high level of uncertainty is being brought to online transactions leading to consumer trust being one of the central concerns of the success and sustainability of e-commerce ecosystems (Soleimani 2022).

Online shopping behavior is commonly known to depend on consumer trust as one of the critical determinants since it eliminates perceived uncertainty and vulnerability in relation to electronic transactions (Yang, Pang et al. 2015). Consumers in online spaces, are forced to use digital interfaces, system guarantees as well as secondary indicators to determine the credibility and reliability of vendors (Osarenkhoe, Fjellström et al. 2024). Perceived security of payment systems, protection of personal information, the quality of websites, reputation of a vendor, and perceived risk are found to be very important elements of consumer confidence in terms of their readiness to conduct online purchases (Almaiah, Al-Rahmi et al. 2022). Lacking trust, consumers might be afraid to provide personal or financial data, leave shopping carts or even leave the shopping websites.

In emerging economies, issues related to trust are usually even stronger because of insufficient control over regulations, disparity in the quality of technological infrastructure, and increased risks of fraud, data privacy risks, and delivery security (Habbal, Ali et al. 2024). Pakistan is a fast developing digital market where a high rate of e-commerce has been noted over the past few years due to the youthful population, rising use of smartphone, and the growing services of online retailers (Barrech, Aslam et al. 2023). Nevertheless, in spite of this increment, the majority of the consumers in Pakistan still raise apprehensions of online shopping especially in the area of safety of payment, abuse of personal information and trustworthiness of online retailers. Such issues point to the necessity of the context-dependent empirical research that investigates the establishment of trust and its conversion into the actual online buying behavior (Zia, Sajid et al. 2022).

Current literature on online consumer behavior has greatly explored the topic of trust and its antecedents in the developed economies (Yang, Pang et al. 2015, Ter Huurne, Ronteltap et al. 2017), but there is relatively little empirical evidence in terms of

Pakistan and other emerging markets. In addition, most of the previous research was conducted on single trust determinants or a single analytical method, providing little information on the complex, interdependent processes involved in the connection between various determinants of trust and purchasing behavior. The structural Equation Modelling (SEM) and especially the Partial Least Squares would be an effective analysis tool to examine not only measurement characteristics but also structural relationships between various latent constructs, which is why it qualifies well in trust-based e-commerce studies (Gbongli, Xu et al. 2020).

Current study seeks to identify the predictors of consumer trust towards online shopping as well as evaluate their effects on online purchase behavior in Pakistan through a PLS-SEM. In particular, the research questions include inquiring the role of perceived security, privacy protection, quality web site, perceived risk as well as vendor reputation in consumer trust and how consumer trust in turn influences online buying behavior. Also, the paper assesses the mediating effect of consumer trust in the relationship between these determinants and the purchase results. Offering empirical proof of the situation in Pakistan, this study can be added to the general body of the e-commerce literature and offer valuable opinions to online retailers and policy makers to enhance customer trust and facilitate the implementation of sustainable development in online markets.

Study Objective

The main aim of the present research was not only to analyze the determinants of consumer trust in online shopping but also to evaluate the effects of the consumer trust on the online purchase behaviour in Pakistan. In particular, the research was interested in assessing the impact of perceived security, privacy protection, quality of websites, perceived risk, and vendor reputation on consumer trust, and exploring how consumer trust mediates the connection between these determinants and online purchase behavior on a Partial Least Squares Structural Equation Modeling (PLS-SEM) framework.

2. Methodology
2.1 Study Design
The study design used in this study is quantitative, cross-sectional and the structural relationships between trust determinants, consumer trust and online purchase behavior were studied using Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The choice of the PLS-SEM methodology was based on the fact that it is most useful to predict-related research, the fact that it can be used to address complex models with multidimensional latent constructs, as well as the fact that it is very strong when dealing with non-normally distributed data.

2.2 Study Setting and Population
The study was carried out in Pakistan and it focused on adult consumers who had earlier experiences of online shopping. The population of study included individuals of age 18 and above who had at least done one online purchase in the last six months.

