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MARKETING | RESEARCH ARTICLE

Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping

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Abstract: This paper aims to investigate the relationship between antecedents of trust in online shopping and purchase intention. Specifically, it examines the relationship between perceived service quality, perceived website quality, and perceived reputation, as well as the mediating role of trust in online shopping and the moderating role of perceived risk between trust and online purchase intention. An online survey was used to collect data (356 valid responses) and SmartPLS structural equation modelling (PLS-SEM) was employed to hypothesize a model. Data were collected from September to December 2019. Results suggest the moderating role of perceived risk over trust in online shopping and purchase intention. The slope for the relationship between trust in online shopping and purchase intention is moderated by perceived risk, showing that the relationship becomes stronger when perceived risk is high. Trust significantly mediates the relationship between perceived service quality, website quality reputation, and online purchase intention. This work furthers web-store decision makers' understanding of the significant influence of trust and its mediating impact on online shopping and demonstrates how an increase in trust decreases the intensity of the impact of perceived risk on online purchase intention. To increase the number of sales and decrease the intensity of risk, companies must increase the level of trust, which mitigates risk and increases customer bonding with companies. As there is no consensus on the

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Sikander Ali Qalati has received his MBA in Marketing from Sukkur, IBA University. He is currently pursuing PhD in management science and engineering from Jiangsu University P.R. China. He has several publications in well-reputed SSCI journals and many more either in reviews or in process of completion, before joining Jiangsu University. He has 5 years of diverse work experience. His areas of interest are social media, brand management, management, marketing and entrepreneurship.

Sikandar Ali Qalati

PUBLIC INTEREST STATEMENT

The uncertainties of transaction handling and consumer perception toward risk have been identified as some of the major problems causing consumers' hesitance toward online shopping and payments. This work furthers web-store decision makers' understanding of the significant influence of trust and its mediating impact on online shopping and demonstrates how an increase in trust decreases the intensity of the impact of perceived risk on online purchase intention. To increase the number of sales and decrease the intensity of risk, companies must increase the level of trust, which mitigates risk and increases customer bonding with companies.

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mediating role of trust in online shopping and the moderating role of perceived risk, this paper aims to fill this gap in the literature.

Subjects: Retail Marketing; Service Marketing; Consumer Behaviour; Marketing Research; Digital Marketing

Keywords: perceived service quality; perceived website quality; perceived reputation; trust; online shopping; perceived risk; purchase intention

1. Introduction

Globally, there is an increasing trend in online shopping, which is considered a critical preference due to the wide reach of the internet. Internet usage has been continuously growing for two decades. In 2019, of the 7.676 billion population, 4.388 billion people were using the internet, of which 3.484 billion were active social media users and 3.256 billion were using the internet over mobile phones (Kemp, 2019). Asia has an estimated population of 4.24 billion, of which 2.33 billion (c. 55%) are internet users; the penetration rate in the region is 54.2% (Internet World Stats, 2019). In 2018, almost 1.8 billion people purchased online products from various platforms, including Walmart, Amazon, daraz.pk, and flipkart.com. In 2018, online retail sales reached $US2.8 trillion, estimated to be US$4.8 trillion in 2021 (Clement, 2019). The UK, China, and Finland are the top three countries dealing in e-commerce retail sales, with 76.9% of people purchasing via computers/laptop, 37% of whom are aged between 30 and 39 years; the worldwide penetration rate is 47.3% (Saleh, 2019).

Despite this growth in the usage of the internet and online shopping worldwide, in some countries, customers are still reluctant to shop online due to a lack of trust (Stouthuysen et al., 2018), privacy (Regner & Riener, 2017), education (Badwan et al., 2017), perceived risk (Pelaez et al., 2019), and perceived quality (Sahoo et al., 2018). Conversely, the motivational factors for online shopping include time-saving (Escobar-Rodríguez & Bonsón-Fernández, 2017), discounted pricing (Carlson & Kukar-Kinney, 2018), convenience (Pham et al., 2018), competitive pricing, expert advice, and greater access to information (Tarhini et al., 2018).

This study aims to analyze the factor of trust, as previous scholars consider it one of the most significant elements in online shopping (Thomas et al., 2018). Ariff et al. (2014) proposed that perceived risk is a significant issue in online shopping due to its direct influence on attitude and intention to purchase. There remains, however, a need to expand the theoretical conceptualization and provide detailed evidence for contexts in which online shopping is supported and beneficial (Hsu et al., 2018). Several theories of trust such as cue utilization suggest that trust mediates the interaction. Although trust has received significant research attention in online shopping, little attention has been paid from the process point of view and its causal relationship (Chuang & Fan, 2011); hence, the mediating role of trust has not been included. Furthermore, regarding purchase intention and its antecedents, online suppliers and e-retailer must learn that customers' first concern during buying is not the products/services but the perceived risk, which may reduce their purchase intention (Salisbury et al., 2001). Hence, perceived risk may have a moderating effect on purchase intention.

