Fintech Adoption by SMEs in Sleman, Indonesia

Review of Integrative Business & Economics Research

Sri Dwi Ari Ambarwati*
Universitas Pembangunan Nasional "Veteran" Yogyakarta

Dyah Sugandini
Universitas Pembangunan Nasional "Veteran" Yogyakarta

Mohamad Irhas Effendi
Universitas Pembangunan Nasional "Veteran" Yogyakarta

Agus Ristono
Universitas Pembangunan Nasional "Veteran" Yogyakarta

ABSTRACT

Financial technology is a technological innovation in the financial sector; various services are provided by startup companies online, starting from payment traffic, insurance, and financing to company risk assessment. The ease of fintech services is a reason for SMEs to develop their business, especially in funding and financing. This study aims to analyze the adoption of financial technology in SMEs in Sleman, which is influenced by the ease of use of technology, financial literacy, and trust and mediated by perceived usefulness. The number of respondents is 250 owners or managers of SMEs. The data collection technique used a questionnaire arranged based on a five-point Likert scale. The data analysis technique used is structural modeling with path analysis. The analysis tool is SEM-PLS. The study results show that: Financial Literacy, Perceived Ease of Use and Trust positively affect Perceived Usefulness; and Perceived Usefulness has a positive effect on Financial Technology Adoption.

Keywords: PEOU, PU, Trust, Financial literation, and adoption Fintech.

Received 17 June 2023 | Revised 6 September 2023 | Accepted 11 October 2023.

1. INTRODUCTION

The COVID-19 pandemic, which has spread and caused lockdowns in various countries, has significantly increased the use of mobile applications in financial technology. Digital acceleration has significantly impacted the long-term implications for consumers and financial technology (Fintech) providers. On the demand side, there is a large-scale shift in fintech adoption and use of alternative lending sources. Fu and Mishra (2022) prove that COVID has accelerated changes in the financial intermediation landscape, such as BigTech and modularized financial services. The rise of Fintech requires regulators to be proactive in monitoring and addressing regulatory gaps to achieve balance.

Startup companies in technology-based financial services (Fintech) are increasing in Indonesia. Fintech is a business that aims to provide financial services by utilizing modern software and technology. The development of information technology has changed the way humans do their activities, from what was initially conventional to entirely online, including in the business sector. This is where the role of Fintech is needed. In Indonesia, the largest economy in Southeast Asia, small and medium enterprises

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

contribute around 60% of the country's economy and absorb 97% of the workforce. However, even though more than 60 million SMEs are in Indonesia, only 12% can get bank financing or loans. The COVID-19 pandemic has exacerbated the situation for these SMEs, as almost 50% (around 30 million SMEs) have been forced to close due to falling demand due to the pandemic temporarily. For this reason, financial technology platforms (Fintech) can help because Fintech combines financial services and technology to make it easier for people to save, borrow, transact, and invest online.

Several obstacles for SMEs were found in its application, namely related to obtaining access to credit from banks, including (1) Lack of information on the profile of SMEs; (2) Risk management requirements have not been met; and (3) inadequate financial records; and (4) Lack of knowledge of SMEs on other financing alternatives. Finally, Fintech is here to be a solution for SMEs that are hampered by getting credit from banks. During the Covid-19 pandemic, 52 fintech organizers who are members of the Indonesian FinTech Association have provided around 55 incentive programs, conveniences, and financial solutions for people affected by their economies. This continues to be carried out and developed by involving fintech providers from various business models such as Peer to Peer (P2P) lending, Financial Planners, Project Financing, Digital Wallets, and others (Arnawati, *et al*., 2023). This is done considering the enormous potential for collaboration between fintech organizers and SMEs in presenting real solutions that support accelerating national economic recovery. [Chung, *et al*., 2022]. Fintech refers to using technology to provide financial services, including transactions, payments, investments, loans, financial management, etc. Fintech aims to change and improve the way people access, use, and manage financial services. Fintech comes to simplify all financial affairs with a wider reach through a collaboration between government, banks, institutions, e-commerce, startup, and telecommunication. With the emergence of the Fintech era, startup companies can take a banking role in managing finance (Chandra & Sam'un, 2019).

