

## Factors Effecting Online Shopping Behaviour with Trust as Moderation

*(Faktor-Faktor Yang Mempengaruhi Tingkah Laku Belanja Dalam Talian:  
Peranan Kepercayaan Yang Sedang)*

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### ABSTRACT

*The purpose of this research is to study financial risk, product risk, privacy risk, and convenience risk influence on internet buying behaviour with trust as moderator. For this purpose, data were gathered from students that are studying in HEC recognized universities in Punjab, Pakistan. Five hundred fifty questionnaires were used for analysis by using the partial least square equation modeling technique. Outcomes reveal that financial risk, product risk, and privacy risk significantly decrease online shopping behavior. Trust significantly enhances online shopping behaviour. Trust moderates between (product risk, privacy risk, and convenience risk) and online shopping behaviour. This research is the pioneering research that tests the moderating role of trust between financial risk, product risk, privacy risk, convenience risk, and internet buying behaviour by using TPB theory and SET theory.*

*Keywords: Perceived risks; trust; online shopping behaviour*

### ABSTRAK

*Tujuan penyelidikan ini adalah untuk mengkaji risiko kewangan, risiko produk, risiko privasi, dan pengaruh risiko kemudahan terhadap tingkah laku membeli internet dengan kepercayaan sebagai moderator. Untuk tujuan ini data dikumpulkan dari pelajar yang menuntut di universiti yang diiktiraf HEC di Punjab, Pakistan. Lima ratus lima puluh borang soal selidik digunakan untuk dianalisis dengan menggunakan teknik pemodelan persamaan kuadrat separa separa. Hasil kajian menunjukkan bahawa risiko kewangan, risiko produk, dan risiko privasi secara signifikan mengurangkan tingkah laku membeli-belah dalam talian. Kepercayaan meningkatkan tingkah laku membeli-belah dalam talian dengan ketara. Kepercayaan menjadi sederhana antara (risiko produk, risiko privasi, dan risiko kemudahan) dan tingkah laku membeli-belah dalam talian. Penyelidikan ini adalah penyelidikan perintis yang menguji peranan kepercayaan yang sederhana antara risiko kewangan, risiko produk, risiko privasi, risiko kemudahan, dan tingkah laku membeli internet dengan menggunakan teori TPB dan teori SET.*

*Kata kunci: Risiko yang dirasakan; kepercayaan; tingkah laku membeli-belah dalam talian*

### INTRODUCTION

Nowadays, internet shopping is rapidly growing in developing and developed economies due to advancement in technology. According to Internet World Stats (2018) at least 4 billion online users are in the whole world in 2017 that is 577% higher than the year 2000. Guo, Du and Kou (2018) stated that online shopping provides a facility to share their experiences regarding transaction and product that helps prospective customers to perform the transaction. Internet buying provides better convenience to the online customer because of fewer efforts to purchase goods (Khan & Khan 2018). Furthermore, a customer's decision making significantly influenced because of the ease and speed of a transaction (Duarte, e Silva & Ferreira 2018). Online shopping rapidly increases day-by-day as consumers have less time to visit the market because of their busy life

(Ashraf, Thongpapanl & Razzaque 2015; Sheikh, Abbas & Mehmood 2015). Internet buying in developed nations reached maturity level but in developing economies internet shopping increasing rapidly particularly in the Pakistani economy and Indian economy (Ahmed et al. 2017) but internet shopping increasing more closer in India as equated to Pakistan. The reason for this that India is an innovative nation in online shopping area and has a protected investment from e-retailers like Flipkart, Amazon and eBay (Dutta & Bhat 2014). The government of Pakistan (2019) paid much attention on online shopping and give benefits to public at large.

Pakistan is the second lowest adopter of internet buying (Sheikh et al. 2015). This is a good research area and it motivates us to conduct research on online shopping behaviour because in Pakistan merely 3% people buying goods online besides remaining 97% people buying goods conventionally (Rehman 2018).

Despite this, online retailers have much interest in the Pakistan region due to potential in a market that online shopping grows in future (Baber et al. 2016). One of the largest reasons to purchase goods online in Pakistan is raising people that have access the internet from their smart-phones (Dawn 2016). According to the report of Shining (2020), Pakistan developed e-commerce policy framework that has various elements significant in online shopping like users, retailers trust, remedial mechanisms, and dispute resolution.

According to News (2019), Pakistan is one of the fastest rising nations in expressions of online spending and it shows that online buying sales in 2017 were 622 million dollars that are anticipated to \$ 1b in 2020. According to Tribune (2018) online shopping sales in Pakistan Rs. 20.7 billion in 2017 and it reaches to Rs. 40.1 billion in 2018 that is 93.7% higher than in 2017. Notwithstanding the considerable development and the bright upcoming of online buying, there are some negative factors such as perceived risks frequently linked with online shopping (Masoud 2013). In Pakistan, 52% of consumer feels privacy risk and 17% did not trust on online shopping that discourages customers to perform online transaction (Sheikh et al., 2015). This argument supported (Rahman, Khan & Iqbal 2018) that online customers face privacy and trust issues while shopping online. Moreover, customers face financial risk, product risk, and convenience risk that discourage customers and they avoid or reduce online shopping (Amir & Rizvi 2017; Kamalul Ariffin, Mohan & Goh 2018; Tandon, Kiran & Sah 2018). Literature recommended that privacy risk, and product risk, convenience risk (Bhatti, Saad & Gbadebo 2018b), and financial risk (Abrar, Naveed & Ramay, 2017) provides significant results in measuring online shopping behaviour.