The motivation for this study includes the scant examination of the trust-building mechanism and its interactions (Chang et al., 2013), its significant impact on internet society, and intention towards online buying (Truong et al., 2017). Theoretically, this article contributes to the existing literature by offering insights into the mediating role of trust in the relationship between perceived service quality, perceived website quality, perceived reputation, perceived risk, and the moderating role of perceived risk between trust and purchase intention. Practically, this scholarship can benefit well-established and new online shopping platforms' executives regarding the importance of trust and how perceived risk affects the relationship between trust and purchase intention in the online shopping context.

2. Literature review

2.1. Perceived service quality

Perceived service quality is one of the most crucial elements of trust in online shopping (Al-dweeri et al., 2019; Hsu et al., 2018). Agag and El-Masry (2017, p. 6) defined it as "consumers' perceptions about responsiveness, empathy, and assurance." Most online selling platforms gain customer trust and build long-term relationships by providing high-quality services (Shafiee & Bazargan, 2018). Service-quality perception also affects the acceptance of online shopping (Ibrahim et al., 2019) and a significant relationship has been found between perceived retailer service quality and trust (Das, 2016). Notably, Lien et al. (2017) conducted exploratory research to examine the impact of service quality (environment quality, interaction quality, and outcome quality) on WeChat user satisfaction, and to evaluate the effects of satisfaction and stickiness on usage intention. The study, based on a sample of 310 respondents in China, found a positive influence of service quality on usage intentions. Therefore, the following hypotheses are proposed:

H1a. Perceived service quality has a significant influence on trust.

H1b. Perceived service quality has a significant influence on purchase intention.

2.2. Perceived website quality

Websites are key to firms' success, acting as the communication channel between company and customers (Chen et al., 2017; Kleinlercher et al., 2018). Di Fatta et al. (2016) conducted a meta-analysis on user-perceived web quality, concluding that it has a significant influence on ease of use, usefulness, and playfulness, and proposed that it encourages website use in online shopping. Pawlasová and Klézl (2017, p. 2047) defined term as "user's perception of the design of a website where the group-buying experience is carried." These authors studied 169 respondents from Korea and found a positive association between website quality and trust in online retailing. Notably, customer satisfaction was used as a mediator between website quality and trust.

Most previous scholars have used perceived service quality as one of the dimensions of website quality, while Sharma and Bahl (2018) used web design as an antecedent of perceived service quality. These authors found a significant relationship between web design, perceived quality, and customer trust in e-commerce. Lee et al. (2016) proposed a website-quality conceptual model reflecting four dimensions of the website quality: design; fulfillment/reliability; security, privacy, and trust; and customer service. The study concluded that all website-quality dimensions have a significant influence on purchase intention. Thus, the following hypotheses are proposed:

H2a. Perceived website quality has a significant influence on trust.

H2b. Perceived website quality has a significant influence on purchase intention.

2.3. Perceived reputation

Doney and Cannon (1997) defined perceived reputation as consumers' perception of whether a retail store is honest, concerned about its customers, and can execute its promises. It is the extent to which consumers believe a selling company is honest and concerned about its customers (Doney & Cannon, 1997). Y. Kim and Peterson (2017) meta-analysis of online trust concluded that perceived risk, security, privacy, information quality, web-design quality, system quality, and perceived reputation are critical antecedents of online trust.

Consequently, reputation is frequently considered as an important factor in customer trust (Fedorko et al., 2017) and long-term customer relationships (Suryadi et al., 2018). Previous scholars

have found the significant influence of perceived reputation on trust in online shopping (Agag & El-Masry, 2017; Rosa et al., 2018) and purchase intention (Mohseni et al., 2018). Long-term investments of resources, effort, and attention to customer relationship building are key to a company having a good reputation. Consumers tend to favor companies with a good reputation in electronic commerce as they perceive lower risk and uncertainty and know where to seek for help. Therefore, this paper hypothesizes:

H3a. Perceived reputation has a significant influence on trust.

H3b. Perceived website quality has a significant influence on purchase intention.

2.4. Trust in online shopping

According to Bauman and Bachmann (2017), online trust is the most crucial element of business strategy as it lessens perceived risk and creates positive word of mouth. They stated that during online shopping:

> " ... a consumer, as a trustor, finds himself/herself in a risky situation where he/she uses the Internet as a tool to communicate his/her needs to an e-vendor and submits private information about himself/herself. He or she chooses a method of payment. He or she expects the website to be a reliable means for the transaction and the vendor to behave honestly and professionally when fulfilling the purchase request." (Bauman & Bachmann, 2017, p. 68)

F. Khan et al. (2015) suggested there is no particular definition related to trust, which is a term used in several fields such as sociology, psychology, management, and others. These authors defined trust as "a binding force in the online shopping between buyer and seller transaction" (F. Khan et al., 2015, p. 2). The term comprises three main elements (predictability, reliability, and fairness) and is considered as an economic calculation where the values are explored by the comparisons between the relationship, creating and sustaining with the actual costs of serving it (Yuen et al., 2018). In relation to product recommendations on social networking sites such as Facebook, "perceived ability, perceived benevolence/integrity, perceived critical mass, and trust in a website were four important antecedents of trust" (S. Kim & Park, 2013, p. 321). Previous scholars have suggested that e-retailers initially exert effort to decrease the level of risk, which improves customer trust and ultimately increases purchase intention for buying online products/services. The privacy/security features of websites and shared values are also critical factors of trust in online shopping (Arnott et al., 2007; Katta & Patro, 2017). Therefore, this paper hypothesizes:

H4. Trust affects purchase intention in online shopping.