Several empirical studies have linked Fintech adoption from the perspective of individual users in Indonesia (Firmansyah *et al*., 2022; Setiawan *et al*., 2021). However, it still attracts little attention from SMEs, even though SMEs significantly contribute to the Indonesian economy. For example, Najib *et al*. (2021) explored the determinants of Fintech adoption for 184 Indonesian SMEs, demonstrating that performance expectations, social effects, facilitating situations, knowledge, perceived job safety, and price value all impact behavioral intentions in adopting technology-based finance. The results also reveal that financial literacy has little correlation with Fintech adoption mediated by user innovation. This indicates that Fintech can contribute to bridging financial inclusion, where SMEs with lower financial literacy can take advantage of financial products and services through Fintech. It has been proven that Fintech has helped a lot to improve the performance of SMEs in Indonesia (Nugraha, et., al. 2022); (Putri *et al*., 2023).

2. LITERATURE REVIEW

1.1. Financial Technology

Fintech is an abbreviation of financial technology which means financial technology. So, what exactly is Fintech is a technological innovation developed in the financial sector so that financial transactions can be carried out practically, efficiently, and effectively. Bank Indonesia defines Fintech as combining technology and financial features that change weak financial models. Bank Indonesia explained that FinTech could replace the role of formal financial institutions such as banks. In terms of payment systems, FinTech plays a role in; 1) providing a market for business actors, 2) serving as a tool for payment,

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

settlement/settlement, and clearing, 3) assisting in more efficient investment implementation, 4) mitigating risks from conventional payment systems, 5) helping those who need to save, borrowing funds and equity participation. Financial technology is beginning to gain popularity, as they are convenient and fast. Most users are still members of the working-age groups, so the attitudes and behaviors of current working-age people towards financial technology transactions are an issue of interest and further study to provide information for developing transaction services through financial technology more easily and quickly and creating a guidebook to enable a faster understanding (Paripunyapat, & Kraiwanit, 2018).

1.2. Financial Technology Adoption

Technology adoption is carried out to understand the various factors that influence the technology adoption behavior of an individual (Patel & Patel, 2018). The main feature of this research study is to explain and predict the phenomenon of technology adoption using a theoretical model. TAM is a theoretical expansion of the Theory of Reasoned Action (TRA) which explains the determinants of conscious behavior (Ajzen & Fishbein, 1980). TAM was first developed by Davis (1986). TAM can provide an overview of the theoretical basis that discusses the factors that influence to explain the motives for the use of technology (Nugraha *et al*., 2022). Many previous researchers have used the TAM model to analyze consumer behavior in adopting technology. Davis *et al*. (1989) TAM has the power to explain and predict broadly individual behavior toward the use of computing technology in end users and groups of temporary users simultaneously. According to Davis (1986), the main factors explaining technology acceptance are (a). perceived benefits, (b). perceived ease of use, (c). attitudes to adopting technology, and d. intention to adopt the technology. The intention to adopt technology is the desire in a person to take action using technology [Upadhyay *et al*., 2022]. Variables that affect the intention to adopt technology are the ease of use and perceived benefits by users (Davis, 1986; Chung *et al*., 2022). Even though the TAM indicators are as mentioned above, the authors will expand by adding variables such as financial literacy and customer trust (Nugraha, *et al*., 2022); (Putri *et al*., 2023].

1.3. Perceived Ease of Use (PEOU)

According to Scherer *et al*. (2019), PEOU is the extent to which a person believes using technology will be free from any effort. Meanwhile, according to Davis *et al*. (1989), perceived ease of use is the extent to which users believe that no effort is understood, including physical and mental effort, and how easy it is to learn to use the system. Perceived ease of use refers to how clear and understandable the interaction with the system is, the ease of getting the system to do what is required, the mental effort required to interact with the system, and the ease of using the system (Ndubisi & Jantan, 2003).

H1a: Perceived ease of use directly affects fintech adoption in SMEs

H1b: PEOU and Fintech adoption mediated by PU have an indirect positive impact.

1.4. Financial Literacy

Financial literacy is generally defined as awareness and a basic understanding of finance, including financial management and planning (Rodrigues *et al*., 2023). This study refers to Callis *et al*. (2023) measuring financial literacy by asking about compound interest, inflation, and diversification. Previous research by Lusardi (2019); Varkey (2020) a positive correlation between financial literacy and Fintech adoption. Therefore, the hypothesis of this study:

H2a: Financial literacy has a direct positive effect on Fintech adoption.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

H2b: Financial literacy positively affects Fintech adoption mediated by perceived usefulness

1.5. Trust (TR)

Trust is the foundation of financial services (Chinasamy, *et al*., 2020). Verma *et al*., (2023) illustrated that while trust in fintech services declined in one location, fintech services thrived in the same region. In technology adoption, trust is correlated with reducing anxiety and increasing consumer confidence to adopt new technologies.

