



International Multidisciplinary Journal of Science, Technology, and Business

Volume No: 03 Issue No: 01 (2024) <https://doi.org/10.5281/zenodo.11031186>

Unlocking E-Commerce Potential: Exploring Pakistani Consumers' Resistance to E-Payment Adoption in Online Purchasing.

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Abstract: Previous research suggests that despite Pakistan being the world's tenth-largest internet user population and having the fourth-largest IT export industry, there's significant resistance among Pakistani consumers towards internet payment methods. This reluctance stems from factors such as distrust in financial transaction systems, concerns about delayed transactions, risk of non-delivery, lack of confidence in using such systems, fraudulent activities, and privacy concerns. Failure to address these factors adequately could impede the development of e-commerce and e-transaction systems in Pakistan.

Purpose: This study aims to explore the persuasion factors associated with e-payment methods and the reluctance of Pakistani consumers to utilize proper banking channels and introduce e-payment methods. By examining key constructs and their interrelationships, the study seeks to enhance understanding of why customers are hesitant to adopt e-payment methods.

Methodology: The study surveyed individuals who use credit/debit cards but prefer cash on delivery over online payments. Structured questionnaires were distributed to 122 respondents using convenience sampling.

Conclusion: The study concludes that perceived trust in vendors, resistance to adopting electronic payment systems (EPS), and concerns about security, and non-delivery risks are significant barriers to EPS adoption. Additionally, dissatisfaction with technical procedures further hinders system adaptation. These factors collectively contribute to consumer resistance to EPS adoption, indicating a lack of preparedness for such changes among consumers.

Key Words: E-Payment System, Perceived trust, non-delivery risk, technical transactions procedures, perceived security

1. Introduction

E-commerce has experienced rapid growth in Pakistan over recent years, presenting businesses with the opportunity to expand their buying and selling activities on a larger scale. E-commerce streamlines the purchasing and selling process between buyers and sellers, making it easier and more convenient for both parties involved (Junadi, 2015). Since the 1990s, Pakistan has had access to internet connectivity, and it ranks as the tenth most populous country in terms of internet usage, boasting around 0.07 billion users. As of 2022, approximately 82.9 million people in Pakistan were using the internet, which accounted for roughly 36.5% of the population. Analysis conducted by Kepios revealed a notable increase of 22 million users (a 35.9% surge) between 2021 and 2022. This uptick in internet users presents businesses with an opportunity to expand their customer base, as more individuals are spending increased time online (Masihuddin, et al., 2017). E-commerce refers to the utilization of digital information processing and electronic communication in various business activities, facilitating the creation, conversion, and re-establishment of efficient partnerships among businesses, organizations, and individuals. (Chanana & Goele, 2012). A payment method that does not utilize paper money is known as an e-payment system (I Daştan & C, 2016).

Kabir *et al.*, (2015) outlined the multifaceted role of the internet in the B2C e-commerce cycle, which includes functions such as product research, price comparison, online purchasing, and payment completion. The evolution of the Internet into a vast global marketplace for buying and selling goods and services has been emphasized by (Rattan et al., 2010). Despite its extensive product range, availability, and accessibility, B2C e-commerce has not fully realized its predicted potential in certain regions, as noted (Javadi & Asadollahi, 2012). The rapid advancements in wireless communication and technology have transformed global business operations, offering customers various conveniences like mobile payments, as highlighted by (Jiang et al., 2013). However, challenges persist, such as legal inadequacies in privacy protection within mobile commerce, which hinder customers' ability to exercise their rights.

The research investigates barriers to the adoption of electronic payment systems (EPS), identifying trust, alongside perceived risk, as a primary concern. Trust is described as a critical element in social and economic interactions characterized by uncertainty (Pavlou, 2003). The next factor contributing to concerns is the risk of non-delivery, which instigates apprehension regarding the possibility of products not being received. (Bhatnagar, et al., 2000) The third factor is Technical Procedures owing to their unfamiliarity with the operational aspects of different EPS products, leading to diminished trust and security perceptions when using such systems (Goudarzi, et al., 2013). The fourth factor is Perceived Security to share sensitive details, like credit card information, online or over the phone. Users prefer control over the collection, duration, and handling of their data, expressing concerns about information being gathered and stored without their awareness (Howcroft, et al., 2002).