2.5. The mediating role of trust

Chuang and Fan (2011) analysis of 325 members of electronic book stores in Taiwan found the positive mediation of trust between e-retailer quality and consumers' purchase intention. The authors argued that trust is a powerful mediating determinant that needs further investigation. Hong and Cha (2013) also found a direct effect of the antecedents of perceived risks on trust and a mediation effect of trust between the perceived risk antecedents and online purchase intention. Qureshi et al.'s (2009) study, based on e-commerce and customer repurchase intention, also found a direct and indirect relationship between perceived website quality, perceived reputation, the perceived capability of order fulfillment, trust, and repurchase intention. Recently, Jeon et al. (2017) investigated the mediating role of online trust and utilitarian value between the perceived website interactivity and online travel community. The analysis, based on 227 Amazon customers, found a significant mediating role of online trust. Oghazi et al. (2018) used consumer trust as a mediator between online purchase return policy and purchase decision, based on an analysis of

730 online consumers of fast-moving consumer goods in Sweden. Stouthuysen et al. (2018) also confirmed the mediating role of institutional and competence trust between vendor-specific guarantees, customer reviews, and customer intention to buy online products. Therefore, this paper hypothesizes:

H5. Trust mediates the relationship between (a) perceived service quality, (b) perceived website quality, and (c) perceived reputation, and consumer purchase intention in online shopping.

2.6. Perceived risk and its moderating role

Chiu et al. (2014) defined perceived risk as the trade-off between cost and benefits, i.e. the overall consumer assessment of the utility of the product or service based on what is received as compared to what is paid. Ariff et al. (2014) concluded that perceived risk has a significant influence on online purchase intention, while Almousa (2011) proved that perceived risk negative affects the intention to purchase online items. Furthermore, Chiu et al.'s (2014) study of 782 Yahoo-Kimo customers found a moderation interaction effect of perceived risk between hedonic, utilitarian value, and repeat purchase intention, while Chen and Huang (2017) study of 749 respondents from Taiwan regarding commercial e-learning websites found positive effects of task-technology fit, perceived reputation, and perceived navigation on online purchase intention.

Regarding perceived risk significantly moderating the relationship between constructs, Wu and Chang (2007) found positive effects of risk attitude over repurchase intention for online shopping in Taiwan. Belanche et al.'s (2012) study, focusing on the intention to use a website, tested the moderating role of perceived risk between the website's perceived usability, customer satisfaction, and intention to use. Some scholars have also tested the direct effect of perceived risk on trust (Hong & Cha, 2013; Kim et al., 2014). Therefore, the following hypotheses are proposed:

H6. Perceived risk affects purchase intention in online shopping.

H7. Perceived risk moderates the relationship between trust and purchase intention in online shopping.

The conceptual model is depicted in Figure 1.

3. Methodology

3.1. Sampling and data collection

This study used partial-least-squares structural equation modeling (PLS-SEM) (Ringle et al., 2015) to test the hypothesized model and the mediating effect of trust in online shopping, given its widespread application in business management and related disciplines (Hair et al., 2012) and it being considered the most fully developed and comprehensive system of variance (McDonald, 1996). This study also used mediation and moderation analysis (Matthews et al., 2018).

A two-step approach was deployed to measure the second-order constructs, which allowed prediction of a more parsimonious model (Becker et al., 2012). The study sample was randomly selected from Pakistan.

An independent sample *t*-test was administered to ensure non-response bias following Armstrong and Overton (1977). A self-administered questionnaire was used for data collection. Respondents were assured that their participation would remain voluntary, confidential, and anonymous. Data collection occurred from September to December 2019. The reason for collecting data with a four-month lag time was to mitigate common method bias (M.A.S. Khan et al., 2019).