This criterion was used to ensure that the participants had sufficient exposure to the online shopping platforms to judge the perceptions about trust.

2.3 Sample Size and Sampling Technique

The study used a sample size of 302 respondents, which was also obtained through the survey-based analysis. The adequacy of the sample size in the analysis of PLS-SEM was informed by the existing guidelines such as the ten-times rule and modern standards on structural equation modeling. The study used a non-probability convenience sampling method to find participants via online platforms like social media, email services and online consumer communities. The method is commonly applicable in e-commerce studies because it is pragmatic and successful in reaching digitally active groups.

2.4 Data Collection Instrument

A structured self-administered questionnaire was used to gather the data based on the already validated scales mentioned in the consumer trust and e-commerce literature. Anything measured involved a five-point Likert scale, that is, 1 (strongly disagree) to 5 (strongly agree). The questionnaire was divided into parts that dealt with demographic factors, determinants of trust (perceived security, protection of privacy, quality of the website, perceived risk and reputation of the vendor), consumer trust, and online purchasing behavior. The questionnaire was conducted in the English language which is widely spoken in online transactions and higher education in Pakistan.

2.5 Measurement of Constructs

All study constructs were represented as reflective latent variables, which are in line with previous empirical studies. Perceived security measured the perceptions of respondents with respect to the safeties of online purchases and security of financial information. The protection of privacy gauged attitudes of confidentiality and responsible management of personal information. Quality of websites encompassed usability, design and informational adequacy of internet sites. Perceived risk involved the ability to lose money, quality of products and consistent delivery. Vendor reputation was in terms of perception of seller credibility and reliability. Consumer trust was the general belief of the respondents in online vendors and online purchase behavior described tendencies and intentions associated with the involvement into online shopping. Measurement of each construct was based on various indicators derived out of validated instruments.

2.6 Pilot Testing

The first pilot test was also carried out to test the questionnaire item comprehensibility, relevance, and clarity. Pilot participant feedbacks were utilized to improve item wording and help it be contextually appropriate. Information collected during the pilot study was not subject to the final analysis.

2.7 Data Analysis Procedure

The analysis of data was performed by the means of SmartPLS software after a two-step analysis process. It was done in the first stage, where the measurement model was evaluated and reliability and validity of the constructs were determined. In the second phase, structural model was tested to determine the hypothesized relationships between the constructs.

2.8 Measurement Model Assessment

The measurement model has been tested through the measurement of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. To measure reliability of the indicators, outer loadings were used, with score more than 0.70 as acceptable. Cronbach alpha and composite reliability were used to assess internal consistency reliability, and the threshold values were over 0.70. The evaluation of the convergent validity was conducted by the Extractions of the Average Variance (AVE), and any 0.50 and above is considered sufficient convergence. The Heterotrait monomethod (HTMT) ratio was used to assess discriminant validity, with the ratio values kept below the recommended values.

2.9 Structural Model Assessment

Path coefficients and statistical significance of path coefficients of the structural model were evaluated through bootstrapping procedures. The explanatory power of endogenous constructs was measured using the coefficient of determination (R^2). The effect sizes (f^2) were analyzed to find the relative effect of exogenous variables, and predictive relevance (Q^2) was measured through blindfolding.

2.10 Mediation Analysis

A bootstrapping approach was used in the study to investigate the mediating effect of consumer trust in the correlation between determinants of trust and online purchase behavior. The relationships between the exogenous variables and the outcome construct were studied to investigate the extent to which consumer trust played a significant role in the relationships.

2.11 Ethical Considerations

The study was conducted in strict regards to ethics. The overall participation was voluntary, and informed consent was taken electronically before the questionnaires were filled in. The anonymity and confidentiality of the respondents were guaranteed and no personally identifiable information was gathered. All the data were utilized only in academic research.