This study aims to identify and explore factors hindering the adoption of new technologies. Customers often exhibit reluctance to embrace the latest technologies. The research also examines the factors influencing a region's readiness to adopt technology. Additionally, individual personality traits and attitudes towards technology vary. Despite Pakistan's substantial internet user population and IT export industry, resistance to internet payment methods persists, and online payments are not widely utilized. Cash remains preferred due to the lack of bank accounts and reliance on ATM withdrawals for digital transactions. Consumer characteristics and their impact on e-payment acceptance have been overlooked in previous research, despite some discussions on demographic traits and e-payment system usage.

In Pakistan, electronic payment systems (EPS) are seemingly well-established, yet adoption remains limited among consumers in the e-market. Despite the flourishing e-commerce industry, many still resist embracing modern e-payment methods. This research aims to uncover the reasons behind Pakistani consumers' reluctance to adopt e-payment systems and delve into their mindset regarding this issue.

2. Literature Review

Research by Gerrard and Cunningham (2003) examined various aspects of e-commerce, including electronic payment systems (EPS), online shopping, and banking investments. They found that perceived ease and financial benefits significantly influence adoption decisions. Chan and Lu (2004) highlighted the economic advantages of e-payment, including both fixed and transaction costs. Transaction costs refer to expenses incurred per transaction, while fixed costs involve implementing payment infrastructure like card readers and software (Chou et al., 2004). E-payment encompasses any financial transaction initiated through electronic channels, immediately linked to a deposit or credit account (Walczuch et al., 2007). The adoption of secure e-payment technologies has surged in industrialized nations, facilitating e-commerce growth (Harris et al., 2011). However, in Pakistan, cash on delivery (COD) remains a popular payment method for online transactions, potentially due to concerns about security and ease of use (Chiejina & Olamide, 2014; Dawood, 2017). The willingness to adopt new technologies, measured by the Technology Readiness Index (TRI), depends largely on individuals' openness to change (Ahmad *et al.*, 2020). Personality traits play a crucial role in technology acceptance, while uncertainties and discomfort may hinder adoption. Addressing behavioral and societal issues is essential for fostering acceptance of e-payment systems.

3. Hypothesis Development

Trust is one of the primary concerns in e-payment systems, alongside perceived risk (Aladwani, 2001). It refers to the subjective belief that a party will meet its obligations according to stakeholders' expectations, often termed goodwill (Pavlou, 2003). Previous studies have highlighted the significant influence of trust on clients' willingness to engage in e-commerce transactions and online money transfers. Scholars like Peha and Khamitov (2004) emphasize trust

as a fundamental aspect of social and economic relationships characterized by uncertainty. According to Dawood (2017), trust has historically been a driving force in buyer-seller transactions, fostering optimism for successful business relationships. Many researchers argue that trust plays a critical role in understanding social interaction and economic transactions, shaping users' perceptions of e-payment systems (Hanif, 2018). Furthermore, studies suggest that trust outweighs security concerns, with customers and merchants showing a greater willingness to use an unreliable payment system from a reputable company rather than a reliable one.

H1a: The perceived trust over financial channels may resist using the e-payment method

The decision-making process when buying is shaped by the type and extent of risk involved, as highlighted by (Cox & Rich, 1964). Buyers carefully weigh the various risks associated with a purchase, including concerns about product accuracy, financial security regarding credit card information, and the possibility of non-delivery. Additionally, there are considerations regarding understanding the purchasing and return procedures for added comfort. These risks, termed "perceived" and "anticipated" threats by Davis (1989), are commonly encountered in e-commerce transactions. As discussed by Bhatnagar et al. (2000) consumer perceptions of these risks are influenced by the uncertainty inherent in online purchasing experiences

H2: Being afraid of non-delivery risk in online shopping resistance in adapting e-payment methods.

