MEDIATING ROLE OF GOVERNMENT SUPPORT FOR FINTECH ADOPTION: EMPIRICAL EVIDENCE FROM ISLAMIC BANKS OF KARACHI, PAKISTAN

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Abstract

The purpose of this study is to investigate thefactors affecting fintech adoption and mediating role of government support.The collection of required data was processeddirectly from the respondents, it's also a fundamental component of research methodology. Using a self-administered questionnaire from prior researches and a Google form, the initial data was collected. A structured questionnaire survey is used to gather information for an explanatory study design. Fintech Adoption Services in the Islamic Banking Industry of Karachi Sindh will provide the study's data.The data indicate that there is a positive relationship between awareness, perceived trust, and perceived usefulness on adoption fintech. In addition, such that, the mediating role of government support between awareness and fintech adoption revealed a partial mediation effect. However, the mediating role of government support between perceived trust and fintech adoption revealed a full mediation effect. Lastly, the mediating role of government support between perceived usefulness and fintech adoption revealed a partial mediation effect. This study plays an important part in the influence that the adoption of fintech services has had on the banking industry in Karachi. This study will be helpful to organizations and employees in the banking industry who are looking to achieve a competitive advantage by increasing their use of fintech services.

Keywords: Awareness, Perceived trust, Perceived usefulness, Fintech adoption

INTRODUCTION:

Financial technology (Fintech) is an innovation that facilitates more efficient financial transactions (Leong & Sung, 2018). Fintech represents a larger user base that provides financial services as well as a global user base for instant money. Customers are influenced more by the perceived benefits of Fintech adoption than by the perceived potential risks of Fintech adoption (Chan et al., 2022). The based benefits of adopting fintech in accordance with the Sustainable Development Goals (SDGs) and the United Nations Development Programme (UNDP), including promoting zero poverty, reducing poverty, and ensuring food security. Additionally, it supports the transition to renewable energy and the protection of ecosystems within a circular economy. To increase efficiency, however, consumers must better comprehend Fintech products and services by recognizing the advantages and potential risks associated with Fintech adoption (Setiawan et al., 2021). In this regard, government support for

fintech is necessary for it to be integrated into the economy (Okfalisa et al., 2022). Governments and policymakers can assist FinTech firms strategically in promoting financial literacy and empowering individuals (Kandpa et al., 2023). The establishment of regulatory sandboxes and the improvement of incentives to encourage investment in fintech are its examples. Financial literacy includes topics such as arithmetic, compound interest, inflation, and risk spread. Understanding basic finance is necessary for managing money, influencing investment behavior, and taking advantage of new financial instruments (Hamid, &Loke, 2021). The Vietnamese government is also involved in facilitating citizens' access to technology and financial services (Nathan et al., 2022). Fintech is readily apparent as a crucial factor in strategic planning. To remain competitive in the market, banks are seeking AI-based solutions to automate expensive, laborious, and mundane tasks (Villar, & Khan, 2021). Consequently, AI has emerged as a game-changing step in the digitization and transformation of modern business.

By investing nearly eleven billion US dollars in AI by 2020, the world's economic quarter is the largest contributor to AI (Yang et al., 2022). The implementation of AI-powered equipment will enhance the effectiveness of daily operations and the consumer experience. They asserted that fundamental AI programs used by banks, such as chatbots, personalized services, or even self-carrier AI machines, will be more eco-friendly than conventional human advisory services (Rahman et al., 2022). Numerous technological advancements are causing a disruptive structural shift in the economic services industry. The widespread acceptance of these innovations, known as economic technology (FinTech), generates challenging circumstances for conventional banks and financial institutions (Alam et al., 2021). An innovative and eco-friendly patron encourages clients to transfer from conventional pricing methods towards theFinTech. Fintech has become an essential component of the financial services industry as a result of ongoing innovation (Meng et al., 2021). Fintech services go beyond e-banking and the digitization of traditional economic services. Today, the economic offering enterprise mainly focuses on the consumer, developing and deploying innovative technology that serves the economic needs and desires of users. FinTech solutions have the potential to increase productivity, reduce risk, and promote inclusive growth (Singh et al., 2020).