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Figure 1. Conceptual model.
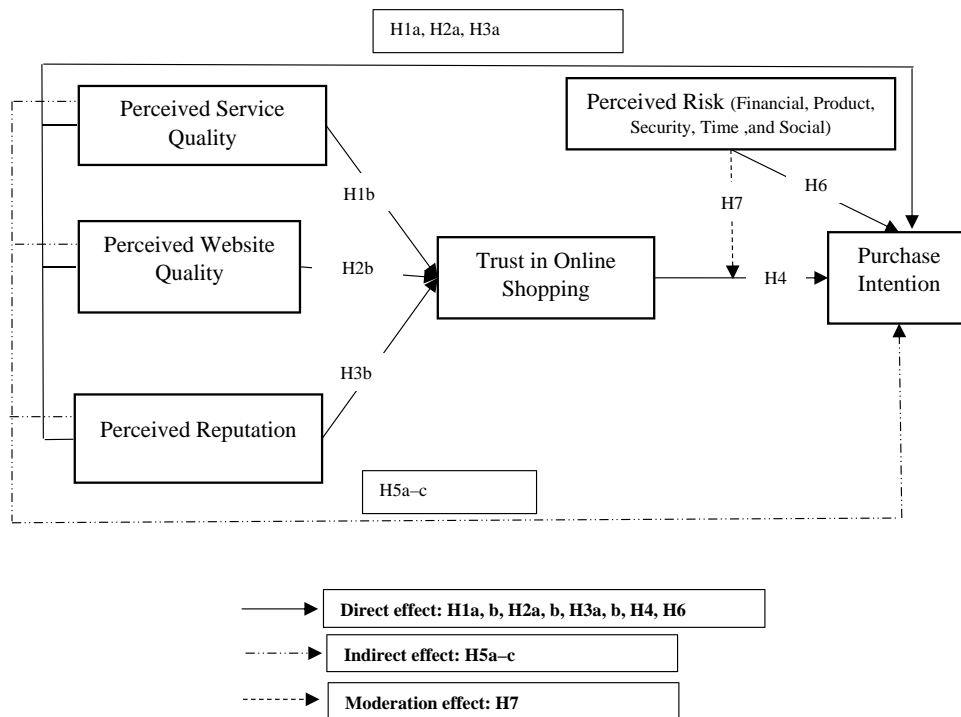
Google Forms was used to record respondents' response (https://forms.gle/pVW64D6AnK7zfKQ76). Online surveys are considered a significant and authenticated tool for new research (Manfreda et al., 2008) and also represent a fast, simple, and less costly approach of collecting data (Dutot & Bergeron, 2016). This approach also shortens the time period, and guidelines can be added when required (Dillman, 2006). Recently, online surveys have been used to collect data from the employees working in firms (Ahmad et al., 2019) and from the customers when the population is large (Carlson et al., 2019). In the present study, 600 questionnaires were distributed via social media platforms (emails, WhatsApp, Facebook, LinkedIn, etc.), resulting in 356 valid responses.

3.2. Measures

The study used five-point Likert scales (1 = "strongly disagree"; 5 = "strongly agree") to record responses. A total of 18 items, adapted from Mao (2010), were used [perceived service quality (five items), perceived website quality (five items), perceived reputation (three items), and trust in online shopping (six items)]. Perceived risk was measured using 23 items [financial risk (five items), product risk (five items), security risk (five items), time risk (four items) and social risk (four items)] adapted from Kamalul Ariffin et al. (2018). Purchase intention was assessed using three items from Oghazi et al. (2018).

4. Results

4.1. Respondents' demographic information

Table 1 reveals that, out of 356 respondents, 220 (61.8%) were male and 136 (38.2%) were female. Most respondents [170 (47.8%)] were aged between 18 and 25 years and had a master's degree [153 (43.0%)]. Thus, most were young and well educated. The majority of respondents were students [174 (48.87%)], followed by employees working in governmental and private organizations [137 (38.48%)]. Regarding choice of website, most 237 (66.6%) used Daraz.pk, followed by 119 (33.4%) others. Regarding the frequency of buying, most respondents were new and bought

Table 1. Respondents' demographic information			Frequency	Percentage
Gender	Male		220	61.8
	Female		136	38.2
Age (years)	Less than 18		33	9.3
	18–25		170	47.8
	26–30		68	19.1
	31–35		68	19.1
	Over 35		17	4.8
Education	Basic/secondary		84	23.6
	Undergraduate		119	33.4
	Master's		153	43.0
	Other		0	0
Position	Students		174	48.87
	Employee		137	38.48
	Other		45	12.64
Web store	Daraz.pk		237	66.6
	Other		119	33.4
Frequency of buying (per month)	None or 1 time		238	66.9
	2–3 times		85	23.9
	4–5 times		33	9.3
	Over 5 times		0	0
Experience of buying (years)	Less than 1		220	61.8
	1–2		85	23.9
	3–4		51	14.3
	Over 5		0	0
Social media platform used	Facebook	221		62.1
	WhatsApp	51		14.3
	Email	67		18.8
	Other	17		4.8

online less than once a month [237 (66.9%)] and had less than 1 year's experience in online shopping [220 (61.8%)]; 221 (62.1%) were using Facebook.

PLS-SEM was used to analyze the results. Several tests particularly related to reliability, validity, and path coefficients, and to ensure that data is free from multicollinearity and other data-related bias, were measured using a two-step approach (Hair et al., 2010).

4.2. Model analysis
Before conducting PLS-SEM tests, reliability, validity, and path-coefficient assumptions related to multicollinearity, normality, and bias were measured using the two-step approach proposed by (Barclay et al., 1995) to assess the measurement model and the structural model.

4.2.1. Common method bias test

We employed Harman's single factor and full collinearity tests to ensure CMB-free data. Harman's single factor test showed a single factor explained only 39.68% of the total variance, i.e. below 50.0% (Podsakoff et al., 2003).

We also employed the full collinearity approach, specifically the variance inflation factor (VIF), to detect evidence of CMB (Kock & Hadaya, 2018). The results revealed that CMB was not a concern since the VIFs were less than three (Hair et al., 2011) (Table 2).

Before moving to the analysis, we used the Kaiser–Meyer–Olkin (KMO) test to measure sampling adequacy and to ensure data suitability. The KMO value was 0.945 (over the acceptable 0.5 threshold 0.50); hence, suitable for explanatory factor analysis (Çetinkaya & Karabulut, 2016). Bartlett's test results revealed the level of significance to be 0.000 (considered good as it is below 0.05).