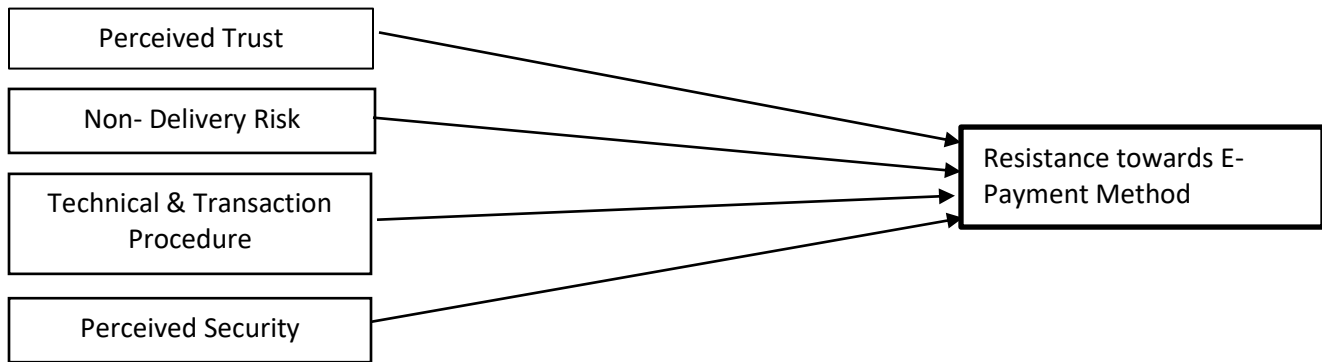
Customers are less inclined to utilize online services if they perceive that the supplier doesn't cater to their specific needs (Curran & Meuter, 2005). Protocols should prioritize user data privacy and security, introducing technology measures like integrity, privacy, and stability to enhance user confidence (Sanayei & Noroozi, 2009). However, EPS procedures can diminish trust in these systems. Aside from security, psychological factors such as effectiveness, reliability, availability, secrecy, and safety also influence consumer trust. Perceived usability positively impacts transactional intent (Goudarzi et al., 2013). Customers are reluctant to adopt technology unless they perceive it as easy to use. This hesitance towards online payments stems from a lack of understanding about various EPS products and decreased trust and security (Goudarzi et al., 2013). Additionally, customers value technology more when it requires minimal effort to use. EPS employs distinct procedures for completing electronic transactions, blending both transactional and technological aspects.

H3: The technical and transactional procedure may resist adopting an e-payment method

Numerous banking studies have underscored the importance of privacy and security in the advancement of online banking (Hamlet & Strube, 2000). In the realm of online payments, perceived security and privacy are paramount. If consumers perceive an online payment system as posing security or privacy risks, they are likely to abstain from using it for transactions (Tan & Teo, 2000). Perceived security refers to consumers' subjective belief that their personal information, especially financial data, will not be viewed, tampered with, or retained by

unauthorized parties during transmission and storage, aligning with their confidence and expectations (Black et al., 2002). Concerns about the privacy of online information are prevalent among a majority of customers and may influence their future online shopping behaviors (Howcroft et al., 2002). As the internet's array of services and goods expands rapidly, consumers are increasingly wary of privacy and security issues (Chan & Lu, 2004). They seek control over the collection, retention, and handling of their data, expressing concerns about data collection and storage practices, even when they are aware of them.

H4: Privacy concerns may reluctant to adopt an e-payment system



4. Methodology

4.1. Research Design

The quantitative approach, rooted in the positivist paradigm, forms the basis of scientific methodology, prioritizing the collection of new data from a large population while disregarding emotions, sentiments, and contextual background. This method involves recording respondents' responses through closed-ended questionnaires, which are designed based on existing studies and fully developed variables. Survey research is employed to gather responses from the sample data, chosen to align with the quantitative and deductive research approach, which meets the study's research objectives. The study aims to investigate dominance at a specific point in time, thus employing a cross-sectional study design.

4.2. Population and Sampling Technique

The selection of the population from which the study's sample will be drawn is a critical aspect. The study's sample population consists of individuals aged 20 and older who engage in online shopping. Sampling is the process of selecting a subset of the population for analysis. In this study, a sample is drawn from the population, consisting of individuals who engage in online shopping and utilize different payment methods, including cash on delivery and online payments via credit or debit cards, internet banking, and payment applications. Due to the accessibility of the population, a non-probability technique, specifically convenience sampling, is employed to

distribute a structured questionnaire. The unit of analysis for the study is individuals who are reluctant to adopt new online payment methods despite the rapidly evolving technology, hindering e-commerce businesses.