Literature reveals that there is absence of trust besides high threats attached with online buying as compared to offline shopping because in online shopping customer face difficulty to access product physically and privacy/security issues at the time of the transaction (Bhatti & Rehman 2019a; Rehman et al. 2019a). Internet buying is called a risky task in the electronic marketplace (Almoussa 2011). The possibility of an internet buyer bears financial loss because he/she does not satisfy with product and price paid to purchase a product is higher (Featherman & Pavlou 2003). Dai, Forsythe and Kwon (2014) stated that product may not meet the required criteria of performance that originally mentioned on the website in terms of outlook, colour, and shape. In this study, we are focusing on some perceived risks (financial, product, privacy, and convenience), and trust that have an impact on internet shopping behaviour.

Theory of planned behavior (TPB), as well as Theory of reasoned action (TRA), envisages the consumer behavior, and TPB is the greatest theory that envisages consumer behavior (Taylor & Todd 1995). Moreover,

another study reveals that TPB theory extensively predicts consumer behavior (Rehman et al. 2019a). Despite this, TPB has some limitations in predicting consumer behavior as this theory ignores fear, threat, and trust in determining consumer behavior (Rehman et al. 2019a). Perceived risks play a significant impact on internet buying behavior and cannot ignore in decisive customer behavior (Kamalul Ariffin et al. 2018; Tandon et al. 2018). Moreover, trust also plays an significant role in influential the online buying behavior of customers and lack of trust reduces the online buying behavior of customers (Rahman et al. 2018). Some previous studies conclude that trust considers a crucial factor of online shopping in reducing or managing perceived risk (Biswas & Burman 2009; Büttner & Göritz 2008). In addition, literature related social exchange theory (SET) recommends that trust mitigate the relationship between risk, uncertainty, and online shopping (Anthony, Henderson & Kitts 2009; Molm, Schaefer & Collett 2009). Moreover, one of the recent studies recommend that use trust as a moderating variable among perceived risks and internet buying behavior (Rehman 2018). Besides, trust used as moderating role between intrinsic motivation, extrinsic motivation, and buying behavior (Tandon et al. 2020). Moreover, trust is used a moderator between behavioral intention and online purchase intention (Di Virgilio & Antonelli 2018). The researchers suggested that trust could be use as moderating variable in future with online shopping behavior (Rehman et al. 2019a). We used two theories in developing theoretical frameworks such as TPB theory and SET theory. TPB theory alone not fully covers theoretical framework because it originally not covers perceived risks and trust. However, SET theory used as supporting theory that covers perceived risks (threat, fear), and trust. The motivation behind this study is that prior researchers ignored to see the moderating role of trust between financial risk, product risk, privacy risk, convenience risk, and online buying behavior. Thus, this study tries to fill that gap.

## LITERATURE REVIEW

### ONLINE SHOPPING BEHAVIOR

Online shopping behaviour refers to a phenomenon when a person purchases goods and services by using internet technology because the internet is compulsory while shopping online. Literature reveals that e-commerce development and internet popularity increased online shopping transactions (Zhang, Zheng & Wang 2020). Moreover, in the competitive marketplace, organizations should follow innovative strategies to attract and retain customers (Aref & Okasha 2019). Internet buying has several advantages as compared to offline shopping. For instance, internet buying has the possible to offer an broad product assortment, more personalized material on

the product, and less time in the searching product (Levy & Weitz 2016). Online shopping behaviour becomes the most significant area in the arena of marketing (Aref & Okasha 2019).

#### FINANCIAL RISK

Financial risk theatres a substantial role in the judgment making of a purchaser to purchase online. Featherman and Pavlou (2003) stated that financial risk mentions to the probability that a person that buying online suffers financial loss in terms of money as he/she paid more and the product has less value. Moreover, financial risk consistsof the possible repair cost in case of shopping online as well as some hidden charge to maintain a product that bears customer(Popli & Mishra 2015). Masoud (2013) concludes that any kind of monetary loss either product does not perform according to expectations, quality not good, or credit card fraud significantly reduces online shopping behaviour. Literature reveals that financial risk is the most consistent factor that determines online shopping behaviour of the consumer and this factor significantly reduces online shopping behaviour(Forsythe & Shi 2003). Furthermore, financial risk considers the highest level of fear in consumer mind to suffer a monetary loss in terms of credit/debit card fraud at the time of internet buying (Abrar et al. 2017; Ueltschy, Krampf & Yannopoulos 2004). Followings are the anticipated hypotheses:

H<sub>1</sub> FR has a negative influence on OSB

#### PRODUCT RISK

Product risk means a situation where customer fully depend on the information that provided retailer online and there is a chance to suffer a loss that consumer anticipation is high but product quality low (Kamalul Ariffin et al. 2018). Likewise, product risk defined as a customer don't physically examine the product and only depends information provided on the website at the time purchasing goods online and it might result in a poor quality product (Popli & Mishra 2015). Product risk indicates the chance that the produce fails to fulfill the required performance that originally consumer expected (Zheng et al. 2012). A study conducted in Singapore concludes that 25% of the online consumers are worried regarding product quality that it does not fit the desired expectations (Teo 2002). Kamalul Ariffin et al. (2018) stated that product risk is the major cause that numerous customers do not purchase goods online. In addition, the literature reveals that product risk has a important influence on internet shop behavior (Dai et al. 2014; Zheng et al. 2012). Followings are the suggested hypotheses:

H<sub>2</sub> PDR has a negative influence on OSB

#### PRIVACY RISK

Privacy risk mentions to a situation where online customer lose their private information without any consent or permission (Featherman & Pavlou 2003). Likewise, George (2002) concludes that privacy risk significantly influences on customer decision making to purchase goods online, as once he/she face privacy risk while online shopping then in future he/she reluctant to buy goods through the internet. Privacy risk is the primary constraints for consumers while shopping online that require them to disclose their private information like contact number, birthday, and information regarding credit card (Gurung & Raja 2016). Liu, et al. (2005) concludes that the achievement of online shopping be influenced by on the protection of consumer personal information. Literature elucidates that privacy risk significantly reduces the online shopping behaviour of consumers (Masoud 2013; Mathur 2015). Followings are the suggested hypotheses:

H<sub>3</sub> PRR has a negative influence on OSB

#### CONVENIENCE RISK

Convenience risk based on consumer perception that purchased a product through the internet will take more time to reach the desired place (Hsin Chang & Wen Chen 2008). Moreover, when a consumer thinks that convenience risk level is higher this will hesitant consumer to purchase further through online (Hsin Chang & Wen Chen 2008). Likewise, convenience risk refers a fear in consumers mind about a product that it will take higher time in processing as well as returning time in the delivery of a specific product to the online buyer (Ariff et al. 2014). Literature reveals that convenience risk significantly reduces online shopping behavior (Arshad et al. 2015; Haider & Nasir 2016). Followings are the anticipated propositions:

H<sub>4</sub> CR has a negative influence on OSB

#### TRUST

Trust defined as the perception of online consumers about an online retailer is trustworthy (Kim, Xu & Gupta 2012). Traditional buying is different than online shopping because in online shopping uncertainty and ambiguity attached. The online vendors needs to build online users trust and convince them that online shopping is better than offline shopping (Rehman et al. 2019a). Literature confirmed that trust is considered a vital predictor in determining online purchasing behaviour (Akroush & Al-Debei 2015). Trust shows a significant role in decisive the online purchasing behaviour of consumers and low trust significantly reduces online shopping behaviour (Rehman et al. 2019a).Followings are the suggested hypotheses:

H<sub>5</sub> TR has a positive influence on OSB.

MODERATING ROLE OF TRUST

This study used trust as a moderating variable between financial risk, privacy risk, product risk, and convenience risk, and online buying behaviour. Few of the researchers demonstrated that financial risk (Forsythe & Shi 2003), product risk (Dai et al. 2014), privacy risk (Mathur 2015), and convenience risk (Haider & Nasir 2016) significantly reduce online shopping behaviour. Despite this, financial risk (Rehman 2018), product risk (Bhatti, Saad & Gbadebo 2018a), privacy risk (Arshad et al. 2015), and convenience risk (Tariq, Bashir & Shad 2016) has no influence online shopping behaviour. There are inconclusive findings between financial risk, product risk, privacy risk, convenience risk, and online shopping behaviour. Therefore, there is an essential to study further this relationship in different contexts. This study used trust as a moderating variable between exogenous constructs and endogenous construct. Recently, Rehman et al. (2019a) used trust as a moderating factor between consumer buying intention and online buying behavior. The researchers found that trust significantly moderates between consumer buying intention plus online buying behavior. Moreover, the researchers suggested that trust could be use as moderating variable in future with online buying behavior (Rehman et al. 2019a). Few of the researchers recommended that trust can mitigate the relationship between risk, uncertainty, and online shopping (Anthony et al. 2009; Molm et al. 2009). SET theory suggested to use trust as moderating variable because trust is a factor that can mitigates the association between uncertainty, perceived risks, and consumer behavior (Blau 1964). Thus, this study used trust as moderating variable to decrease the impact of financial risk, product risk, privacy risk, and convenience risk on online shopping behavior. Following are the proposed hypotheses.

H<sub>6</sub> Trust moderates between financial risk and online shopping behaviour

H<sub>7</sub> Trust moderates between product risk and online shopping behaviour

H<sub>8</sub> Trust moderates between privacy risk and online shopping behaviour

H<sub>9</sub> Trust moderates between convenience risk and online shopping behaviour

METHODOLOGY

Examination methodology is a central portion for any form of study in examining the objectives of research (Bhatti 2018; Rehman, Mohamed & Ayoup 2019b). Moreover, appropriate investigation techniques mandatory in attaining research goals and try to explain the practical besides theoretic problematic (Rehman et al. 2019b). This study is quantitative in nature. Deductive reasoning approach followed this study in developing proposed hypotheses as of a hypothetical framework designed on the improper of well-established theory. After developing hypotheses data were composed by using survey method. The study used cross-sectional design because of data collected from respondents at one time (Rehman et al. 2019b). After collecting the data, proposed hypotheses tested by using structural equation modeling in SmartPLS 3.2.8.

DATA COLLECTION

Data were composed by via an assessment survey technique from students that are studying in HEC recognized universities in Punjab, Pakistan. The questionnaires were distributed only to those respondents who have purchased online minimum one time. Before distributing questionnaires first gather respondents at one place then distribute.

QUESTIONNAIRE DEVELOPMENT

A theoretical model of this investigation contains of 6variables and every factor calculated to use some matters. Some prior studies used in designing questionnaire and all items adapted. The questionnaire includes forty-five items regarding financial risk, privacy risk, product risk, convenience risk, trust, and online buying behavior.