Results
3.1 Respondent Profile
3.1 Respondent Profile
The demographic variables of the respondents are displayed in Table 3.1. The sample was composed of 174 males (57.6%) and 128 females (42.4%). The majority of respondents (41.1%) were between the age of 26 and 35 years, 30.5% between the ages of 18 and 25 years, 19.9% between the ages of 36 and 45 years, and 8.6% of respondents were above 45 years. As to education, most had a bachelor (46.0%), a master (27.2%), intermediate or less (18.5%), and MPhil/PhD (8.3%) education. Almost half of the respondents were also employed (48.3%), (26.5%) were students, (15.9%) were self-employed and 9.3% were unemployed. The PKR 30,000-60,000 had the highest proportion of income at 33.8 percent, then PKR 60,000-100,000 (27.8%), below PKR 30,000 (23.2%), and above PKR 100,000 (15.2%). The frequency of online shopping indicated that 31.1% of the respondents did their shopping every month, (29.8%) every now and then, (23.8%) every week, and 15.2% over a week.

Table 3.1: Demographic Characteristics of Respondents (n = 302)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	174	57.6
	Female	128	42.4
Age Group (years)	18–25	92	30.5
	26–35	124	41.1
	36–45	60	19.9
	>45	26	8.6
Education Level	Intermediate or below	56	18.5
	Bachelor's degree	139	46.0
	Master's degree	82	27.2
	MPhil/PhD	25	8.3
Employment Status	Student	80	26.5
	Employed	146	48.3
	Self-employed	48	15.9
	Unemployed	28	9.3
Monthly Income (PKR)	< 30,000	70	23.2
	30,000–60,000	102	33.8
	60,001–100,000	84	27.8
	>100,000	46	15.2
Online Shopping Frequency	Occasionally	90	29.8
	Monthly	94	31.1
	Weekly	72	23.8
	More than once per week	46	15.2

3.2 Preliminary Data Assessment

Table 3.2 shows the mean and standard deviation of the constructs of the study described using descriptive statistics. The highest mean score was observed in terms of quality of the websites (M = 3.83, SD = 0.67), the reputation of the vendor (M = 3.79, SD = 0.70), perceived security (M = 3.76, SD = 0.72), consumer trust (M = 3.74, SD = 0.65), and purchase behavior online (M = 3.67, SD = 0.71). There was also a rather high mean in privacy protection (M = 3.68, SD = 0.69). Perceived risk had a lower reported mean score (M = 2.89, SD = 0.74) and hence the degree of agreement is lower. All in all, the values of standard deviations indicate that the variability is not too high, which is why the data can be analysed using PLS-SEM.

Table 3.2: Descriptive Statistics of Observed Variables

Construct	No. of Items	Mean	Standard Deviation
Perceived Security	4	3.76	0.72
Privacy Protection	4	3.68	0.69
Website Quality	5	3.83	0.67
Perceived Risk	4	2.89	0.74
Vendor Reputation	4	3.79	0.70
Consumer Trust	5	3.74	0.65
Online Purchase Behavior	4	3.67	0.71

3.3 Measurement Model Assessment

Table 3.3 presents the results of measurement model. Tables 3.4, 3.5, and 3.6 are the results of measurement model. The reliability of the indicators was determined since all the outer loadings were above the recommended 0.70 and were between 0.76 and 0.88 (Table 3.3). Internal consistency reliability was established, and the Cronbach alpha coefficients were 0.78 to 0.88, the composite reliability coefficients were 0.86 to 0.92 (Table 3.4). The convergent validity was supported because the values of Average Variance Extracted (AVE) were above the 0.50 threshold figure in all constructs, with the values ranging between 0.60 and 0.70 (Table 3.5). The discriminant validity was also established by the HTMT ratio, the entire set of HTMT values was lower than the established criterion, which is good construct distinctiveness (Table 3.6).

3.3.1 Indicator Reliability

All the indicators proved acceptable outer loadings, exceeding the recommended threshold of 0.70.