4.3. Methods

The items were fully developed and are added to the existing studies. The questionnaire was distributed through WhatsApp groups and social media applications. From over 1.8 Million banking customers 500 were selected through random sampling and were sent a questionnaire. The data was collected on a 5-point Likert scale. Kim *et al.* (2010) created a Perceived Trust scale, comprising four items, with one item adapted from Javadi *et al.* (2012) for Non-Delivery Risk, consisting of two items. Oney *et al.* (2017) developed a Perceived Security scale, comprising four items, while Barkhordari *et al.* (2017) devised a Technical Transaction Procedure scale with eight items. Resistance toward E-Payment was measured using a scale developed by Sinha and Liébana-Cabanillas (2020) and Amit and Rambalak (2020), consisting of three items.

5. Results

The analysis is done on the statistic software Smart PLS. The Demographic analysis, Discriminant Validity, Reliability, Multi-collinearity, and Convergent Validity are examined and reported in this section. The Structure Equation Modeling is used to test the hypothesis and the Indirect Effect is used to examine the Mediating variable.

5.1. Demographic Analysis

The study incorporated five demographic items: Gender, Age, Education, Income level, Online Purchase, and Choice of Payments. Gender, Age, and Education were general questions aimed at understanding basic characteristics, while the remaining three questions were tailored to the selected population for research. Analysis revealed that 61% of respondents were male, while 48% were female. The majority of respondents (67%) fell into the 20-29 age group, with 36.6% holding bachelor's degrees. Income level groups were evenly distributed, with slightly more respondents (20.000-29.000) falling into that category. Regarding behavior, 97% of respondents reported engaging in online shopping, with 74.8% opting for cash on delivery.

Table 1: Demographic Analysis

Demographics		N	%
Gender	Male	75	61
	Female	48	39
Age	20-29	67	54.5
	30-39	37	30.1
	40-49	16	13
	Above 50	3	2.4

Education	Student	16	13
	Bachelor	45	36.6
	Masters	37	30.1
	PHD	25	20.3
Income Level	20,000-40,000	34	27.6
	41,000-70,000	28	22.8
	71,000-110,000	24	19.5
	More Than 110,000	25	20.3
Bought Product Online	Yes	120	97.6
	No	3	2.4
Choice of Payment	Cash on Delivery	92	74.8
	E-Payments	31	25.2

5.2. Multi-Collinearity

Before testing the structural model, it's crucial to ensure the accuracy of the collected data. One method used for this is checking for multicollinearity using the Variance Inflation Factor (VIF). According to Hair et al. (2006), VIF values should ideally be less than 5, indicating acceptable levels for further testing. Any items with VIF values exceeding 5 were excluded from the analysis.

5.3. Factor Loading

Next, the factor loading of constructs was assessed, with values greater than 0.6 considered for inclusion in the analysis. Constructs with factor loadings below 0.6 were removed. Additionally, any variables in the perceived trust and Technical Transaction Procedure constructs with factor loadings exceeding 0.6 were excluded.

5.4. Reliability Analysis

For reliability analysis, two factors were considered: Cronbach's Alpha and Composite Reliability. According to Hair et al. (2006), values should be equal to or greater than 0.7 for Cronbach's Alpha and 0.75 for Composite Reliability. All variables in the study met these criteria, ensuring the validity and reliability of the variables.

Table 2: Cronbach Alpha

Construct	Cronbach's alpha	Composite reliability
PT	0.73	0.75
NDR	0.78	0.78
PS	0.83	0.80
TTP	0.94	0.95

REP	0.80	0.88
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5.5. Convergent Validity

The convergent validity is examined by the Average Variance Extracted (AVE) is examined to validate constructs. It highlights the validity of the response collected. The variable values surpassed the value of 5 and are mentioned in the table below

Table 3: Average Variance Extracted

Constructs	(AVE)
PT	0.656
NDR	0.821
PS	0.653
TTP	0.739
REP	0.720

5.6. Structural Modeling

After assessing the measurement model, which was found to be reliable and valid, the next step involved evaluating the path analysis using SMART PLS. The coefficients' values and their significance were examined to test each hypothesis individually. The results of the hypothesis tests from the path analysis were reported systematically, addressing each hypothesis according to its defined parameters.