According to Setiawan et al., (2021), the scope of the author's work was limited to Indonesia. Therefore, suggested researching this topic in various other nations. In order to address this issue, the researcher have chosen Karachi, Sindh, Pakistan. The author of (Singh et al., 2020) suggested that future authors conduct research on the various factors of fintech adoption. To fill this void, we've identified four factors of fintech adoption: awareness, perceived trust, perceived usefulness, and government support. According to (Nathan et al., 2018), COVID-19 prevented the author from using a larger sample size. Consequently, the researcher proposed increasing the sample size. To address this deficiency, the fellow researcher increased the sample size to 200 respondents. According to (Ali et al., 2021), the author has taken the aggregate outcome of their research into account. Therefore, he recommended that future authors conduct research on Islamic Bank Users. To fill this void, we have established the Islamic Bank Users Industry in Karachi, Sindh.

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THEORETICAL FRAMEWORKAND HYPOTHESES DEVELOPMENT
TECHNOLOGY ACCEPTANCE MODEL

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Information systems research often used the technologies Acceptance Model (TAM) to describe how consumers adopt new technologies (Zaineldeen et al., 2020). Researchers have extended Fred Davis' 1989 model. According to the TAM, people embrace and employ technology based on its perceived utility and ease of use (Hamid et al., 2020). Perceived utility is how much someone thinks a technology will help them (Iriani&Andjarwati 2020). A technology's perceived ease of use is a person's opinion (Filieri et al., 2021). According to the TAM, these two characteristics directly affect a user's attitude about a technology, which affects their own behavioral intention to utilize it. Finally, user behavior

affects technology utilization. Computers, cellphones, e-commerce sites, and social media platforms have all been explained by the TAM (Zhou et al., 2021). Social influence, perceived danger, and trust may also affect technology adoption. The TAM helps designers and developers understand technology acceptance and its usage, which may help them construct more user-friendly and effective solutions.

INDUSTRIAL POLICY

Industrial policy supports important industries to boost the economy. Industrial policy encouraged private investment and innovation via targeted subsidies, tax incentives, infrastructure improvements, and other government assistance (Bradley et al., 2021). Industrial policy holds that government involvement can fix market faults and inefficiencies that hamper economic growth and development. Government funding may cover gaps in private sector research and development or other vital areas for economic growth (Ning et al., 2022). Industrial policy fostered important industries like renewable energy, information technology, and biotechnology, which had boosted economic development and social welfare. The government could boost technology, employment growth, and economic competitiveness by supporting these areas (Pradhan et al., 2020). Industrial policy theory supported government assistance for economic growth (Kihombo et al., 2021). By correcting market flaws, increasing private investment, and promoting important sectors had focused on government interventions and might boost economic growth and development (Elavarasan et al., 2022; Sheth, &Parvatiyar, 2021).

HYPOTHESIS DEVELOPMENT

AWARENESS OF FINTECH AND FINTECH ADOPTION

Rahman et al. (2021) examined, how perceived ease of use, knowledge, and risk affect Malaysian banking technology uptake. The 139 Malaysian bank clients were surveyed online using SMART PLS. Malaysia's banking industry adoptedfintech due to perceived ease of use, awareness, and risk taking. Singh et al. (2020) examined Indian banking users' Fintech Adoption, covering Awareness, Technological, and Behavioral aspects. Indian banking user questionnaires and SMART PLS SEM obtained the data. Awareness, Technological, and Behavioral Attributes positively and substantially impacted Indian banking users' Fintech Adoption. Perceived Usefulness, Risk, Awareness, and Cost impacted Malaysian Fintech Adoption (Jin et al., 2018). 120 Malaysian clients were surveyed and SMART PLS performed SEM. Perceived Usefulness, Risk, Awareness, and Cost positively and substantially had impacted Malaysian Fintech Adoption. Awareness, Technological, and Behavioral Attributes affected Japanese banking customers' Fintech Adoption (Yoshino et al., 2020). Indian banking user questionnaires and SMART PLS SEM obtained the data. Awareness, Technological Attributes, and Behavioral Attributes positively and substantially affected Fintech Adoption among Japanese banking customers. Ghazali&Yasuoka (2018) examined how knowledge and perception analysis hadaffectedfintech adoption in Japanese banking consumers. SEM using SPSS and AMOS was used to survey 190 Japanese banking customers. Awareness and perception analysis boosted Japanese bankers' fintech uptake. Millennials and Z Generation Users of Hungary and Palestine adopt fintech based on perceived usefulness, risk, awareness, and cost (Daqar et al., 2020). The120 Hungarian and Palestinian Millennials and Z Generation users were surveyed using SEM and SMART PLS. Perceived Usefulness, Risk, Awareness, and Cost positively and substantially affected Fintech Adoption Millennials and Z Generation Users of Hungary and Palestine.From the above discussion, we have proposed the following alternative hypotheses.