H3a: Trust has a direct positive effect on Fintech adoption.

H3b: Trust positively affects Fintech adoption mediated by PU

1.6. Perceived Usefulness (PU)

According to Zhang *et al*. (2018), perceived usefulness refers to how much technology can boost performance. This mediating variable is significant for influencing the sustainability of technology adoption Shahzad *et al*.,(2022). In this study, PU is determined to measure how much Fintech adoption meets user needs, such as time savings and profits. Previous studies have found a positive correlation between PU and technology adoption (Yan *et al*., 2021; Setiawan*et al*., 2021). However, Rodrigues *et al*. (2023) found PU was insignificant in influencing digital banking adoption. Then the hypothesis offered is based on previous research as follows:

H4a: Perceived usefulness positively impacts Fintech adoption.

3. RESEARCH METHODS

This research is a survey research using 250 SMEs respondents in Sleman Regency. The number of respondents refers to the adequacy of the model set by Hair *et al*. (2017). Hair *et al*. (2017) stated that the minimum sample size required to reduce bias in all types of SEM. Estimates is 200. The maximum likelihood (ML) sample size estimate must be at least 15 times the observed variables. Data is collected from all SMEs in Sleman. The data collection tool in this study was to use a compiled questionnaire based on a five-point Likert scale. Respondents in this study were managers or owners of SMEs in Sleman, Indonesia. The sampling technique is convenience sampling. The statistical data processing technique used is Structural Equation Modeling with the Smart PLS program.

4. RESULTS

4.1. Characteristics of Respondents

This study uses data from 250 SMEs owners or managers who live in Sleman. Data on the characteristics of respondents in this study indicate that the average manager of SMEs is male (75%). Average age 40-60 years (88%). The length of operation for SMEs is at least five years, and the average turnover per year is IDR 350 million.

4.2. Hypothesis testing results

The study results show that the fintech adoption model for SMEs in Sleman is acceptable. All hypotheses put forward are also supported. The R^2 values obtained in this study were 0.602 and 0.606. The results of the analysis of the validity and reliability of the measurement model show that all are valid and reliable.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