Hypothesis 1 (H1) proposed that perceived trust in financial channels would hinder the adoption of E-Payment methods. However, the analysis revealed an insignificant effect ($\beta = 0.24$, $p < 0.01$), leading to the acceptance of H1.

Hypothesis 2 (H2) suggested that fear of non-delivery risk in online shopping would resist the adoption of E-Payment methods. Nevertheless, the results showed an insignificant effect ($\beta = -0.30$, $p < 0.01$), thereby accepting H2 ($p = 0.00$, $t = 0.11$).

Hypothesis 3 (H3) posited that technical and transactional procedures would hinder the adoption of E-Payment methods. However, the analysis indicated an insignificant effect ($\beta = 0.16$, $p < 0.05$), leading to the acceptance of H3 ($p = 0.02$, $t = 1.28$).

Hypothesis 4 (H4) proposed that perceived security concerns would be a barrier to adopting E-Payment systems. The results showed a significant effect ($\beta = 0.24$, $p < 0.01$), leading to the acceptance of H4 ($p = 0.02$, $t = 2.25$).

Table 4: Hypothesis Tests

	β	T	P	Status
NDR -> REP	0.36	3.49	0.00	Accepted
PS -> REP	0.24	2.25	0.02	Accepted
PT -> REP	0.07	1.11	0.00	Accepted
TTP -> REP	0.16	1.20	0.02	Accepted

6. Conclusion

The findings indicate that seven variables significantly influence resistance to adopting EPS. Non-Delivery Risk, Perceived Security, and Technical Transaction Procedure all play a role in hindering EPS adaptation. The study concludes that perceived trust in vendors, compounded by concerns over perceived security and non-delivery risk, contributes to resistance against adopting EPS. Users, particularly non-technologically savvy ones, may resist adaptation due to a preference for simplicity and avoidance of complexity. Overcoming this resistance may involve improving brand strategies, ensuring smooth transactions, and providing security assurances. Addressing these concerns could potentially fuel growth in Pakistan's e-commerce market. The study is limited by a small sample size, potentially biased respondent characteristics, and reliance on respondents' behavioral experiences. The chosen questionnaire items may not fully capture the constructs under study. Future research could refine this study by incorporating additional variables to better understand technological advancements and their impact on consumer behavior in the e-commerce domain.

References

- Abrazhevich, D., 2004. *Electronic payment systems: a user-centered perspective and interaction*, Eindhoven: Ph.D. thesis, Technical University of Eindhoven.
- Ahmad, H. et al., 2020. Reluctance to acceptance: factors affecting e-payment adoption in Pakistan (the integration of TRI and TAM). *SMART Journal of Business Management Studies*, 16(2), pp. 49-59.
- Aladwani, A. M., 2001. Online banking: a field study of drivers, development challenges, and expectations. *International Journal of Information Management*, Volume 21, pp. 213-225.
- Amit, S. & Rambalak, Y., 2020. How does dataveillance drive consumer online payment resistance? *Journal of Consumer Marketing*, Volume 52, pp. 100-110.
- Bandura, A., 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. NJ: Prantice-Hall, Eaglewood Cliff.
- Bandura, A., 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. 2 ed. s.l.:Social Foundations of Thought and Action.