H1: Awareness is positively related to Fintech adoption.

PERCEIVED TRUST AND FINTECH ADOPTION

Nawayseh (2020) examined, how Perceived Trust, Benefits, Risk, and Social Influence affect Jordanian fintech adoption during COVID-19 epidemic. SEM SMART PLS was used to evaluate data from 500 Jordanian potential Fintech Service clients. Trust, Benefits, Risk, and Social Influence favorably and dramatically impacted Jordanian fintech adoption during COVID-19 pandemic. Perceived Trust, Effectiveness, Risk, and Social Influence impacted Indonesian fintech adoption (Meyliana, 2019). SEM SMART PLS examined questionnaire data from 748 Indonesian potential Fintech Service clients. Trust, Usefulness, Risk, and Social Influence favorably and substantially impacted Indonesian fintech adoption. Trust, Convenience, Risk, and Benefits influence Pakistani Islamic Banking Users' fintech adoption (Ali et al., 2021). SEM SMART PLS was used to evaluate data from 250 eminent and potential Pakistani Fintech Service utilizers of Islamic Banking. Trust, Convenience, Risk, and Benefits favorably and substantially impacted Islamic Banking Users of Pakistan's fintech adoption. Perceived Trust, Ease of Use, Awareness, and Risk affect Malaysia's banking industry's Fintech Adoption (Rahman et al., 2021). Malaysian bank clients numbered 139 were surveyed online using SMART PLS. Malaysia's banking industry's Fintech Adoption is positively impacted by Trust, Ease of Use, Awareness, and Risk. Perceived Trust, Security, Risk, and Promotion impact ofJakarta'sfintech adoption was observed to large level (Nangin et al., 2020). From the above discussion, we have proposed the following alternative hypothesis.

H2: Perceived trust is positively related to Fintech adoption.

PERCEIVED USEFULNESS AND FINTECH ADOPTION

Jakarta'sfintech adoption depended on perceived trust, usefulness, risk, and financial literacy (Setiawan et al., 2021). SEM SMART PLS analyzed 485 Jakarta's potential Fintech Service users' though a survey. Perceived Trust, Usefulness, Risk, and Financial Literacy positively and substantially impacted Jakarta consumers' fintech adoption. Singh et al. (2020) examined, how perceived utility, awareness, technical features, and behavioral variables affect fintech adoption among Indian banking customers. Indian banking user questionnaires and SMART PLS SEM obtained the data. Perceived Usefulness, Awareness, Technological Attributes, and Behavioral Attributes positively and substantially influenced Indian banking users' Fintech Adoption. (Le, 2021) examined, how Perceived Usefulness, Government Support, Financial Literacy, Ease of Use, and Brand Image affectedfintech adoption among Vietnamian Banking Users during COVID-19 epidemic. SEM with SPSS was used to survey 190 Vietnamese bank customers. Perceived Usefulness, Government Support, Financial Literacy, Ease of Use, and Brand Image positively and substantially affectedfintech adoption among Vietnam Banking Users during COVID-19. Al-Okaily et al. (2021) evaluated how perceived trust, usefulness, risk, pleasure, and E-WOM influenced Jordanian fintech adoption utilizers. SEM SMART PLS examined questionnaire data from 304 Jordanian potential Fintech Service clients. Perceived Trust, Usefulness, Risk, Enjoyment, and E-WOM positively and substantially impacted Jordanian fintech adoption. Expectation, Performance, Confirmation, Usefulness, and Satisfaction impacted Korean fintech adoption users (Lim et al., 2018). SEM SMART PLS studied 150 Korean potential Fintech Service users' questionnaire data. Expectation, Performance, Confirmation, Usefulness, and Satisfaction positively and substantially impactedKorean fintech adoption users. Perceived Trust, Effectiveness, Risk, and Social Influence impacted Indonesian fintech adoption utilizers (Meyliana et al., 2019). SEM SMART PLS examined questionnaire data had been taken from 748 Indonesian potential Fintech Service clients. Usefulness, Trust, Risk, and Social Influence positively and substantially influenced Indonesian fintech adoption clients.From the above discussion, we have proposed the following alternative hypothesis.

H3: Perceived usefulness is positively related to Fintech adoption.