Table 3.3: Outer Loadings of Measurement Items

Construct	Item	Outer Loading
Perceived Security	PS1	0.81
	PS2	0.84
	PS3	0.79
	PS4	0.82
Privacy Protection	PP1	0.78
	PP2	0.81
	PP3	0.83
	PP4	0.80
Website Quality	WQ1	0.84
	WQ2	0.86
	WQ3	0.82
	WQ4	0.79
	WQ5	0.85
Perceived Risk	PR1	0.76
	PR2	0.80
	PR3	0.78
	PR4	0.81
Vendor Reputation	VR1	0.83
	VR2	0.85
	VR3	0.81
	VR4	0.84
Consumer Trust	CT1	0.86
	CT2	0.88
	CT3	0.84
	CT4	0.87
	CT5	0.85
Online Purchase Behavior	OPB1	0.82
	OPB2	0.85
	OPB3	0.80
	OPB4	0.83

3.3.2 Internal Consistency Reliability

Table 3.4: Reliability Statistics

Construct	Cronbach's Alpha	Composite Reliability
Perceived Security	0.82	0.88
Privacy Protection	0.80	0.87
Website Quality	0.85	0.90
Perceived Risk	0.78	0.86

Vendor Reputation	0.83	0.89
Consumer Trust	0.88	0.92
Online Purchase Behavior	0.81	0.88

3.3.3 Convergent Validity

Table 3.5: Average Variance Extracted (AVE)

Construct	AVE
Perceived Security	0.64
Privacy Protection	0.62
Website Quality	0.66
Perceived Risk	0.60
Vendor Reputation	0.65
Consumer Trust	0.70
Online Purchase Behavior	0.63

3.3.4 Discriminant Validity

Table 3.6: HTMT Ratio

Construct	PS	PP	WQ	PR	VR	CT	OPB
PS	—						
PP	0.62	—					
WQ	0.65	0.61	—				
PR	0.48	0.44	0.51	—			
VR	0.68	0.63	0.66	0.49	—		
CT	0.72	0.69	0.74	0.55	0.76	—	
OPB	0.60	0.57	0.62	0.46	0.65	0.71	—

3.4 Structural Model Assessment

The results of the structural model are summarized in Tables 3.7 to 3.11. The collinearity test revealed no issue of multicollinearity as all the variance inflation factor (VIF) fell within the range of 1.89 to 2.31 (Table 3.7). Path analysis indicated that consumer trust significantly depended on perceived security (8 0.21, t = 4.98, p < 0.001), protection of privacy (8 0.18, t = 4.22, p < 0.001), quality of the web site (8 0.24, t = 5.31, p < 0.001) and vendor reputation (8 0.29, t = 6.12, p < 0.001) but not perceived risk (Online purchase behavior was also very largely affected by consumer trust (0.67, t = 15.84, p < 0.001). The model accounted 64 percent of the variance on the consumer trust and 45 percent of the variance on the online purchase behaviour (Table 3.9). The results of the effect size analysis revealed that trust determinants had small to moderate effect and consumer trust had a large effect on purchase behavior (Table 3.10). The positive Q 2 value of consumer trust (0.39) and online purchase behavior (0.31) indicated the positive predictive relevance (Table 3.11)

3.4.1 Collinearity Assessment

Table 3.7: Variance Inflation Factor (VIF)

Predictor	VIF
Perceived Security	2.11
Privacy Protection	2.03
Website Quality	2.24
Perceived Risk	1.89
Vendor Reputation	2.31

3.4.2 Path Coefficients and Hypothesis Testing

Table 3.8: Structural Path Coefficients

Hypothesis	Path	β	t-value	p-value	Result
H1	PS → CT	0.21	4.98	<0.001	Supported
H2	PP → CT	0.18	4.22	<0.001	Supported
H3	WQ → CT	0.24	5.31	<0.001	Supported
H4	PR → CT	−0.16	3.89	<0.001	Supported
H5	VR → CT	0.29	6.12	<0.001	Supported
H6	CT → OPB	0.67	15.84	<0.001	Supported

3.4.3 Coefficient of Determination

Table 3.9: R² Values

Endogenous Construct	R^2
Consumer Trust	0.64
Online Purchase Behavior	0.45

3.4.4 Effect Size

Table 3.10: Effect Size (f²)