4.2.2. Assessment of the measurement model

Henseler et al. (2009) proposed measuring the model is required to assess the individual item reliability, internal consistency, content validity, convergent validity, and discriminant validity. Individual item reliability was assessed by outer loadings of items related to a particular dimension, the values for which should be between 0.40 and 0.70 (Hair Jr et al., 2016); all the values for this study were greater than 0.5 (Table 2). According to Nunnally (1978), the value for Cronbach's alpha should exceed 0.7; the threshold values for constructs in this study were between 0.844 and 0.935.

Internal consistency reliability (Bagozzi & Yi, 1988) requires composite reliability (CR) to be ≥0.7: the coefficient values of CR in this study were between 0.893 and 0.968. Regarding convergent validity, Fornell and Larcker (1981) recommended that average variance extracted (AVE) should be ≥0.5; AVE values in this study were between 0.568 and 0.885, confirming a satisfactory level of convergent validity. Regarding discriminant validity, according to Fornell and Larcker (1981), the square root of the AVE for each construct should exceed the inter-correlations of the construct with other model constructs. Table 3 demonstrates the discriminant validity of the results.

4.2.3. Assessment of the structural model

This paper utilized PLS bootstrapping with 5000 bootstraps and 356 cases to reveal the path coefficients and their significance (Henseler et al., 2009). Figure 2 presents the evaluations from the structural model. According to Wong (2013) the structural model should be used to assess the linear regression effects of the dependent variables on one another. A PLS assessment of the model used path co-efficient, *p*-value, and coefficients of determination (R^2) (Hair et al., 2011) (Table 4). According to Cohen (1998), R^2 values of 0.60, 0.33, and 0.19 are, respectively, substantial, moderate, and weak. In the present study, the R^2 value of 0.598 indicates that 59.8% of the variation in purchase intention occurred because of perceived service quality, website quality, reputation, trust in online shopping, and perceived risk (Table 4).

Regarding the predictive relevance of the model, bearing in mind the reflective nature of the measures, this study employed the cross-validated redundancy measure (Q^2) to evaluate the model (Ringle et al., 2012). In the structural equation model, Q^2 values larger than zero for a specific reflective endogenous latent variable indicate the path model has predictive relevance for a particular dependent construct. A predictive value of up to 0.02 indicates small relevance, values between 0.02 and 0.14 indicate medium relevance, and values greater than or equal to 0.35 indicate large relevance. This study had a large predictive relevance (Table 5).

4.2.4. Mediation and moderation analysis

This study also used mediation and moderation analysis (Matthews et al., 2018). To test the mediating role of trust in online shopping, this paper employed Hair Jr et al.'s (2016) approach. According to MacKinnon et al. (2002), *Z* mediates the link between *X* and *Y* if the direct path

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Table 2. Assessment of the measurement model

Construct	Item code	Mean	S.D	Kurtosis	Loading	CA	CR	AVE	Inner VIF
Perceived service quality	PSQ1	3.74	1.03	0.46	0.758	0.887	0.917	0.689	1.793
	PSQ2	3.66	1.22	−0.37	0.881				
	PSQ3	3.73	1.13	−0.24	0.834				
	PSQ4	3.67	1.13	−0.17	0.868				
	PSQ5	3.40	1.22	−0.56	0.804				
Perceived website quality	PWQ1	3.78	0.97	0.32	0.825	0.881	0.918	0.738	2.758
	PWQ2	3.91	1.04	0.07	0.885				
	PWQ3	4.05	1.00	0.93	0.887				
	PWQ4	3.80	1.08	−0.63	0.837				
Perceived reputation	PR1	3.83	1.06	0.22	0.884	0.853	0.911	0.773	2.856
	PR2	3.77	1.11	0.09	0.896				
	PR3	3.82	0.99	0.06	0.857				
Trust in online shopping	T1	3.84	1.09	−0.66	0.797	0.914	0.933	0.7	2.384
	T2	3.86	1.15	−0.02	0.799				
	T3	3.72	1.06	−0.52	0.874				
	T4	3.69	1.11	−0.29	0.846				
	T5	3.63	1.09	−0.20	0.812				
	T6	3.59	1.20	−0.33	0.888				
Perceived risk						0.965	0.968	0.568	1.326
Financial risk	FR1	3.70	0.98	−0.21	0.643	0.849	0.893	0.625	
	FR2	3.56	1.06	−0.55	0.662				
	FR3	3.70	1.03	−0.25	0.689				

(Continued)

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Table 2. (Continued)