MEDIATING ROLE OF GOVERNMENT SUPPORT TOWARDS FINTECH AND FINTECH ADOPTION

Government Support, Financial Literacy, Usefulness, Ease of Use, and Brand Image affect fintech adoption among Malaysian Banking Users during the epidemic period of COVID-19 (Nathan et al., 2022). SEM with SPSS was used to survey 190 Malaysian banking customers. Government Support, Financial Literacy, Usefulness, Ease of Use, and Brand Image positively and substantially affected thefintech adoption among Malaysian Banking Users during difficult time of COVID-19, the epidemic period. Albarrak&Alokley's 2021 research had explored that how the Government Support, Financial Literacy, and Brand Image affected Saudi Arabian Banking Users' fintech adoption. SEM using SPSS collected questionnaire data from 190 Saudi Arabian banking consumers. Government Support, Financial Literacy, and Brand Image positively and substantially affected Saudi Arabian Banking Users hadused fintech adoption. South Korean banking users' fintech adoption was examined (Tapanainen, 2020). The usage of SPSS and 120 South Korean banking users' questionnaires gathered the data with the help of enumerator. Government Support, Financial Literacy, and Brand Image positively and substantially affectedfintech adoption among South Korean Banking Users. Government Support, Financial Literacy, and Brand Image affectedfintech adoption in Indonesian SMEs (Nugraha et al., 2022).From the above discussion, we have proposed the following alternative hypothesis.

H4: The government support mediates the relationship between awareness and fintech adoption.

H5: The government support mediates the relationship between perceived trust and fintech adoption.

H6: The government support mediates the relationship between perceived usefulness and fintech adoption.

METHODOLOGY

A study's research design, that serves as a framework for the complete process, from establishing the agenda to accumulating and analyzing data outlines the fundamental research design (Veal, 2017). In this investigation, an explanatory research design was utilized. A structured questionnaire survey is used to gather the required information for an explanatory study design. Fintech Adoption Services in the Islamic Banking Industry of Karachi, Sindh will provide the study's data. This study's data source is 'primary', or data collected directly from end users with the stated purpose of resolving the research issue (Hair et al., 2014). Participants will be Fintech Services Users of Islamic Banks in Karachi, Sindh, Pakistan,these respondents will be asked to complete a standardized questionnaire.The term "population" refers to a group of people who have been specifically selected, or any targeted community, to participate in research in order to obtain information or their opinion on variables and their factors (Kindig, 2007). Now, a portion of the population in Karachi, Pakistan uses Fintech Services provided by the Islamic banking system.

The term "sampling" refers to the procedure of selecting a statistically representative sample from a population (Lynn, 2016). It is a crucial tool used in research to reduce the number of individuals,showed their interest in the study. The ideal sample is one that accurately represents the target population and is large enough for research purposes. We collected data from Fintech Services Users of Banks in Karachi, Pakistan, using convenience sampling or non-probability sampling. The sample size of a study should be large enough to convey sufficient significance to researchers so that such researchers can have faith in and rely on the study's findings. However, it should not be so insignificant as to be unreliable. We have already applied the rule of thumb of 10 respondents per questionnaire item to ascertain the optimal sample size. According to the rule of thumb, there are 20 total inquiries and 10 respondents per questionnaire (Cobanoglu et al., 2022). Therefore, we would have required 200 respondents, if our questionnaire were to have included twenty items.But for the

better results we have considered 270 cases in this study. The purpose of the questionnaire was to collect the primary data from the relevant sources for the investigation. In general, a "questionnaire" is a form-like instrument used to collect responses to self-administered inquiries. This questionnaire uses the 5-Likert Scale as its foundation. All items were taken from Nathan et al. (2022), Setiawan et al. (2021), and Rahman et al. (2021), all these studies conducted in the past and proved reliable.

RESULTS AND DISCUSSION

RELIABILITY ANALYSIS

The following Table 1 displays the consistency between all survey instrument's elements. Cronbach's Alpha is exhibited in the Reliability Analysis table, which is used to make decisive conclusions regarding the data's reliability. Based on this, we can classify dependability as inadequate or exceptional. Cronbach's Alpha is 0.786 for fintech adoption, 0.792 for Awareness, 0.751 for perceived trust, 0.835 for perceived usefulness and as well as 0.827 for government support. If Cronbach's Alpha is greater than 0.70, the variable is deemed reliable for further data analysis, and it is referred to as reliable (Taber, 2018). Therefore, the designed instrument is considerable and is also dependable.