- Bandura, A., 1997. *Self-Efficacy: The Exercise of Control*. s.l.:W. H. Freeman.
- Barkhordari, M. et al., 2017. Factors influencing adoption of e-payment systems: an empirical study on Iranian customers. *Information systems and e-business management*, 15(1), pp. 89-116.
- Bass, F. M., 1969. A New Product Growth for Model Consumer Durables. *Management Science*, 15(5), pp. 215-227.
- Bhatnagar, A., Misra, S. & Rao, R., 2000. On Risk, Convenience, and Internet Shopping Behavior. *Communications of the ACM*, 43(11), p. 98–105.
- Black, N. J. et al., 2002. Modeling consumer choice of distribution channels: an illustration from financial services. *International Journal of Bank Marketing*, pp. 161-173.
- Burton-Jones, A. & Hubona, G. S., 2006. The mediation of external variables in the technology acceptance model. *Information and Management*, 43(6), pp. 706-717.
- Chanana, N. & Goele, S., 2012. FUTURE OF E-COMMERCE IN INDIA. *International Journal of Computing & Business Research*.
- Chan, S.-c. & Lu, M.-t., 2004. Understanding Internet Banking Adoption and Use Behavior: A Hong Kong Perspective. *Journal of Global Information Management (JGIM)*.
- Chiejina, C. & Olamide, S. E., 2014. Investigating the Significance of the Day on Delivery'Option in the Emerging Prosperity of the Nigerian e-commerce sector. *Journal of Marketing and Management*, 5(1), p. 120.
- Chong, A. Y.-L., 2013. Predicting m-commerce adoption determinants: A neural network approach. *Expert Systems With Applications*, 40(2), pp. 523-530.
- Chou, Y., Lee, C. & Chung, J., 2004. Understanding m-commerce payment systems through the analytic hierarchy process. *Journal of Business Research*, 57(12), pp. 1432-1430.
- Cox, D. F. & Rich, S. U., 1964. Perceived Risk and Consumer Decision-Making—The Case of Telephone Shopping. *Journal of Marketing Research*.
- Curran, J. M. & Meuter, . M. L., 2005. Self-service technology adoption: comparing three technologies. *Journal of Services Marketing*, 19(2), pp. 103 - 113.
- Dahlberg, T., Mallat, N., Ondrus, J. & Zmijewska, . A., 2008. Past, present and future of mobile payments research: A literature review. *Electronic Commerce Research and Applications*, p. 165–181.
- Davis, F. D., 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Management Information Systems Quarterly*, Volume 13, pp. 319-340.
- Davis, F. D., Bagozzi, R. P. & Warshaw, P. R., 1992. Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology*, 22(24), pp. 1111-1132.
- Dawood, A., 2017. *Primed for Growth: An Analysis of Pakistan's eCommerce Market in 2016*, s.l.: ProPakistani.
- Dory, V. et al., 2009. The development of self-efficacy beliefs during general practice vocational training: An exploratory study. *Medical Teacher*, pp. 39-44.

- Fan, Y., Saliba, A., Kendall, E. & Newmarch, J., 2005. Speech interface: an enhancer to the acceptance of m-commerce applications. *International Conference on Mobile Business (ICMB)*.
- Gerrard, P. & Cunningham, J. B., 2003. The diffusion of Internet banking among Singapore consumers. *International journal of bank marketing*, 2(3), pp. 11-23.
- Goudarzi, S. et al., 2013. Development of an instrument for assessing the impact of trust on Internet banking adoption. *Journal of Basic and Applied Scientific Research*, pp. 1022-1029.
- Guriting, P. & Ndubisi, N., 2006. "Borneo online banking: evaluating customer perceptions and behavioral intention. *Management Research News*, Volume 29, pp. 6-15.
- Hair, J. et al., 2006. *Multivariate Data Analysis*. New Jersey: Pearson Prentice Hall.
- Hamlet, C. & Strube, M., 2000. Community banks go online. *ABA Banking Journal*, 92(3), pp. 61-64.
- Hanif, U., 2018. *Pakistan's e-commerce market nearly doubles to Rs40b*, Karachi: The Express Tribune.
- Haque, A., Ismail, A. & Daraz, A., 2009. Issues of e-banking transaction: an empirical investigation on Malayasian consumer perception. *J Appl Sci*, 9(10), pp. 1870-1879.
- Harris, H., Guru, B. & Avvari, M., 2011. Evidence of firms' perception toward electronic payment systems (EPS) in Malaysia. *International Journal of Business and Information*, 6(2), pp. 226-245.
- Hill, T., Smith, N. D. & Mann, M. F., 1987. Role of Efficacy Expectations in Predicting the Decision to Use Advanced Technologies: The Case of Computers. *Journal of Applied Psychology*, Volume 72, pp. 307-313.
- Howcroft, B., Hamilton, R. & Hewer, P., 2002. Consumer attitude and the usage and adoption of home-based banking in the United Kingdom. *International Journal of Bank Marketing*, Volume 20, pp. 111-121.
- I Daştan, C. G. & C, 2016. Factors affecting the adoption of mobile payment systems. (*EMAJ: Emerging Markets Journal*, 6(1), pp. 17-24.
- Javadi, M. H. et al., 2012. An analysis of factors affecting on online shopping behavior of consumers.. *International journal of marketing studies*, 4(5), p. 81.
- Javadi, M. H. M. D. H. R. N. M. P. A. & Asadollahi, A. R., 2012. An analysis of factors affecting on online shopping behavior of consumers. *International journal of marketing studies*, 4(5), p. 81.
- Jiang, L. A., Yang, Z. & Jun, M., 2013. Measuring consumer perceptions of online shopping convenience. *Journal of Service Management*., 2(12), pp. 44-67.
- Junadi, S., 2015. A model of factors influencing consumers' intention to use the e-payment system in Indonesia. 2(3), pp. 33-44.
- Kabir, M. A., S Z, S. & A, A., 2015. Adoption of e-payment systems: a review of the literature. *In International Conference on E-Commerce*, pp. 20-120.
- Kim, C., Tao, W., Shin, N. & Kim, K. S., 2010. An empirical study of customers' perceptions of security and trust in e-payment systems. *Electronic commerce research and applications*, 9(1), pp. 84-95.
- Luarn, P. & Lin, H.-H., 2005. Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, 21(6), pp. 873-891.