Path	f^2
PS → CT	0.06
PP → CT	0.05
WQ → CT	0.08
PR → CT	0.04
VR → CT	0.12
CT → OPB	0.45

3.4.5 Predictive Relevance

Table 3.11: Q² Values

Construct	Q^2
Consumer Trust	0.39
Online Purchase Behavior	0.31

3.5 Mediation **Analysis**
Mediation analysis results shown in Table 3.12. The indirect effects of perceived security ($\beta = 0.14$, $t = 4.21$, $p < 0.001$), privacy protection ($\beta = 0.12$, $t = 3.89$, $p < 0.001$), website quality ($\beta = 0.16$, $t = 4.76$, $p < 0.001$), perceived risk ($\beta = -0.11$, $t = 3.42$, $p < 0.001$), and vendor reputation ($\beta = 0.19$, $t = 5.33$, $p < 0.001$) on online purchase behavior through consumer trust were all statistically significant, indicating partial mediation in all cases.

Table 3.12: Indirect Effects via Consumer Trust

Independent Variable	Indirect Effect	t-value	p-value	Mediation
Perceived Security	0.14	4.21	<0.001	Partial
Privacy Protection	0.12	3.89	<0.001	Partial
Website Quality	0.16	4.76	<0.001	Partial
Perceived Risk	−0.11	3.42	<0.001	Partial
Vendor Reputation	0.19	5.33	<0.001	Partial

3.6 Summary of Hypotheses Testing
The results of the hypothesis testing are presented in table 3.13. All the hypothesized relationships were confirmed, such as the positive impact of perceived security, privacy protection, Web site quality, and vendor reputation on consumer trust, the negative impact of perceived risk on consumer trust, the role of consumer trust in online purchase behavior, and the mediating impact on the proposed structural relationships.

Table 3.13: Summary of Hypotheses Results

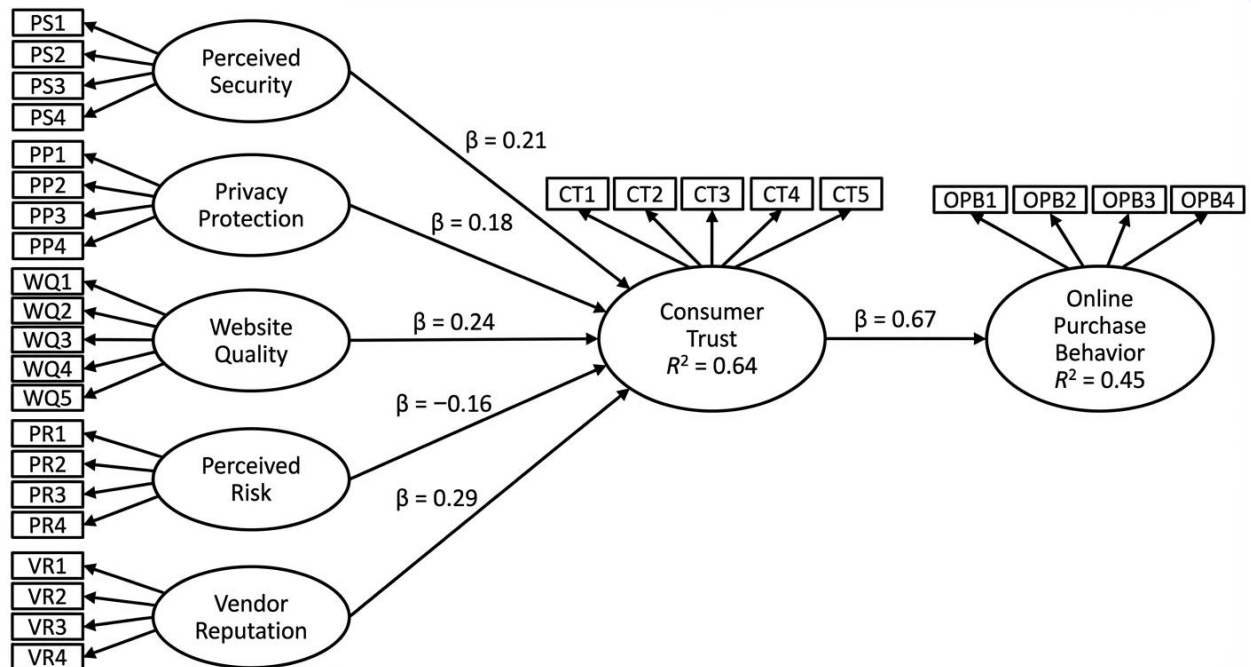| Hypothesis	Relationship	Decision
H1	Perceived Security → Consumer Trust	Supported
H2	Privacy Protection → Consumer Trust	Supported
H3	Website Quality → Consumer Trust	Supported
H4	Perceived Risk → Consumer Trust	Supported
H5	Vendor Reputation → Consumer Trust	Supported
H6	Consumer Trust → Online Purchase Behavior	Supported
H7	Consumer Trust mediates relationships	Supported