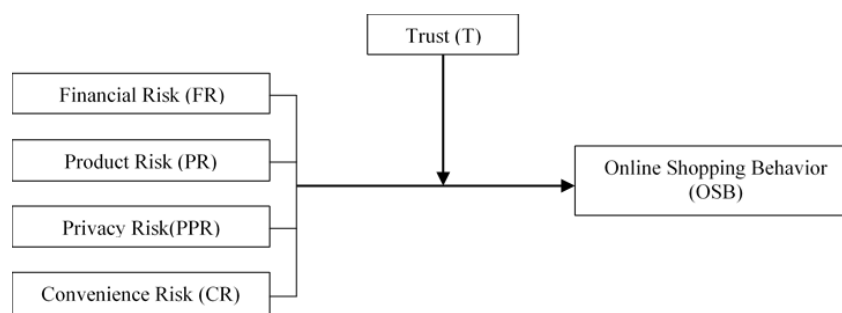


FIGURE 1. Theoretical framework

Financial risk consists of 7 items, product risk consists of 7 objects, and convenience risk consists of 3 objects and modified from (Forsythe et al. 2006), privacy risk consists of 6 objects and modified from (Tsai & Yeh 2010), trust consists of 5 objects and modified from (Constantinides, Lorenzo-Romero & Gómez 2010), and online buying behavior consists of 17 objects and modified from (Forsythe et al. 2006; Karayanni 2003; Liang & Huang 1998; Swinyard & Smith 2003).

#### POPULATION AND SAMPLING

This study conducted in Pakistan and students has selected that purchase online. Mostly the university students have intention to buy products online because they have better knowledge about technology and have sufficient finance for online shopping (Jibril et al. 2020). For the current study only 39 universities in Punjab chartered by the government of Punjab (HEC, 2018). Approximately 3, 50, 000 students registered in these universities. Total numbers of questionnaires were 1000 that distribute among students by using the personal administered technique. Significantly, every item measured in by using five-Likert scale strongly agrees (1) to strongly disagree (5). There are various reasons for five-Likert scale. Students feel easy and comfortable because they have less break time and go back to classes. Second, response rate improved in five-Likert scale because defendants fill the surveys with honesty and devotion. Third, five-Likert scale reduces the frustration level as compared to seven or nine Likert scales (Rehman, Bhatti, & Chaudhry, 2019c). Only recognized variables from prior investigation have been used, determining the constructs in five-Likert scale (Arshad et al. 2020; Bhatti, Bano & Rehman, 2019; Bhatti & Rehman 2019b; Khan et al. 2019; Kraus, Rehman & García 2020; Rehman, Bano & Bhatti 2019; Rehman, Mohamed & Ayoup 2018).

There are 12 cities in Punjab where universities situated. Majority of the universities are in Punjab (HEC, 2018). Universities in respect to cities are as follow; Lahore 16, Rawalpindi 6, Multan 6, Faisalabad 5, Bahawalpur 3, Sialkot 1, Dera Ghazi Khan 1, Rahim Yar Khan 1, Gujrat 1, Sahiwal 1, Okara 1, and Sargodha have one university. Every city considers as 1 cluster and from 12 clusters, only 05 clusters (Lahore, Rawalpindi, Multan, Faisalabad, and Bahawalpur) randomly chosen because of 84.44% of universities situated in these cities. Before using cluster sampling there is a need to define cluster and after defining cluster choose clusters randomly as recommended by (Sekaran & Bougie, 2016). Area cluster sampling has some advantages. For instance, this technique is more appropriate where respondents spread in wide range area, reduce data collection cost because it covers only significant clusters, and have advantages of simple random sampling and stratified random sampling technique (Sekaran & Bougie 2016). Comrey and Lee (1992) stated that there

are various ranks of sample size like below 50 considers weaker sample, at most 100 considers weak sample, up to 200 respondents considers adequate sample, at most 300 considers good sample size, 500 respondents consider very well sample size, and at most 1000 respondents consider excellent sample size. Hence, our study distributed 1,000 questionnaires and only 550 questionnaires used for analysis purpose. This study has sample size more than previous studies in context of online shopping behavior (Bhatti & Rehman 2019a; Rehman 2018; Rehman et al. 2019a).

#### COMMON BIAS METHOD (CBM)

This study gathered data approximately exogenous constructs and endogenous constructs at a same time by using questionnaire. Thus, there is a chance that CMB occurs that disturb the whole data (Kraus et al. 2020). Since the data was composed through a single basis, thus, primary test the matter of CMB by following the recommendation of Kock and Lynn (2012), and Kock (2015). Few of the researchers suggested to use some procedural remedies to reduce CMB influence (Kraus et al. 2020; Podsakoff, MacKenzie & Podsakoff 2012). First, to avoid this problem, the researchers give assurance to respondents that their evidence is in the safe indicators then no one can use this without your permission (Kraus et al. 2020). Second, CMB error should reduce when researchers give guarantee to defendants that questionnaires is written in easy wording, free from errors, and not lengthy questions (Podsakoff et al. 2012). This study followed Harman's single factor for CMB and results demonstrates that single factor explains 39.67% of total variance that is less than 50% (Podsakoff & Organ 1986). Therefore, there is no issue of CMB in data.

#### DATA ANALYSIS

This study used the SmartPLS 3.2.8 version in decisive the theoretic model as this SmartPLS is growing fast second generation method as recommended by (Hair et al. 2014). Bootstrapping is a technique that used in computing factors loading and path coefficients, and authors suggested running bootstrapping with 5000 subsamples to attain significant standards (Hair, et al. 2017). Some of the prior studies conclude that Partial Least Square Structural Modelling (PLS-SEM) technique is more greater in computing results and starting constructs strengths as associated to Covariance-based Structural Equation Modelling (CB-SEM) (Aftanorhan 2013; Hair et al. 2014). In PLS-SEM there is a essential to run two models like measurement model besides structural model. Measurement model used to assess instrument validity and reliability. While the structural model used to test the proposed hypotheses.