Table 1: Reliability Analysis

Factors	Cronbach's Alpha	No. of Items
Fintech Adoption	0.786	4
Awareness	0.792	4
Perceived Trust	0.751	4
Perceived Usefulness	0.835	4
Government Support	0.827	4

Source: This study

HYPOTHESIS TESTING

The purpose of this research is to investigate the relationship between independent factors including awareness, perceived trust, and perceived usefulness on dependent variablefintech adoption in Islamic banking sector of Karachi, Pakistan, and mediating role of government support. The p-value as well as the beta value are shown in the Table2 that follows. The p-value is used to represent the degree of significance, whereas the beta value is used to highlight the nature of the connection between the dependent and independent variables. The data indicates that there is a positive relationship between awareness (Beta value=0.247, p-value=0.005), perceived trust (Beta value=0.204, p-value=0.010), perceived usefulness (Beta value=0.172, p-value=0.042).inaddition, these the mediating role of government support between awareness and fintech adoption revealed a partial mediation effect (Beta value=0.094, p-value=0.003). However, the mediating role of government support between perceived trust and fintech adoption revealed a full mediation effect (Beta value=0.040, p-value=0.120). Lastly, the mediating role of government support between perceived usefulness and fintech adoption revealed a partial mediation effect (Beta value=0.099, p-value=0.009).

Table 2:Hypothesis Testing

Path Directions	Value of Beta (Standard Co-efficient)	Significance Level(P-value)	Results
Awareness -> Fintech Adoption	0.247	0.005	Supported
Perceived Trust -> Fintech	0.204	0.010	Supported

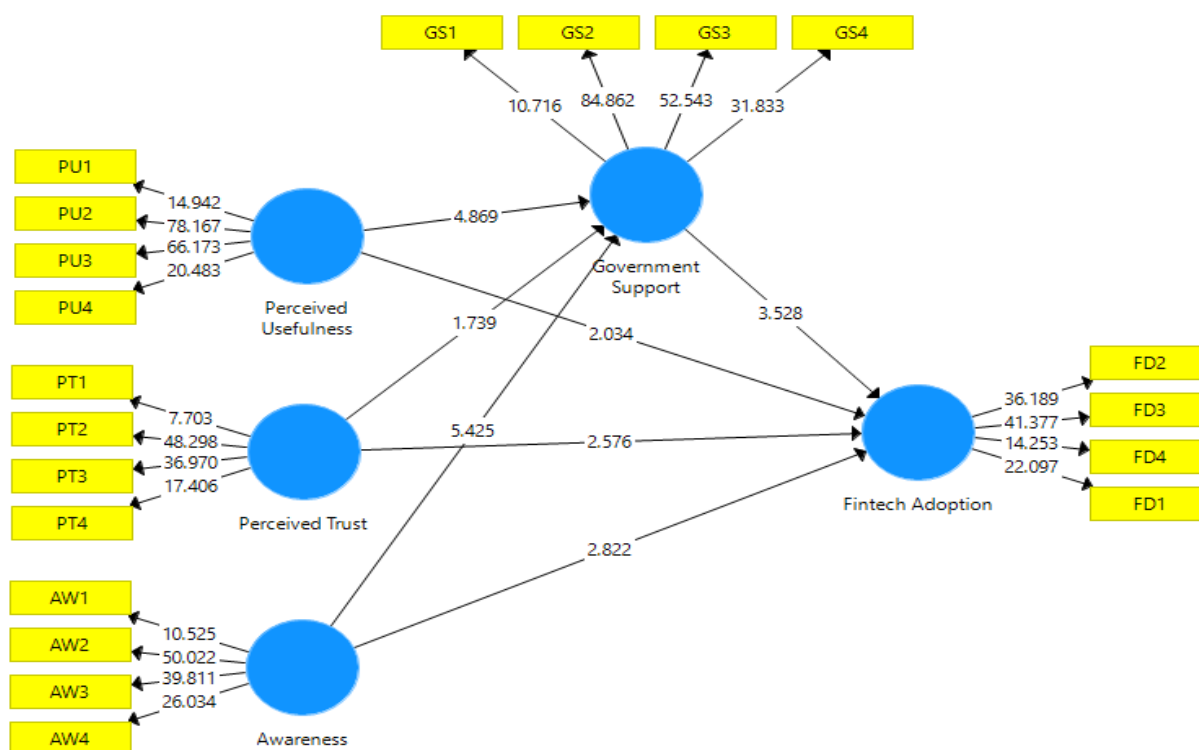|			
Adoption			
Perceived Usefulness -> Fintech Adoption	0.172	0.042	Supported
Awareness -> Government Support -> Fintech Adoption	0.094	0.003	Partial Mediation
Perceived Trust -> Government Support -> Fintech Adoption	0.040	0.120	Full Mediation
Perceived Usefulness -> Government Support -> Fintech Adoption	0.099	0.009	Partial Mediation