Construct	Item code	Mean	S.D	Kurtosis	Loading	CA	CR	AVE	Inner VIF
	FR4	3.72	1.15	−0.79	0.775				
	FR5	3.74	1.08	−0.31	0.725				
Product risk	Prod_R1	3.71	1.06	−0.28	0.713	0.889	0.919	0.694	
	Prod_R2	3.70	1.03	−0.48	0.71				
	Prod_R3	3.76	1.05	0.00	0.757				
	Prod_R4	3.71	1.02	0.31	0.752				
	Prod_R5	3.83	1.11	−0.04	0.802				
Security risk	SR1	3.81	1.16	−0.54	0.82	0.919	0.939	0.755	
	SR2	3.77	1.11	−0.43	0.824				
	SR3	3.72	1.01	−0.13	0.831				
	SR4	3.73	1.03	−0.20	0.776				
	SR5	3.75	0.96	−0.64	0.809				
Time risk	TR1	3.62	1.13	−0.55	0.799	0.878	0.916	0.732	
	TR2	3.81	1.07	−0.53	0.788				
	TR3	3.65	0.99	−0.53	0.751				
	TR4	3.80	1.00	−0.16	0.725				
Social risk	Social_R1	3.73	1.00	−0.33	0.787	0.844	0.895	0.682	
	Social_R2	3.72	0.96	0.03	0.736				
	Social_R3	3.72	1.04	−0.14	0.774				
	Social_R4	3.48	1.07	−0.30	0.639				
Purchase intention	PI1	3.89	1.10	0.61	0.931	0.935	0.959	0.885	
	PI2	4.05	1.15	0.08	0.952				
	PI3	3.98	1.05	0.65	0.94				

Table 3. Latent variable correlation and square root of AVE

Construct	1	2	3	4	5	6	7
Perceived reputation	0.879						
Perceived risk	0.432	0.754					
Perceived service quality	0.491	0.204	0.83				
Perceived website quality	0.648	0.404	0.294	0.859			
Purchase intention	0.643	0.463	0.242	0.653	0.941		
Trust * Perceived Risk	−0.298	−0.253	−0.153	−0.252	−0.369	1	
Trust in online shopping	0.777	0.458	0.457	0.787	0.716	−0.269	0.837

Figure 2. Structural equation model.
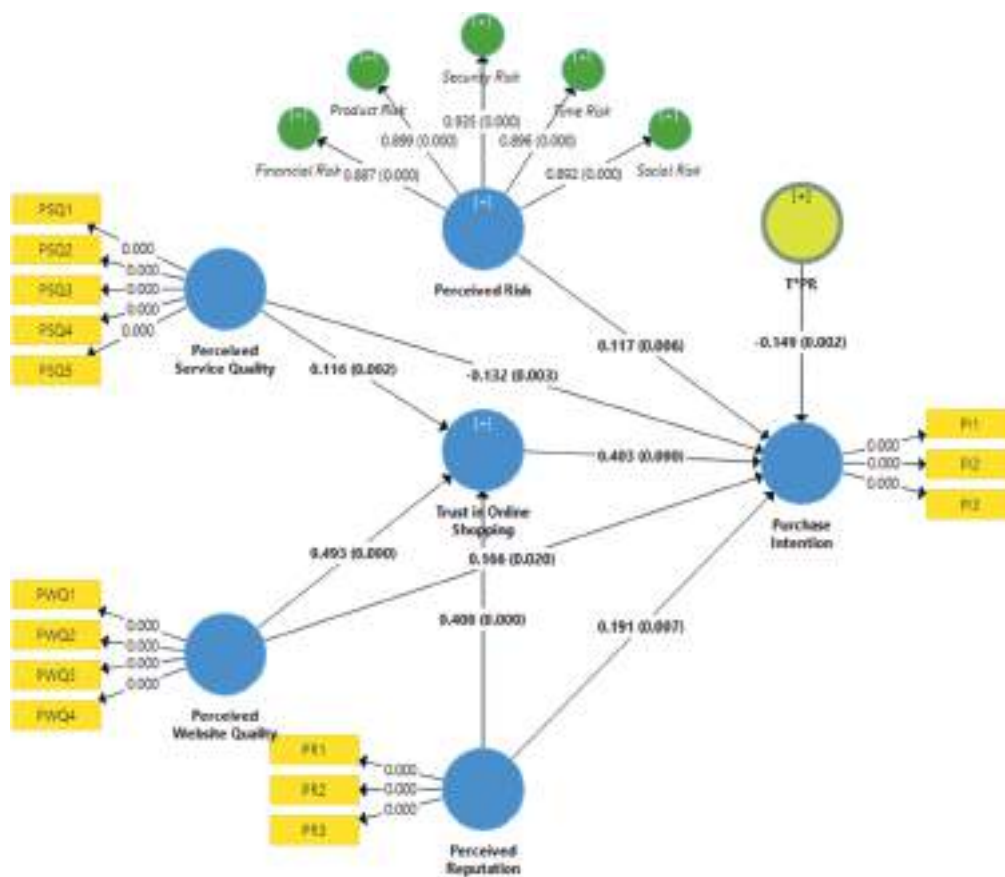
between X to Z and Z to Y is significant. According to Matthews et al. (2018), if the indirect effect is significant while direct impact is not significant, this shows full mediation; if both direct and indirect effects are substantial, there is partial mediation. Hence, in the present study, trust in