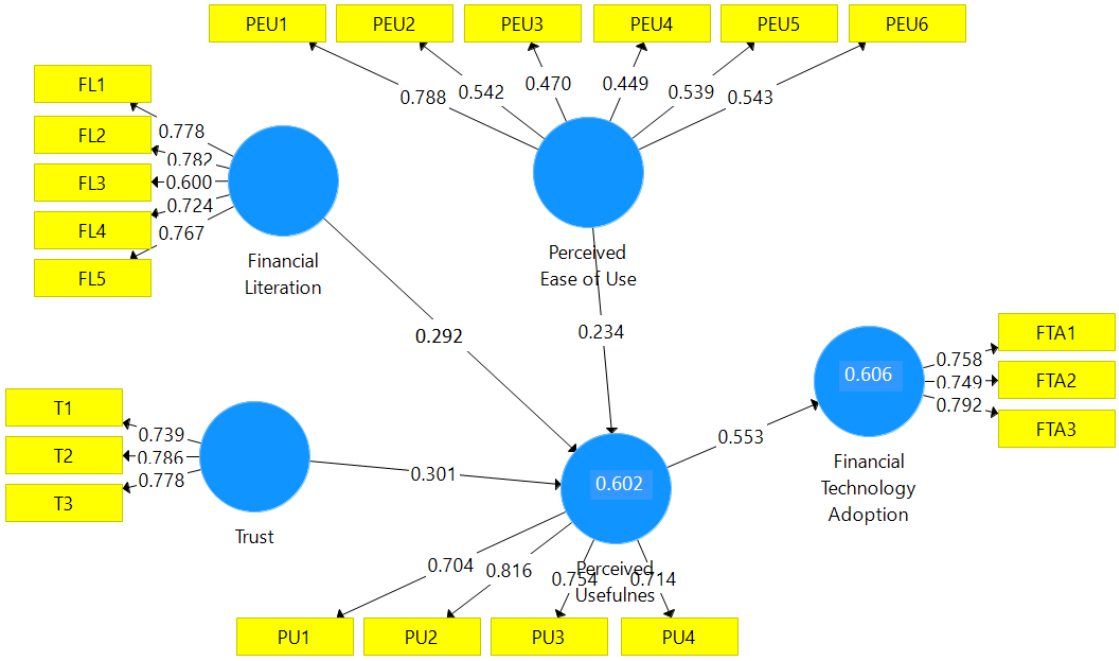

Figure 1. The Fintech Adoption Model for SMEs in Sleman, Indonesia

All constructs measured in this study have a Cronbach's alpha value greater than 0.70 and have good reliability with a composite reliability value greater than 0.5. The AVE value is good because all constructs are more significant than 0.5. the results of data analysis using bootstrapping values can be seen in Figure 1 and Table 1.

Table 1. The results of the relationship analysis using the path coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (S.T.D.E.V.)	T Statistics (|O/STDEV|)	P Values
Financial Literation →Perceived Usefulness	0.292	0.290	0.041	3.131	0.025
Perceived Ease of Use →Perceived Usefulness	0.234	0.251	0.058	4.019	0.000
Perceived Usefulness →Financial Technology Adoption	0.553	0.561	0.050	11.033	0.000
Trust →Perceived Usefulness	0.301	0.300	0.090	3.340	0.001

5. DISCUSSION

The results of this study indicate that all the proposed hypotheses are supported, and the fintech adoption model for SMEs is acceptable. Table 1 shows that all paths have a t-statistic of > 1.96 and a p-value < 0.05. The results of the data analysis show that the first hypothesis is supported. This shows FinTech has a role in; 1) providing a market for business actors, 2) serving as a tool for payment, settlement/settlement, and clearing, 3) assisting in more efficient investment implementation, 4) mitigating risks from conventional payment systems, 5) helping those who need to save, borrowing funds and equity participation. This study supports Scherer *et al*. (2019) and Davis *et al*. (1989), who stated that PEOU could increase the PU of fintech users in SMEs.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

The second hypothesis states that financial literacy has a direct positive effect on Fintech adoption, and financial literacy has a positive effect on Fintech adoption mediated by PU, which is supported. This shows that financial literacy is proxied by awareness and a basic understanding of finance, including financial skills in money management and financial planning for SMEs. The results of this research support (Rodrigues *et al*., 2023; Zu & Zia, 2012; Lusardi, 2019; Varkey, 2020), who stated that there is a positive influence of financial literacy and Fintech adoption

The third hypothesis is accepted, which states that trust has direct and indirect positive effects through PU on Fintech adoption. This research shows that SMEs have confidence that the fintech services they adopt are safe. SMEs believe that using fintech personal data is safe, and in general, fintech services are safe and reliable. The results of this study support Yan *et al*. (2021); Verma *et al*., (2023) which illustrate that trust in fintech services influences fintech adoption.

The fourth hypothesis states that PU has a positive impact on Fintech adoption. This study's results indicate that Fintech has many benefits for SMEs financial transactions and can improve business performance. This study's results align with Zhang *et al*., (2018); Shahzad *et al*. (2022); Setiawan *et al*. (2022); Yan *et al*. (2021) state that PU significantly affects the adoption of digital banking.

6. CONCLUSIONS AND RECOMMENDATIONS

This research proves that PEOU, FL, trust, and PU influence the model of fintech adoption in SMEs. PU has the most significant impact on influencing Fintech adoption. This means that SMEs perceive that Fintech has many benefits for their financial business performance, causing SMEs in Sleman to adopt Fintech quickly. This study has limitations because it only analyzes fintech adoption for SMEs. Adoption analysis from the SMEs side cannot provide a broader picture of Fintech adoption because it requires consumers to apply it too. Thus it is suggested that future research can analyze fintech adoption from consumer and SMEs perspectives to understand it comprehensively. Understanding the factors driving Fintech adoption is critical in accelerating access to finance for Indonesian SMEs. Policymakers should consider adopting Fintech drivers to design cutting-edge strategies in promoting Fintech services to increase access to finance that approaches and fits the needs of SMEs (Wisniewski *et al*., 2021; Luan *et al*., 2023).