### Measurement Model

Content validity, Discriminant validity, plus convergent validity used to assess the measurement model as suggested by (Hair, Ringle, & Sarstedt, 2013). This study employs these three things in the assessment of the measurement model.

### Content Validity

Content validity means a situation where items of constructs that measure detailed variable demonstrate larger loadings on their relevant variable than additional variables in a theoretic framework (Rehman et al. 2019a). Babbie (2004), stated that content validity means a situation where items of questionnaire express the same meaning as embedded in particular concepts. In addition, no item should be higher on other construct the one it intends to amount (Barclay, Higgins & Thompson 1995). Literature concludes that cross-loadings used to evaluate the content validity of constructs and value of the particular variable would be bigger than other variables in similar columns besides rows (Chin 1998; Hair et al. 2010)Babin, & Anderson, 2010. Table 1 demonstrates content validity.

Hence, the value of cross-loadings of a specific construct is more than other constructs in same rows and columns as suggested by Hair et al. (2010).

### Convergent Validity

Convergent validity refers that all items of a variable imitate efficiently to their connected factor (Rehman et al. 2019c). Three effects required to computed convergent validity of constructs such as factor loadings, composite reliability (CR), and average variance extracted (AVE) as suggested by (Hair et al. 2013). AVE and factor loadings values should be higher than 0.50 and value of CR must be greater than 0.70 as recommended by (Hair et al. 2013). There is a need to eliminate items that have factor loadings less 0.50 to get better consequences about AVE and CR as suggested by Bhatti and Rehman (2019a). Furthermore, delete all those items that have factor loadings below 0.50 sorts a comprehensive theoretical framework. Table 2 shows that AVE, CR, and factor loadings meet the aforesaid standard. George and Mallery (2003) stated that a construct that has Cronbach's value equals to or greater than 0.70 considers excellent. Table 2 establishes that all constructs meet this Cronbach's alpha standard. Therefore, the current study confirms all the conditions that require in computing convergent validity of theoretical framework as suggested by (Bagozzi & Yi 1988). Hair et al. (2014), stated that variance inflation factors (VIF) value greater than 5 identifies that there is a multicollinearity problematic exist. In this study, VIF value less than standardized criterion and Table 2 shows that there is no issue of multicollinearity.

TABLE 1. Cross loadings

Variable	Items	FR	PDR	PPR	CR	TR	OSB
FR	FR2	0.871	-0.083	-0.089	-0.021	-0.005	-0.070
	FR3	0.827	-0.009	-0.053	-0.056	0.023	-0.035
	FR5	0.851	-0.050	-0.064	0.052	-0.011	-0.075
	FR6	0.711	0.022	-0.043	-0.015	-0.002	-0.059
PDR	PDR2	-0.026	0.793	0.028	0.142	-0.072	-0.154
	PDR4	-0.025	0.833	-0.012	0.210	-0.112	-0.149
	PDR6	-0.059	0.586	0.116	0.172	-0.007	-0.095
PPR	PR2	-0.052	0.068	0.927	0.027	0.150	0.157
	PR3	-0.091	-0.005	0.845	0.023	0.120	0.112
	PR5	-0.109	0.107	0.640	0.051	0.047	0.010
CR	CR1	-0.021	0.232	-0.004	0.873	-0.209	-0.277
	CR2	0.011	0.152	-0.005	0.772	-0.165	-0.210
	CR3	0.020	0.103	0.128	0.562	-0.060	-0.128
TR	TR2	-0.011	-0.117	0.195	-0.232	0.828	0.639
	TR4	0.017	-0.040	0.069	-0.103	0.814	0.524
	TR5	-0.007	-0.056	0.075	-0.158	0.857	0.539
OSB	OSB1	-0.140	-0.046	0.132	-0.172	0.486	0.715
	OSB10	-0.104	-0.221	0.141	-0.254	0.682	0.836
	OSB13	-0.093	-0.162	0.109	-0.218	0.589	0.796
	OSB16	-0.078	-0.178	0.013	-0.227	0.386	0.606
	OSB2	-0.103	-0.083	0.059	-0.192	0.467	0.718
	OSB4	-0.028	-0.117	0.099	-0.186	0.638	0.783
	OSB5	-0.015	-0.148	0.152	-0.291	0.720	0.823
OSB7	0.014	-0.152	0.174	-0.237	0.528	0.870	

TABLE 2. Convergent validity

Constructs	Items	Factor Loading	AVE	CR	R <sup>2</sup>	VIF (Constructs)
FR	FR2	0.871	0.668	0.889		1.008
	FR3	0.827				
	FR5	0.851				
	FR6	0.711				
PDR	PDR2	0.793	0.555	0.786		1.063
	PDR4	0.833				
	PDR6	0.586				
PRR	PR1	0.927	0.661	0.851		1.036
	PR2	0.845				
	PR3	0.640				
CR	CR1	0.873	0.558	0.786		1.101
	CR2	0.772				
	CR3	0.562				
TR	TR2	0.828	0.694	0.872		1.078
	TR4	0.814				
	TR5	0.857				
OSB	OSB1	0.715	0.597	0.921	0.672	
	OSB10	0.836				
	OSB13	0.796				
	OSB16	0.606				
	OSB2	0.718				
	OSB4	0.783				
	OSB5	0.823				
	OSB7	0.870				

#### Heterotrait-Monotrait Ratio (HTMT)

Discriminant validity refers a situation where every construct of theoretical framework varies from added constructs (Rehman et al. 2019). Moreover, Discriminant validity ensures that items of a particular construct not related to other constructs items but related to their own respective construct (Hair et al. 2014). Traditional metrics used to compute discriminant validity planned by Fornell and Larcker (1981). Henseler, Ringle and Sarstedt (2015) proposed a new way (i.e. Heterotrait-monotrait ratio – HTMT) to find discriminant validity and confirmed that traditional metric is not an appropriate method to calculate discriminant validity. The standardized value for HTMT is 0.85 for constructs theoretically different and 0.90 for variables theoretically same as suggested by Henseler et al. (2015). Table 3 highlights that all values are less than 0.85 and discriminant validity standard contented.