Source: This study

Figure 1: Structural Equation Modelling

DISCUSSION ON RESULTS

Earlier research indicated that regulatory authority has a positive effect or influence on Fintech Adoption (Rahman et al., 2021), that Awareness has a positive and significant effect on Fintech Adoption (Singh et al., 2020), and that the Awareness has a positive and significant effect on Fintech Adoption (Jin et al., 2018).Previous research indicated that regulatory authority has a positive effect or influence on the Fintech Adoption (Meyliana et al., 2019), furthermore that Perceived Trust has a positive and significant effect on the Fintech Adoption (Ali et al., 2021), and that the Perceived Trust had a positive and significant effect on Fintech Adoption (Rahman et al., 2021). Previous research indicated that regulatory authority had a positive influence or effect on Fintech Adoption (Setiawan et al., 2021), and also Perceived Usefulness had a positive and significant influence on Fintech Adoption

(Al-Okaily et al., 2021), and that Perceived Usefulness had a positive and significant influence on Fintech Adoption (Meyliana et al., 2019).Previous research had also indicated that regulatory authority had a positive effect on Fintech Adoption (Al- Nathan et al., 2022).The Government Support also had has the positive and significant effect on Fintech Adoption (Albarrak&Alokley's 2021).

CONCLUSION

For this study, we utilized the primary data that was gathered from Fintech Service Users in all over theKarachi. The purpose of this research was to determine the influence that these individuals have on the adoption of Fintech. All three independent variables including awareness, perceived trust and perceived usefulness have a significant and positive influence on the adoption of fintech services in Islamic banking industry of Karachi, Pakistan. Moreever, the mediating role of government support revealed partial mediation effect on awareness and perceived useful ness. However, full mediation effect for the perceived trust.

MANAGERIAL IMPLICATIONS

This study plays an important part in the influence that is related to the adoption of fintech services has had on the Islamic banking industry ofKarachi. This study will be helpful to the organizations and employees in the banking industry such as looking to achieve a competitive advantage by increasing their use of fintech services. This research can take advantage of studying those factors, that are important to enhance the adoption of fintech services, particularly for the banking sector because this research is particularly for banking-based companies, whereas the factors,such as are awareness, perceived trust, perceived usefulness, and government support.

THEORETICAL IMPLICATIONS

The variables of awareness, perceived trust, perceived usefulness, and government support are derived from the Industrial Theory and Technology Acceptance Model. This theory was tested for the first time in Karachi, Pakistan. Awareness, perceived trust, perceived usefulness, and government support have a positive and significant impact on the adoption of fintech services in the Banking Industry of Karachi Sindh, according to the testing and results. Therefore, we have demonstrated for the first time these theories in the context of Karachi, Pakistan'sbanking Industry.

FUTURE RESEARCH

This research has limitations; the first limitation is that the current research is only able to assess Fintech Adoption based on four factors: awareness, perceived trust, perceived usefulness, and government support. Second, the target audience limited towards the finance sector usersonly. Thirdly, another restriction was the limited sample size of only 270 banking sector users, and geographically, we were restricted to Karachi, Sindh, Pakistan, as the sole location of fintech service users, it can be extended towards the other provinces of Pakistan.

REFERENCES

1. Abu Daqar, M. A. M., Arqawi, S., & Karsh, S. A. (2020). Fintech in the eyes of Millennials and Generation Z (the financial behavior and Fintech perception). *Banks and Bank Systems*, *15*(3), 20–28.
2. Al Nawayseh, M. K. (2020). Fintech in COVID-19 and beyond: what factors are affecting customers' choice of fintech applications?. *Journal of Open Innovation: Technology, Market, and Complexity, 6*(4), 153.
3. Alam, M. M., Awawdeh, A. E., & Muhamad, A. I. B. (2021).Using e-wallet for business process

development: Challenges and prospects in Malaysia.*Business Process Management Journal, 27*(4), 1142-1162.

4. Albarrak, M. S., & Alokley, S. A. (2021). FinTech: Ecosystem, Opportunities and Challenges in Saudi Arabia. *Journal of Risk and Financial Management*, *14*(10), 460.