The implementation of Fintech in Indonesia is strengthened through the Financial Services Authority Regulation on Information Technology-Based Joint Funding Services. Fintech funding products for SMEs in Indonesia are divided into 2 (two), namely multipurpose funding and productive funding. Multipurpose funding is funding for goods or services required by the borrower/recipient of funds for consumption purposes and not for business purposes or productive activities within the agreed period. The difference is that productive funding through fintech joint funding is relatively easier to apply for, has a shorter loan tenor, smaller loan limit, and does not require collateral as collateral. Therefore, productive funding through fintech joint funding is very suitable for small companies and MSMEs in Sleman, Indonesia.

ACKNOWLEDGEMENT

Thanks to Research and Community Service Institute (LPPM) in Universitas Pembangunan Nasional “Veteran” Yogyakarta for funding this research in the 2023 Research Grant. The authors thank the anonymous reviewers for their helpful comments.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

REFERENCES

[1] Agyei, J., Sun, S., Abrokwah, E., Penney, E.K., Ofori-Boafo, R. (2020), "Mobile Banking Adoption: Examining the Role of Personality Traits". *SAGE Open*. 10, 215824402093291. https://doi.org/10.1177/2158244020932918

[2] Ajzen, I. (1991), "The Theory of Planned Behavior". *Organizational Behavior & Human Decision Processes*. 50 (2). 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

[3] Bashir, I., & Madhavaiah, C. (2015), "Consumer attitude and behavioral intention towards Internet banking adoption in India". *Journal of Indian Business Research*, 7(1), 67–102. https://doi.org/10.1108/JIBR-02-2014-0013

[4] Chung, Jae-Un, Oh, Se-Gu., & Moon, Hee-Cheol. (2022), "What drives SMEs to adopt smart technologies in Korea? Focusing on technological factors". *Technology on Society*. 71. 102109. 2022. https:// doi.org/10.1016/j.techsoc.2022.102109

[5] Davis, F.D. (1986), *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. Sloan School of Management, Massachusetts Institute of Technology.

[6] Davis, F.D., Bagozzi, R.P., & Warshaw, P.R. (1989), "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models". *Management Science.* 35, pp. 982–1003. https://doi.org/10.1287/mnsc.35.8.982

[7] Demirgüç-Kunt, A., Klapper, L., Singer., & D. Ansar, S. (2021), "Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19". In *Global Findex Database.* World Bank: Washington, DC, U.S.A, pp. 225

[8] Fu, J., & Mishra, M. (2022), "Fintech in the time of COVID-19: Technological adoption during crisis". *Journal of Financial Intermediation*. Volume 50, 100945. https://doi.org/10.1016/j.jfi.2021.100945

[9] Firmansyah, I.A., Yasirandi, R., & Utomo, R.G. (2022), "The influence of efficacy, credibility, and normative pressure to M-banking adoption level in Indonesia". *Procedia Computer Science*. Volume 197, Pages 51-60. https://doi.org/10.1016/j.procs.2021.12.117

[10] Hair, J., Hollingsworth, C.L., Randolph, A.B., & Chong, A.Y.L. (2017), "An updated and expanded assessment of PLS-SEM in information systems research". *Industrial Management & Data Systems.* 117 (3), 442–458. https://doi.org/10.1108/imds-04-2016-0130.

[11] Hendriyani, C., & Raharja, S. U. J. (2019), "Business agility strategy: Peer-to-peer lending of Fintech startup in the era of digital finance in Indonesia". *Review of Integrative Business and Economics Research*, 8, 239-246.

[12] Verma, S., Shome, S., & Hassan, M. K. (2023), "FinTech in small and medium enterprises (SMEs): A review and future research agenda". *European Management Journal*. https://doi.org/10.1016/j.emj.2023.07.003

[13] Nugraha, D. P., Setiawan, B., Nathan, R. J., & Fekete-Farkas, V. (2022), "Fintech Adoption Drivers for Innovation for SMEs in Indonesia". *Journal of Open Innovation: Technology, Market, and Complexity*. Volume 8, Issue 4, 208. https://doi.org/10.3390/joitmc8040208

[14] Lusardi, A. (2019), "Financial literacy and the need for financial education: evidence and implications". *Swiss Journal of Economics Statistics* 155, 1. https://doi.org/10.1186/s41937-019-0027-5

[15] Liu, Y., Dilanchiev, A., Xu, K., & Hajiyeva, A.M. (2022), "Financing SMEs and business development as new post COVID-19 eco-nomic recovery determinants".