## RESULTS

In this section, run bootstrapping technique to observe the proposed proposition with the assistance of SmartPLS 3.2.8. As shown in Table 4 and Figure 2, we have nine hypothesis includes five direct hypotheses and four indirect (moderating) hypothesis.

Financial risk is negatively associated with online shopping behaviour by way of ( $\beta=-0.057$ ,  $t=2.257$ ,

and  $p<0.05$ ) and supported  $H_1$ . Moreover, product risk significantly reduces online shopping behaviour as ( $\beta=-0.230$ ,  $t=5.056$ , and  $p<0.05$ ) and supported  $H_2$ . Privacy risk is negatively associated with online shopping behaviour as ( $\beta=-0.087$ ,  $t=2.714$ , and  $p<0.05$ ) and supported  $H_3$ . Despite this, convenience risk has increasing influence on online shopping behaviour as ( $\beta=0.055$ ,  $t=1.997$ , plus  $p<0.05$ ) and  $H_4$  not sustained. The proposed hypotheses ( $H_4$ ) were convenience risk has a negative influence on online shopping behavior but here is positive relationship, hence,  $H_4$  not supported. In addition, trust positively associated with online shopping behaviour as ( $\beta=0.668$ ,  $t=29.941$ , and  $p<0.05$ ) and supported  $H_5$ . Moreover, there is no moderating influence of trust within financial risk and online shopping behaviour as ( $\beta=-0.010$ ,  $t=0.463$ , and  $p>0.05$ ) and  $H_6$  not supported. Trust significantly moderates within product risk and online shopping behaviour as ( $\beta=-0.125$ ,  $t=4.562$ , and  $p<0.05$ ) and supported  $H_7$ . Moreover, trust significantly moderates within privacy risk and online shopping behaviour as ( $\beta=-0.093$ ,  $t=2.407$ , and  $p<0.05$ ) and supported  $H_8$ . Finally, trust significantly moderates within convenience risk and online behaviour as ( $\beta=-0.117$ ,  $t=3.880$ , and  $p<0.05$ ) and supported  $H_9$ . Table 4 shows the results.

#### THE PREDICTIVE RELEVANCE OF THE MODEL

In this study, two techniques used to examine the predictive relevance of theoretical model; first is R-square

TABLE 3. Discriminant validity (HTMT)

Variables	Mean	S.D	FR	PPR	PDR	CR	Trust	OSB
Financial Risk	2.682	1.041						
Privacy Risk	2.542	1.088	0.082					
Product Risk	2.150	0.285	0.099	0.370				
Convenience Risk	2.583	0.976	0.119	0.120	0.144			
Trust	3.807	0.942	0.031	0.260	0.127	0.145		
Online Shopping Behavior	3.819	0.851	0.105	0.369	0.239	0.143	0.767	

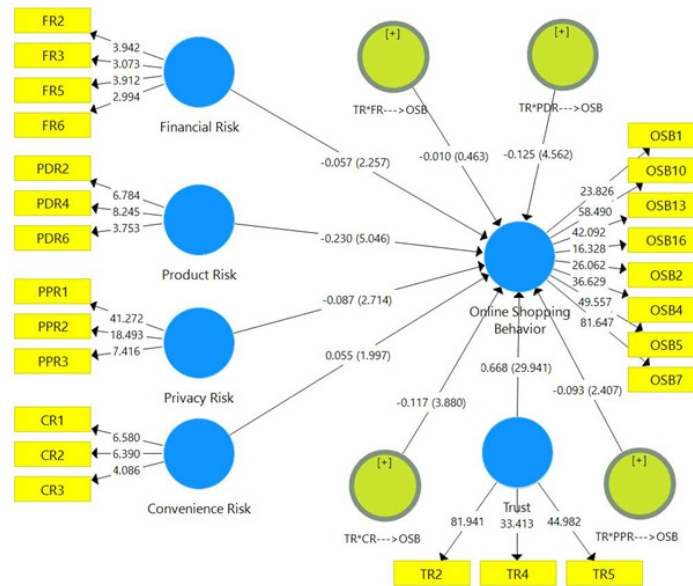


FIGURE 2. Structural model

TABLE 4. Hypotheses testing

Hypotheses	Hypotheses Paths	$\beta$ value	Std. Dev.	T-value	P-value	Results	$f^2$
H <sub>1</sub>	FR --> OSB	-0.057	0.025	2.257	0.012	Accepted	0.018
H <sub>2</sub>	PDR --> OSB	-0.230	0.045	5.056	0.000	Accepted	0.023
H <sub>3</sub>	PRR-> OSB	-0.087	0.032	2.714	0.003	Accepted	0.004
H <sub>4</sub>	CR --> OSB	0.055	0.028	1.997	0.023	Not Accept	0.032
H <sub>5</sub>	TR --> OSB	0.668	0.022	29.941	0.000	Accepted	1.655
H <sub>6</sub>	Trust*FR --> OSB	-0.010	0.022	0.463	0.322	Not Accept	---
H <sub>7</sub>	Trust*PDR --> OSB	-0.125	0.027	4.562	0.000	Accepted	---
H <sub>8</sub>	Trust*PPR --> OSB	-0.093	0.039	2.407	0.008	Accepted	---
H <sub>9</sub>	Trust*CR --> OSB	-0.117	0.030	3.880	0.000	Accepted	---