5. Ali, M., Raza, S. A., Khamis, B., Puah, C. H., & Amin, H. (2021). How perceived risk, benefit and trust determine user Fintech adoption: a new dimension for Islamic finance. *Foresight*, *23*(4), 403–420.

6. Al-Okaily, M., Al Natour, A. R., Shishan, F., Al-Dmour, A., Alghazzawi, R., & Alsharairi, M. (2021). Sustainable FinTech innovation orientation: a moderated model. *Sustainability, 13*(24), 13591.

7. Bradley, S. W., Kim, P. H., Klein, P. G., McMullen, J. S., &Wennberg, K. (2021). Policy for innovative entrepreneurship: Institutions, interventions, and societal challenges. *Strategic Entrepreneurship Journal*, *15*(2), 167-184.

8. Chan, R., Troshani, I., Rao Hill, S., & Hoffmann, A. (2022). Towards an understanding of consumers' FinTech adoption: The case of Open Banking. *International Journal of Bank Marketing*, *40*(4), 886-917.

9. Cobanoglu, C., Cavusoglu, M., &Turktarhan, G. (2021). A beginner's guide and best practices for using crowdsourcing platforms for survey research: The Case of Amazon Mechanical Turk (MTurk). Journal of Global Business Insights, 6(1), 92-97.

10. Elavarasan, R. M., Pugazhendhi, R., Irfan, M., Mihet-Popa, L., Khan, I. A., &Campana, P. E. (2022).State-of-the-art sustainable approaches for deeper decarbonization in Europe–An endowment to climate neutral vision. *Renewable and Sustainable Energy Reviews*, *159*, 112204.

11. Filieri, R., Acikgoz, F., Ndou, V., &Dwivedi, Y. (2021). Is TripAdvisor still relevant? The influence of review credibility, review usefulness, and ease of use on consumers' continuance intention. *International Journal of Contemporary Hospitality Management*, *33*(1), 199-223.

12. Ghazali, N. H., & Yasuoka, T. (2018). Awareness and perception analysis of small medium enterprise and start-up towards fintech instruments: Crowdfunding and peer-to-peer lending in Malaysia. *International Journal of Finance and Banking Research, 4*(1), 13-24.

13. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European business review, 26*(2), 106-121.

14. Hamid, F. S., &Loke, Y. J. (2021). Financial literacy, money management skill and credit card repayments. *International Journal of Consumer Studies*, *45*(2), 235-247.

15. Hamid, R., Ong, M. H. A., Razak, I. R. A., Ismail, T. A. T., Ramli, N., &Nawawi, Z. M. W. N. W. (2020). User acceptance of smart housekeeping: A study of TAM model prototype in hotel industry. *Int. J Sup.Chain.Mgt Vol*, *9*(3), 308.

16. Iriani, S. S., &Andjarwati, A. L. (2020).Analysis of perceived usefulness, perceived ease of use, and perceived risk toward online shopping in the era of Covid-19 pandemic. *Systematic Reviews in Pharmacy*, *11*(12), 313-320.

17. Jin, C. C., Seong, L. C., & Khin, A. A. (2019). Factors Affecting the Consumer Acceptance towards Fintech Products and Services in Malaysia. *International Journal of Asian Social Science*, *9*(1), 59–65.

18. Kandpal, V., Chandra, D., Dalei, N. N., &Handoo, J. (2023). Expanding Financial Inclusion Through Fintech and E-governance. In *Financial Inclusion in Circular Economy: A Bumpy Road Towards Sustainable Development*. 103-129.

19. Kihombo, S., Ahmed, Z., Chen, S., Adebayo, T. S., &Kirikkaleli, D. (2021). Linking financial development, economic growth, and ecological footprint: what is the role of technological innovation? *Environmental Science and Pollution Research*, *28*(43), 61235-61245.

20. Kindig, D. A. (2007).Understanding population health terminology. *The Milbank Quarterly*, *85*(1), 139-161.

21. Leong, K., & Sung, A. (2018). FinTech (Financial Technology): what is it and how to use technologies to create business value in fintech way? *International Journal of Innovation, Management and Technology*, *9*(2), 74-78.

22. Lim, S. H., Kim, D. J., Hur, Y., & Park, K. (2019). An Empirical Study of the Impacts of Perceived Security and Knowledge on Continuous Intention to Use Mobile Fintech Payment Services. *International Journal of Human-Computer Interaction*, *35*(10), 886–898.