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Economic Analysis and Policy. Vol. 76, Pages 554-567. https://doi.org/10.1016/j.eap.2022.09.006

[16] Rodrigues, L. F Oliveira, A., & Rodrigues, Helena. (2023), "Technology management has a significant impact on digital transformation in the banking sector. International Review of Economics & Finance". Volume 88, Pages 1375-1388. https://doi.org/10.1016/j.iref.2023.07.040

[17] Najib, M., Ermawati, W., Fahma, F., Endri, E., & Suhartanto, D. (2021), "FinTech in the Small Food Business and Its Relation with Open Innovation". *Journal of Open Innovation: Technology, Market, and Complexity*. Volume 7, Issue 1. https://doi.org/10.3390/joitmc7010088

[18] Paripunyapat, D., & Kraiwanit, T. (2018), "Financial technology acceptance in Bangkok metropolis and vicinity". *Review of Integrative Business and Economics Research*, 8(3).

[19] Patel, K. J., & Patel, H. J. (2018), "Adoption of internet banking service in Gujarat: An Extention of TAM with perceived security and social influence". *International Journal of Bank Marketing*, 36 (10), 147-169. https://doi.org/100.1108

[20] Putri, A., Widagdo A., & Doddy, S. (2023), "Analysis of Financial Technology acceptance of Peer to peer Lending (P2P) Lending using extended Technology acceptance model (TAM)". *Journal of Open Innovation: Technology, market and complexity*. Volume 9, Issue 1, 100027. https://doi.org/10.1016/j.joitmc.2023.100027

[21] Scherer, R., Sidiq, F., & Tondeur, J. (2019), "The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education". *Computers and Education*. 128. (0317) 13–35. https://doi.org/10.1016/j.compedu.2018.09.009

[22] 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*. Volume 7, Issue 3, 188. https://doi.org/10.3390/joitmc7030188

[23] Shahzad, A., Zahrullail, N., Akbar, A., Mohelska, H., & Hussain. (2022), "A. COVID-19's Impact on Fintech Adoption: Behavior-al Intention to Use the Financial Portal". *Journal of. Risk and Financial Management.* 15(10), 428. https://doi.org/10.3390/jrfm15100428

[24] Talwar, S., Dhir, A., Khalil, A., Mohan, G., & Islam, A.K.M.N. (2020), "Point of adoption and beyond. Initial trust and mobile-payment continuation intention". *Journal of Retailing and Consumer Services*. Volume 55, 102086. https://doi.org/10.1016/j.jretconser.2020.102086

[25] Varkey, J. (2020), "Financial Literacy in the FinTech Era: A Study of Scheduled Tribes in Kerala". *International Journal of Advanced Science and Technology*, 29(05), pp. 2904 - 2915. http://sersc.org/journals/index.php/IJAST/article/view/11408

[26] Wisniewski, T.P., Polasik, M., Kotkowski, R., & Moro, A. (2021), "Switching from Cash to cashless payments during the COVID-19 Pandemic and Beyond". International Journal of Central Banking (Early access). http://dx.doi.org/10.2139/ssrn.3794790

[27] Luan, D. X., Tran, N. V., Quyet, T. V. & Kingsbury, A. J. (2023), "Banking for tourism in the digital age: Access to credit and cashless payments for community-based tourism household-owned businesses in Vietnam". *Tourism Management Perspectives*. Volume 48, 101144. https://doi.org/10.1016/j.tmp.2023.101144

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[28] Callis, Z., Gerrans, P., Walker, D. L., & Gignac, G. E. (2023), "The association between intelligence and financial literacy: A conceptual and meta-analytic review. Intelligence". Volume 100, 101781. https://doi.org/10.1016/j.intell.2023.101781
[29] Yan, L.Y., Tan, G.W.H., Loh, X.M., Hew, J.-J., & Ooi, K.-B. (2021), "QR code and mobile payment: The disruptive forces in retail". *Journal of Retailing and Consumer Services*. 102300. https://doi.org/10.1016/j.jretconser.2020.102300
[30] Zhang, T., Lu, C., & Kizildag. M. (2018), "Banking 'on-the-go': examining consumers' adoption of mobile banking services". *International Journal of Quality and Service Sciences*, Vol. 10 No. 3, pp. 279–295. DOI:10.1108/IJQSS-07-2017-0067

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)