Table 4. Path coefficient and hypothesis testing

Hypotheses	Relationship	Beta	Mean	S.E	t-value	p-value	Decision
Direct effect							
H1a	Perceived service quality → Purchase intention	−0.132	−0.137	0.044	3.001	0.003	Supported
H1b	Perceived service quality → Trust in online shopping	0.116	0.117	0.038	3.061	0.002	Supported
H2a	Perceived website quality → Purchase intention	0.166	0.161	0.071	2.338	0.02	Supported
H2b	Perceived website quality → Trust in online shopping	0.493	0.498	0.035	14.036	0.000	Supported
H3a	Perceived reputation → Purchase intention	0.191	0.192	0.071	2.703	0.007	Supported
H3b	Perceived reputation → Trust in online shopping	0.4	0.395	0.046	8.707	0.000	Supported
H4	Trust in online shopping → Purchase intention	0.403	0.407	0.08	5.047	0.000	Supported
H6	Perceived risk → Purchase intention	0.117	0.115	0.042	2.778	0.006	Supported
Indirect effect							
H5a	Perceived service quality → Trust in online shopping → Purchase intention	0.047	0.048	0.019	2.474	0.014	Supported

(Continued)

Table 4. (Continued)

Hypotheses	Relationship	Beta	Mean	S.E	t-value	p-value	Decision
H5b	Perceived website quality → Trust in online shopping → Purchase intention	0.199	0.203	0.044	4.505	0.000	Supported
H5c	Perceived reputation → Trust in online shopping → Purchase intention	0.161	0.16	0.033	4.838	0.000	Supported
Moderation effect							
H7	Trust * Perceived Risk → Purchase intention	−0.149	−0.151	0.048	3.093	0.002	Supported

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Table 5. Assessment of the structural model			
Estimated model	**R^2**	**Adjusted R^2**	**Q^2**
Trust in online shopping	0.752	0.750	0.489
Purchase intention	0.598	0.591	0.490

online shopping partially mediated the relationship between perceived service quality, website quality, reputation, and purchase intention. Moreover, according to Hair Jr et al. (2016), when mediation has a positive beta coefficient, there is complementary mediation (Table 4).

The product indicator technique was deployed to identify and assess the power of the moderating effect of perceived risk on trust in online shopping and purchase intention (Chin, 2010). This study employed a product indicator method because the suggested moderating construct was continuous (Rigdon et al., 1998). Furthermore, Cohen (1998) suggested this method for assessing moderating effects. Chin et al. (2003) proposed that a low effect size does not necessarily reflect that the underlying moderating effect is insignificant. A small interaction effect can become significant under subjective moderating conditions. The present work suggests the moderating role of perceived risk over trust in online shopping and purchase intention (Figure 3). The slope for the relationship between trust in online shopping and purchase intention is moderated by perceived risk, showing that the relationship becomes stronger when perceived risk is high (see Figure 3).

5. Discussion and conclusion
This survey-based quantitative primarily describes the influence of trust in online shopping on purchase intention. This study adds to the existing limited body of literature on online shopping and expands knowledge on the importance of trust in online shopping. The outcomes of the study are interesting, given that trust partially mediated the relationships between constructs and perceived risk moderated the effects of trust in online shopping and purchase intention.

Figure 3. Moderation effect.
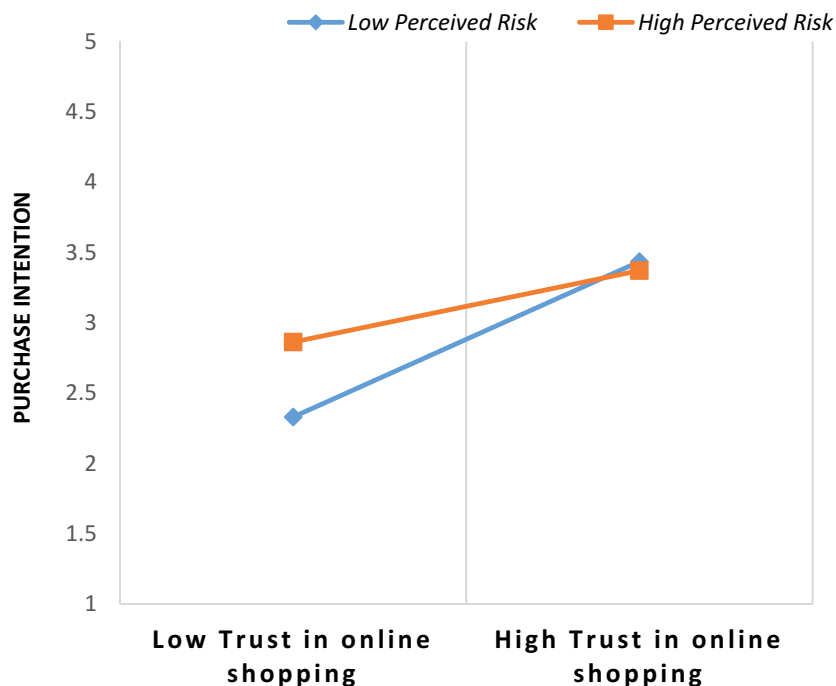
In particular, the direct effect of perceived service quality on purchase intention (*p* = 0.003) and trust in online shopping (*p* = 0.002) was found relevant in online shopping. Potential customers hold negative views regarding online shopping; the path coefficient of the perceived service quality of products and services of the web store was negative (beta = −0.132). This finding may be due to lack of trust, perceived risk, and lack of experience, consistent with Wu et al. (2018). This finding is, however, inconsistent with Das (2016) and Luo and Lee (2011). Perceived website quality was found to be the most essential factor for purchase intention (*p* = 0.02) and trust (*p* = 0.000), consistent with Hsu et al. (2018) and Thomas et al. (2018). The results suggest that web stores have given more attention to attractiveness, colors, and real-time services, and provide all the information to eliminate ambiguity. Furthermore, the perceived reputation of the web store was also found significant for purchase intention (*p* = 0.007) and trust in online shopping (*p* = 0.000). This suggests that potential customers pay more attention to branded products and the company's reputation. This may be because Pakistan has a young and well-educated population. These results are consistent with Agag and El-Masry (2017). The study found trust to be the second most essential element in online shopping (beta = 0.403; *p* = 0.000). This finding is consistent with Wu et al. (2018). In addition, perceived risk was also found significant for purchase intention (*p* = 0.000), which suggests that customers have uncertainty regarding security, loss of money and time, and social concerns. This may be because online shopping is the latest trend in the country and most respondents want to experience it. These findings are consistent with Sattar and Ameer (2014) but inconsistent with Kamalul Ariffin et al. (2018). This finding suggests that financial risk, product risk, security risk, time risk, and social risk are significant dimensions of perceived risk and that, cumulatively, perceived risk has positive effects on purchase intention in online shopping. These results are consistent with Tandon et al. (2018).