- Masihuddin, M., B U I, K., M M U I, M. & R F, O., 2017. The survey on e-payment systems: elements, adoption, architecture, challenges, and security concepts. *Indian Journal of Science and Technology*, 10(20).
- Oney, E., Guven, G. O. & Rizvi, W. H., 2017. The determinants of electronic payment systems usage from consumers' perspective. *Economic research-Ekonomska istraživanja*, , 30(1), pp. 394-415.
- Pavlou, P., 2003. Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *l. Int. J. Electron. Commer.*, 7(3), pp. 101-134.
- Pavlou, P. A., 2003. Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, Volume 7, pp. 101-134.
- Peha, J. & Khamitov, I., 2004. PayCash: a secure efficient Internet payment system. *Electronic Commerce Research and Applications*, 3(4), pp. 381-388.
- Pikkarainen, T. & Karjaluo, H. P., 2004. Consumer acceptance of online banking: An extension of the Technology Acceptance Model. *Internet Research*, pp. 224-235.
- Rattan, V., Sinha, E. M., Bali, V. & Rathore, R. S., 2010. E-Commerce Security using PKI approach. *International Journal on Computer Science and Engineering*, 2(5), pp. 1439-1444.
- Saeed, H., 2017. *The Dark Side of E-commerce in Pakistan*, s.l.: Pakwired.
- Sanayei, A. & Noroozi, A., 2009. Security of Internet Banking Services and its linkage with Users' Trust. *International Conference on Information Management and Engineering*.
- Shankar, A., Datta, B. & Jebarajakirthy, C., 2019. Are the generic scales enough to measure the service quality of mobile banking? A comparative analysis of generic service quality measurement scales to mobile banking context. *Services Marketing Quarterly*, 40(3), pp. 224-244.
- Sinha, N. & Liébana-Cabanillas, F., 2020. Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. *International Journal of Information Management*, Volume 50, pp. 191-205.
- Sugathi, B. B., 2001. Internet banking patronage: an empirical investigation of Malaysia. *Journal of Internet Banking and Commerce*, 6(1), pp. 78-90.
- Tan, M. & Teo, T. S. H., 2000. Factors Influencing the Adoption of. *Journal of the Association for Information Systems*, Volume 1.
- Usman, S., 2018. *Pakistan's e-commerce market size set to cross \$1b this year*, Karachi: The Express Tribune.
- Venkatesh , V. & Davis, F. D., 1996. A Model of the Antecedents of Perceived Ease of Use: Development and Test. *Decision Sciences*, Volume 27.
- Walczuch, R., Lemmink, J. & Streukens, S., 2007. The Effect of Service Technology Readiness on Technology Acceptance. Volume 44.
- Wang, W. & Li, H., 2011. "Factors influencing mobile services adoption: a brand-equity perspective. *Internet Research*, 22(2), pp. 142-179.