FR= Financial Risk; PPR= Privacy Risk; PDR= Product Risk; CR= Convenience Risk; TR= Trust

besides other is Q<sup>2</sup> or cross-validated redundancy(Geisser 1974; Stone 1974). R-square facilitates to examine the degree of variation of the endogenous variable that every exogenous construct explains. Table 2 shows 67.2% online shopping behaviour is jointly explained by all exogenous constructs. Cohen (1988) stated that R<sup>2</sup> within 0.02 to 0.13 have a weak impact, the R<sup>2</sup> within 0.13 to

0.26 have a moderate impact, and R<sup>2</sup> higher than 0.26 have a substantial impact. In this study, R<sup>2</sup> value of online shopping behaviour falls in the substantial case. Another thing is Q<sup>2</sup> that computed by using the blindfolding method in SmartPLS software. Literature suggests that Q<sup>2</sup> value should be higher than zero(Fornell 1994; Henseler, Ringle & Sinkovics 2009). Hence, the current



study fulfills this requirement, as  $Q^2$  of online shopping behaviour is 0.336. Cohen (1988) stated that  $f^2$  value 0.02 considers the smaller effect, 0.15 considers the moderate effect, and 0.35 or higher value considers high effect. The  $f^2$  value of financial risk, product risk, privacy risk, convenience risk, besides trust is 0.018, 0.023, 0.004, 0.032, and 1.655 respectively. It demonstrates that every exogenous construct has a smaller effect size except trust that has high effect size.

#### DISCUSSION AND CONCLUSION

The purpose of this research is to determine the impact of financial risk, product risk, privacy risk, and convenience risk on internet buying behaviour with trust as a moderator. The research was quantitative and descriptive by nature. The findings reveal that financial risk negatively connected with online shopping behaviour, and accepted our hypotheses  $H_1$ . This states that financial risk is an important indicator that must consider online vendors if they want to improve the online purchasing behaviour of consumers. The outcomes of this study same with (Forsythe & Shi 2003). Moreover, product risk significantly decreases online shopping behaviour, and hypotheses  $H_2$  accepted. It reveals that product risk considers a significant factor in determining online shopping behaviour and online vendors should focus on product risk in enhancing consumer behaviour to purchase their products. The conclusions of this study are in line with (Masoud 2013). Meanwhile, privacy risk significantly reduces online shopping behavior, and our hypotheses  $H_3$  accepted. This states that privacy risk considers a significant factor that must be in the mind of online vendors to improve online shopping behavior. The results are consistent with the findings of (Rehman 2018). Convenience risk significantly increases online shopping behavior, and our hypotheses  $H_4$  not supported. Our proposed hypotheses are that convenience risk adversely impact on online purchasing behavior but results reveals that convenience risk has a constructive impact on online purchasing behavior. Hence, our  $H_4$  hypothesis that is one tailed not sustained. Tariq et al. (2016) found that convenience risk has no effect on online shopping behavior. It means there are some other factors that decrease online shopping behavior. Trust significantly enhances online shopping behavior, and our hypotheses  $H_5$  supported. The findings are consistent with Cheung and Lee (2006). It reveals that trust is the most important element in online transactions that significantly determines the online shopping behaviour of consumers. Online vendors must be work on this factor if they want to enhance online shopping.

Moreover, trust does not moderate within financial risk and online shopping behaviour, and hypotheses  $H_6$  not supported. In addition, trust significantly moderates between product risk and online shopping behaviour, and  $H_7$  supported. Figure 3 shows that trust strengthens the

relationship between product risk and internet purchasing behavior.

Moreover, trust significantly moderates between privacy risk and online shopping behaviour, and  $H_8$  accepted. Figure 4 demonstrates that trust strengthens the connection between privacy risk and online shopping behaviour.

Moreover, trust significantly moderates between convenience risk and online shopping behavior, and our hypotheses  $H_9$  accepted. Figure 5 shows that trust strengthens within convenience risk and internet-buying behavior. This is a first study that used trust as moderating variable between financial risk, privacy risk, product risk, convenience risk, and online shopping behavior. The hypotheses  $H_1$  to  $H_3$  are in line with perceived risk theory that perceived risk significantly reduce consumer behavior. On the other hand, hypotheses  $H_4$  not in line with perceived risk theory that convenience risk decrease online shopping behavior. The hypothesis  $H_5$  is in line with SET theory, that inputs meaningfully determine output, or reduced the cost leads to the improved performance. The hypotheses  $H_7$ ,  $H_8$ , and  $H_9$  are in line with SET theory that trust mitigates the relationship among perceived risks and online shopping behavior. Despite this, hypothesis  $H_6$  is not in line with SET theory.

This study developed a theoretical framework with the help of TPB theory and SET theory. As TPB theory does not covers risks and trust that is why SET theory uses as supporting theory. The finding of the current study is in line with SET theory as trust mitigates the relationship between risks and online shopping behaviors. Out of four moderating hypotheses, only one hypothesis not supported and remaining three hypotheses accepted as SET theory tells. Prior studies ignore risks and trust by using TPB theory and SET theory. Moreover, this study significantly contributes to the literature on financial risk, product risk, privacy risk, convenience risk, trust, and online shopping behavior. In Pakistan, only 3% of consumers purchase goods online and this is an ignorant area, and there is a need to study in this area. Therefore, the current research overcomes a few of the issues that have an influence on online shopping behavior. Finally, except  $H_4$  and  $H_6$  all the hypotheses accepted and consistent with SET and TPB theory. Thus, the future researchers can see  $H_4$  and  $H_6$  again in different context to know the results that match with SET theory or not.