Figure 3.1: Structural equation model showing the relationships between trust determinants, consumer trust, and online purchase behavior.

Figure 3.1 shows the final structural equation model that shows the way trust determinants are related to consumer trust and online purchase behavior. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to estimate the model, which comprises both of the measurement and structural components. All the constructs are reflective as indicated by the measurement model. The multiple indicators of perceived security, privacy protection, quality of the website, perceived risk, reputation of the vendor, consumer trust, and online buying behaviour are all successful in terms of their measuring with multiple indicators, and all the indicator loadings are over and above the recommended level, indicating sufficient indicator reliability. The reflective specification suggests that the indicators are the manifestations of their latent constructs. The structural model represents consumer trust as an intervening variable between the determinants of trust and online purchase behavior. It models five exogenous variables, including perceived security, protection of privacy, quality of the websites, perceived risk and reputation of the vendor, as having direct prediction of consumer trust. Consumer trust is directly predicted to influence the endogenous outcome variable, which is online purchase behavior. The standardized path coefficients that are presented in the model show that consumer trust is positively affected by perceived security ($\beta = 0.21$), perceived privacy protection ($\beta = 0.18$), perceived quality of the website ($\beta = 0.24$), and perceived vendor reputation ($\beta = 0.29$), and negatively affected by perceived risk ($\beta = -0.16$). These findings show that consumers trust online purchases more when there is greater security, protection of privacy, quality of websites, and reputation of the vendor

whereas there is a diminished trust when the perceived risk is high. The online purchase behavior has a positive impact on consumer trust (β =0.67), which implies that consumer trust is a focal factor that guides the online shopping decision of consumers. The values of coefficient of determination (R^2) provided in the endogenous constructs show a value of 64 and 45 percent of the variation in consumer trust and online purchase behavior respectively, indicating a significant explanatory power.

4. Discussion

The current study explored the factors that influence consumer trust in Internet shopping and how it affects online shopping in Pakistan through a PLS-SEM model. The results offer an empirical evidence to the existing structural relationships, as well as emphasize the pivotal position of consumer trust as a determinant in online purchasing. In general, the findings are in line with the literature on e-commerce and consumer behavior practices as well as provide contextually relevant information in a growing digital market.

The findings show that consumer trust is impacted significantly positively by perceived security (β= 0.21, $p <.001$). This observation is consistent with the previous researches that have also revealed that secure payment systems and transaction protection increases consumer confidence in internet settings. (Aggarwal and Rahul 2018, Wutich, Thomson et al. 2023). Perceived security is seen as a very important consideration when it comes to trust formation in situations like those witnessed in Pakistan where issues to do with online fraud and security of payment are a major issue.(Anjum and Chai 2020). The present findings strengthen the argument that technical safeguards are foundational to building trust in e-commerce platforms. Equally, consumer trust was found to have a positive effect on privacy protection (β = 0.18, $p =. 001$). In line with previous studies highlighting the significance of data privacy and information control in online transactions, this finding is not surprising. (Ge, Bai et al. 2022, Chen, Huang et al. 2023). When consumers are convinced that personal information is being managed in a responsible manner, they tend to trust online vendors. The current research expands on this evidence to the Pakistani case by implying that the privacy issue is an important determinant of trust perception in new online markets (Nguyen and Khoa 2019).