23. Lynn, P. (2016). Principles of sampling. *Research methods for postgraduates*, 244-254.

24. Meng, S., He, X., & Tian, X. (2021). Research on Fintech development issues based on embedded cloud computing and big data analysis. *Microprocessors and microsystems*, *83*, 103977.

25. Meyliana, F. E. S. (2019). Pengaruh Persepsi Risiko dan Kepercayaan Dalam Adopsi Layanan Fintech Di Indonesia. *CommIT (Communication and Information Technology) Journal.*, *13*(1), 31–37.

26. Nangin, M. A., Barus, I. R. G., & Wahyoedi, S. (2020). The Effects of Perceived Ease of Use, Security, and Promotion on Trust and Its Implications on Fintech Adoption. *Journal of Consumer Sciences*, *5*(2), 124–138.

27. Nathan, R. J., Setiawan, B., & Quynh, M. N. (2022). Fintech and Financial Health in Vietnam during the COVID-19 Pandemic: In-Depth Descriptive Analysis. *Journal of Risk and Financial Management*, *15*(3). 125.

28. Ning, Y., Cherian, J., Sial, M. S., Álvarez-Otero, S., Comite, U., & Zia-Ud-Din, M. (2022). Green bond as a new determinant of sustainable green financing, energy efficiency investment, and economic growth: a global perspective. *Environmental Science and Pollution Research*, 1-16.

29. Nugraha, D. P., Gufron, I. A., Pringgondani, P., & Ilhamdi, I. (2022). The Effect of Sharia Financial Literature, Government Support and Sharia Fintech on MSME Sustainability. *Enrichment: Journal of Management*, *12*(2), 1365–1372.

30. Okfalisa, O., Mahyarni, M., Anggraini, W., Saeed, F., Moshood, T. D., &Saktioto, S. (2022). Quadruple helix engagement: reviews on shariahfintech based SMEs digitalization readiness. *Indonesian Journal of Electrical Engineering and Informatics (IJEEI)*, *10*(1), 112-122.

31. Pradhan, R. P., Arvin, M. B., Nair, M., & Bennett, S. E. (2020).The dynamics among entrepreneurship, innovation, and economic growth in the Eurozone countries. *Journal of Policy Modeling*, *42*(5), 1106-1122.

32. Rahman, M., Ming, T. H., Baigh, T. A., & Sarker, M. (2021). Adoption of artificial intelligence in banking services: an empirical analysis. *International Journal of Emerging Markets*, (ahead-of-print).

33. Setiawan, B., Nugraha, D. P., Irawan, A., Nathan, R. J., & Zoltan, Z. (2021). User innovativeness and fintech adoption in indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(3), 188.

34. Sheth, J. N., &Parvatiyar, A. (2021).Sustainable marketing: Market-driving, not market-driven. *Journal of macromarketing*, *41*(1), 150-165.

35. Singh, S., Sahni, M. M., & Kovid, R. K. (2020). What drives FinTech adoption? A multi-method evaluation using an adapted technology acceptance model. *Management Decision*, *58*(8), 1675–1697.

36. Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education, 48*, 1273-1296.

37. Tapanainen, T. (2020). Toward Fintech Adoption Framework for Developing Countries-A Literature Review based on the Stakeholder Perspective. *Journal of Information Technology*

Applications and Management, 27(5), 1-22.

38. Veal, A. J. (2017). *Research methods for leisure and tourism*. Pearson UK.

39. Villar, A. S., & Khan, N. (2021). Robotic process automation in banking industry: a case study on Deutsche Bank. *Journal of Banking and Financial Technology*, *5*(1), 71-86.

40. Yang, T., & Zhang, X. (2022). FinTech adoption and financial inclusion: Evidence from household consumption in China. *Journal of Banking & Finance, 145*, 106668.

41. Yoshino, N., P. J. Morgan, and T. Q. Long. 2020. Financial Literacy and Fintech Adoption in Japan. ADBI Working Paper 1095. Tokyo: Asian Development Bank Institute. Available: https://www.adb.org/publications/financial-literacy-fintech-adoption-japan.

42. Zaineldeen, S., Hongbo, L., Koffi, A. L., & Hassan, B. M. A. (2020). Technology acceptance model 'concepts, contribution, limitation, and adoption in education. *Universal Journal of Educational Research*, *8*(11), 5061-5071.

43. Zhou, M., Huang, J., Wu, K., Huang, X., Kong, N., & Campy, K. S. (2021). Characterizing Chinese consumers' intention to use live e-commerce shopping. *Technology in Society*, *67*, 101767.