#### THEORETICAL IMPLICATION

This study made a major contribution in theory in standings of significantly see the impact of financial risk, product risk, privacy risk, and convenience risk on online shopping behaviour with the controlling role of trust that ignored in literature. The TPB theory ignores perceived risks and trust in determining consumer decision (Rehman et al. 2019a). Moreover, the researchers recommended that there is a need to study perceived risks and trust in examining online shopping

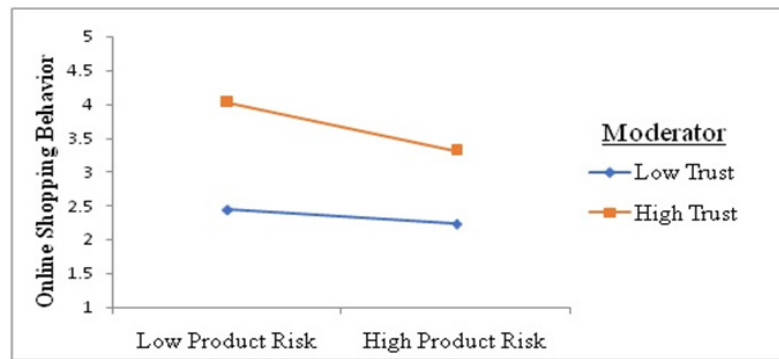


FIGURE 3. Trust moderates within product risk and internet buying behavior

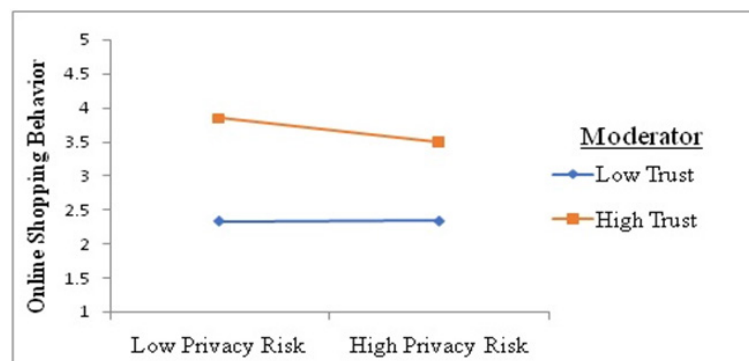


FIGURE 4. Trust moderates within privacy risk and online shopping behavior

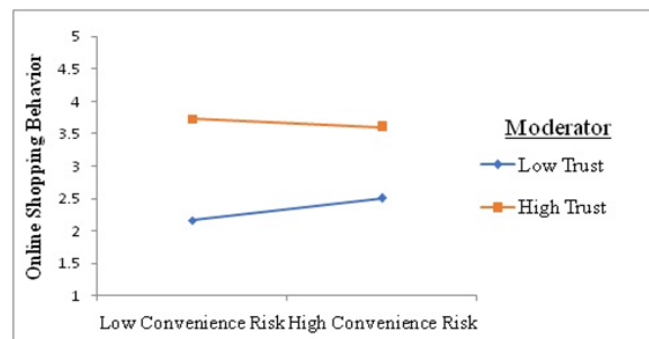


FIGURE 5. Trust moderates between convenience risk and online shopping behavior

behaviour (Rehman et al. 2019a). Thus, this study used perceived risks and trust to portion online shopping behaviour. Moreover, SET theory recommends that there is a need to use trust as a moderating variable between fear, threat (perceived risks) and online shopping behaviour, as trust can mitigate the relationship among perceived risks and online shopping behavior. Hence, this study covers this gap because prior studies ignore this. This is the pioneer study that examines the influence of financial risk, product risk, privacy risk, and convenience risk on internet buying behaviour through trust as a moderator.

PRACTICAL IMPLICATION

The results of current study have a range of practical implications for online vendors. Our study shows that financial risk, product risk, and privacy risk significantly reduce online shopping behaviour. The aim of online retailers is to enhance online shopping behavior. Thus, they can improve online shopping behavior to concentrate on perceived risks (i.e. financial risk, product risk, and privacy risk). Moreover, this study reveals that trust mitigates the relationship between (product risk, privacy risk, and convenience risk) and online shopping

behavior. Hence, this study highlights the significance of trust. The online retailers can build customer trust by assuring that there is no fear regarding financial risk, product risk, privacy risk, and convenience risk. As SET theory, suggest that trust mitigates the relationship between perceived risks and internet buying behaviour. Furthermore, this study helps the online vendor significantly focus on trust because if online consumers trust on online transactions then they will purchase in the presence of risk. This study contributes to perceived risk theory, SET theory, and TPB theory that online shopping can be predicted from perceived risks and trust.

#### LIMITATION OF THE STUDY

This research has some limitations that must recognize in future studies. First, this research was empirically held in the Pakistan context that is developing the economy. Therefore, there is a need to further study these constructs in other developing and developed economies. Second, the current research used only risks with online shopping behaviour and there is a need to study benefits with online shopping behaviour further. Third, this research used trust as a moderating variable and in future, there is a need to use consumer purchase intention as a mediating variable between perceived risks (financial risk, product risk, privacy risk, and convenience risk) and internet buying behaviour in both developed and developing economies with the help of TPB theory and SET theory.

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