The fact that the quality of websites correlates with consumer trust (β =0.24, $p <.001$) confirms the previous reports that usability, design and quality of information on the websites are signals of credibility of the vendor (Wang 2016, Srisathan, Ketkaew et al. 2024). High quality websites minimize uncertainty through the availability of clear, accurate and readily available information hence creating trust. The comparably high impact of the quality of the websites in this research indicates the sensitivity of the user-oriented web site development among online retailers competing in competitive e-commerce settings (Reychav and Wu 2015).

Conversely, perceived risk was significantly negatively related to consumer trust (β = -0.16, $p =.001$), as it is anticipated in the risk-trust model presented in the previous literature (Yang, Pang et al. 2015). Increased risk perceptions (related to financial risk

or product risk or delivery risk) make consumers less confident and less trustful of online shopping platforms. The observation highlights the importance of online sellers being proactive in controlling and mitigating perceived risk by providing clear policy statements, consistent delivery channels and efficient customer service (Lăzăroiu, Neguriţă et al. 2020).

It was also observed that the trust determinants that had the strongest positive impact on consumer trust were vendor reputation ($\beta = 0.29$, $p < .001$). The finding supports the previous studies that found that reputation is an effective trust signal in the online market, especially when the physical interaction is not provided (Hong and Cho 2011). Vendor reputation seems to be a determining factor in developing trust in the Pakistani context, where word-of-mouth, reviews, and brand credibility are major factors.

As hypothesized, the positive influence of consumer trust on online purchase behavior was statistically significant ($\beta = 0.67$, $p < .001$). This observation is in line with other researchers who state that trust is a major contributor to purchase intention and actual buying behavior in online stores (Bartikowski and Merunka 2015). The high predictive capability of the model ($R^2 = 0.45$ in the case of online purchase behavior) shows that trust is a key process by which consumers make a decision to make an online transaction.

Moreover, the mediation analysis showed that consumer trust mediates the relationship between the determinants of trust and online purchase behavior partially. This observation aligns with previous studies known to employ SEM as an intervening variable: to relate technological and relationship variables with consumer behavior (Kim et al., 2008; Zhou et al., 2018). The fact that the final model does not have the direct paths between the determinants of trust and purchase behavior also highlights the fact that the determinants of trust solely affect the purchasing behavior in terms of its effect on the trust.

5. Conclusion

The study analyzed consumer trust determinants of online shopping and its effect on online buying behavior in Pakistan through PLS-SEM. The results indicate that consumer trust is a fundamental factor in defining online purchasing behaviors and it is a major process in which the trust-related issues affect consumer behaviors.

The findings reveal that consumer trust positively correlates with perceived security, privacy protection, quality of websites, and reputation of the vendor with negative associations found with perceived risk. Of these determinants, the reputation of a vendor and the quality of a web site have proven to be quite influential in the process of forming trust. On the other hand, consumer trust was positively related to online purchase behavior and thus was significant in influencing consumers to make purchases online.

Moreover, the mediation analysis established the fact that consumer trust mediates the relationship between trust determinants and online purchase behavior partly. This observation indicates that enhancements in security, privacy, quality of websites, and

reputation have more chances of affecting buying behavior in terms of trust alone and not necessarily by its direct effects.

6. Recommendations
6.1 Practical Recommendations for Online Retailers

According to the results of this study, online stores ought to focus more on the approaches to build consumer trust. Online fraud consumer concerns can be mitigated by bettering transaction security by use of secure payment gateways and visible security assurances. Retailers are also expected to have clear and well stated privacy policies in order to assure consumers that their personal information are safely and used well without abuse and misuse. Another important suggestion is to improve the quality of the websites. The design should be easy to use, the product details should be precise and effective navigation should be able to increase the perception of professionalism and reliability among the consumers. Besides this, online retailers are advised to be proactive in terms of managing and establishing reputation of the vendors by providing consistency in service delivery, promoting authentic customer reviews and adequately responding to customer feedbacks. Trust can also be increased by trying to minimize the perceived risk, such as providing explicit return policies, on-time delivery and attentive customer service, which will also promote the tendency to make a purchase again.

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