The mediating role of trust in online shopping has been assessed very little in previous studies. One of the main objectives of the study was to investigate the mediating effects of trust in online shopping in the proposed framework. This study found a significant mediating role of trust between perceived service quality and purchase intention (*p* = 0.014), perceived website quality and purchase intention (*p* = 0.000), and perceived reputation and purchase intention (*p* = 0.000). These results are consistent with Agag and El-Masry (2017) and Das (2016). Interestingly, this study found a substantial moderating effect of perceived risk between trust in online shopping and purchase intention, consistent with Chen and Huang (2017). This result suggests that perceived risk significantly mediates the relationship between trust and purchase intention.

In conclusion, web stores in Pakistan are investing huge amounts of money to increase their online business due to physical store space requiring even more money. Companies are giving more importance to online selling, which provides more benefits compared to offline selling. Likewise, consumers are more knowledgeable thanks to social media, which gives them more power and access to information related to online shopping; before making online purchases, they tend to seek information on social networking sites and get details about products and return policies. This study investigated the effects of the perceived service quality of web stores, website quality, purchase reputation, trust in online shopping and purchase intention. The study found a significant role for trust as a mediator and perceived risk as a moderator.

6. Practical contributions

Against the backdrop of continuous debate on trust, perceived risk, and service quality for web stores, this paper provides a comprehensive view of important determinants, allowing owners, executives, managers, and potential customers (decision-makers) to understand the significant effect of trust in online shopping. This paper furthers understanding of how improvements in service quality in dealing with potential customers, website content, and the reputation of the company can increase potential customers' trust and purchase intention. For instance, results reveal that trust has a significant effect on purchase intention in terms of visits to the website, increasing online orders, sign-up, "rush to website," positive reviews, and marketing for web stores on social applications. Furthermore, trust in online shopping decreases the level of perceived risk.

The most widely used applications to access and share information about web stores were Facebook and email. Before taking decisions regarding which application(s) should be included in the marketing strategy, web stores should attach more importance to emails, given that most potential customers are youngsters and students, for whom emails have more validity than other social applications. Most studies have proposed that perceived risk has a negative influence on purchase intention (Kamalul Ariffin et al., 2018; Tandon et al., 2018). This study, however, shows that, if trust is higher, perceived risk has less negative effects on purchase intention. This study provides a clear understanding of trust in online shopping and its mediating role, as results show that perceived service quality directly has a negative influence on purchase intention, while, with higher trust, it has effective and significant impacts. Ultimately, this study highlights reasons why trust should be improved and also how it can be improved.

7. Limitations and future research

This study is not free from the limitations, which highlight the avenue for future research. From a wider perspective, there may be other predecessors and influencing factors. Consequently, the involvement of only limited factors and associated elements (e.g., financial risk, social risk, product risk, time risk, security risk) may be considered a limitation. Also, the sample size of potential customers may be considered a limitation.

Moreover, the proposed model was tested in a single developing country via an online survey. The outcomes represent a snapshot at a particular time, but the effects of trust are volatile over time. Most respondents were students and employees. The present work did not connect psychological risk with perceived risk, perceived information, or content; nor did it connect perceived system quality and privacy with trust. It would be interesting to study the psychological risk and performance risk of products in relation to perceived risk, as well as the moderating effects of image consensus.

Furthermore, work could also examine product-based and service-based web stores separately. Finally, the mediating and moderating role of perceived risk should be explored further both in developed and developing countries.

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Ethical Statement
This study was carried out in accordance with the recommendation of the Ethical Principles of Psychologists and Code of Conduct by the American Psychological Association (APA). All participants gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the employees' councils of the participating organizations and the ethics committee of Jiangsu University, Zhenjiang, and PR China.

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