

Trust-Driven Adoption of FinTech Digital Payments via using Structural Equation Modelling

Neha SHARMA^{a*}, Ruby MITTAL^b

^a *Research Scholar, MVN University, Palwal, India*

^b *Assistant Professor, MVN University, Palwal, India*

*Corresponding author: 23ms9001@mvn.edu.in

Abstract

This study extends the Unified Theory of Acceptance and Use of Technology (UTAUT) framework to investigate how trust affects customers' intentions to adopt digital payment systems in Delhi NCR region. The survey data, analyzed using structural equation modeling (SEM) reveal that performance expectancy and trust have a major influence on behavioral intention, whereas effort expectancy and facilitating conditions have a lesser impact. The results indicate that trust and performance expectancy significantly drive behavioral intention, the effects of facilitating conditions and effort expectancy are comparatively weaker. These findings suggest that Fintech providers should prioritize on building trust and enhancing the reliability of their applications to boost user confidence and adoption rates. This study aligns with prior research emphasizing the pivotal role of trust in technology adoption. For example, a study on payments bank adoption by Indian customers extended the UTAUT model by incorporating perceived credibility, identifying it as a strong predictor of behavioral intention. Similarly, research on mobile payment adoption in India integrated trust into an extended UTAUT model, underscoring its significant impact on consumer behavior. These findings collectively reinforce the critical role of trust in driving the adoption of Fintech services.

Keywords: Fintech, structural equation modelling, trust, behavioral intention

Acknowledgments: Thanks to all parties who have supported the implementation of this research. I hope this research can be useful.

For citation:

Neha Sharma., Ruby Mittal. (2025). Trust-Driven Adoption of FinTech Digital Payments via using Structural Equation Modelling. *Radinka In Social Science*, 1(1), 26-36.

Introduction

FinTech typically refers to the emerging technologies that improve the information transmission, risk management framework and quality of data processing of financial institutions (Wu et al., 2024); (Campos-Teixeira et al., 2025). Fintech as products or services in financial service companies that were created on highly innovative and disruptive service technologies (Anifa et al., 2022). In this era of digitalization, financial technology innovation, or FinTech, increases the efficiency of financial markets in providing financial services to the general population. The popularity of fintech aligned with the internet revolution in the early 1990s. One of the key elements influencing the expansion of the fintech industry has been the Internet. Fintech companies, technology developers, the government, consumers, and established or conventional financial institutions make up the Fintech Ecosystem. Additionally, peer-to-peer (P2P) lending, crowdfunding, payment, wealth management, capital markets, and insurance (Insurtech) business models can all be included in the fintech business model. FinTech products are divided into six categories: digital finance (such as crowdlending, crowdfunding, and peer-to-peer lending), digital investment (such as Mobile Trading, Digital money) such as cryptocurrency and electronic money), Digital Payments (such as m-payments), and Digital Insurance and Robo-advisors, or Computerized Financial guidance.

Customers' trust in adopting a new technology platform is greatly influenced by the Unified Theory of Acceptance and Use of Technology (UTAUT) Model's performance expectancy, effort expectancy, social influence, and facilitating factors (Sultana et al., 2023). The UTAUT model has not received much attention in the context of FinTech adoption in Delhi NCR; most studies concentrate on adoption determinants in general rather than the influence of trust on behavioral intention. Trust's direct impact is still poorly understood, and there is a dearth of empirical study on demographic differences in trust-based adoption, despite the fact that performance expectation and effort expectancy have been extensively examined. In order to improve the acceptance of FinTech digital payments, this gap emphasizes the necessity of region-specific insights and deliberate trust-building measures. Research Objective; The study aims to use an expanded UTAUT model to investigate how trust affects behavioral intentions when adopting fintech digital payment systems; To investigate the impact of performance expectancy, effort expectancy, and Facilitating conditions on fintech adoption among users in the Delhi-NCR region; To analyze how demographic characteristics (Age, Gender, Education, and Employment status) influence fintech adoption trends. Review of Literature; A literature review summarizes and synthesizes prior research and arguments, without introducing new ideas. A literature review summarizes key material and synthesizes it to address a specific research challenge. Financial technology (Fintech); Researchers investigated the link between technological innovation and financial transformation, using multiple Fintech definitions.

McKinnon and Shaw coined the phrase "Financial Deepening" in 1973 which quickly advanced sci-tech in the international economy (El Hajj & Farran, 2024). "Fintech is deemed effective and efficient in various ways, in economic value, time, energy, cost, productivity, and social responsibility" Research model and Hypotheses development: We proposed a research model for the current study by adopting the UTAUT model. Tries to characterize the user's intention to incorporate system information based on actual behavioral intentions. However, several previous studies used the UTAUT model to investigate and conclude users' behavioral

intentions toward FinTech services. *Performance expectancy*; Performance expectancy is the scope of certainty to which an individual confident that the usage of a particular technology may support them to maximize the potential task performance. (Menon & Shilpa, 2023), discussed that performance expectancy is a dominant predictor of users' intention toward information technology usage. The performance expectancy significantly predicates users' intention towards using FinTech services. Performance Expectancy is defined as "the degree to which an individual believes that using the system will help him/her to attain gains in job performance".

Moreover, the literature clearly exhibits that performance expectancy has a major significant relationship with intention to use. Thus, based on this background, following first hypothesis was proposed: H1: Performance expectancy positively influence the behavior intention of adoption of Fintech Digital Payments. Effort Expectancy as "the degree of ease associated with the use of the system". Thus, based on this background second hypothesis was proposed: H2: Effort expectancy positively influence the behavior intention of adoption of Fintech Digital Payments. Facilitating Conditions; conditions as "the degree to which an individual believes that an organizational and technical infrastructure exists and will help him/her to use the system". The literature also demonstrates a significant relationship between the facilitating condition and both usage intention and behavior Thus, based on this background fourth hypothesis was proposed: H3: Facilitating conditions directly influence the behavior intention of adoption of Fintech Digital Payments. Trust ; According to (Kaufmann, 2016), Trust in technical tools develops through a sense of security. Trust is a key aspect in encouraging customers to adopt new technology. A person's opinion of the internet service providers' reliability. (Apau et al., 2025), found that trust is a key component in adopting mobile banking due to the confidential nature of customer data and funds.

According to (Chawla et al., 2023), perceived trust is essential for technology adoption which helps in the development of trustworthy relationships with customers; H4: There is a significant influence of customer trust on behavior intention of adoption of Fintech Digital Payments. Behavior Intention: Similarly, studies conclusively show that use behavior and behavior intention are significantly correlated. Since the emergence of FinTech and its integration with the traditional financial services sector, behavior intention for use has emerged as a crucial metric to assess customers' likelihood of using and embracing FinTech services. According to (Wei et al., 2025), original TAM model, usage behaviors are influenced by behavioral intention. A person's behavioral intention is also greatly influenced by the rate of technology innovation in financial services in relation to consumer awareness.

Methodology

Measurement scales

To achieve the goal of this study, we created five hypotheses based on earlier research for the measurement of UTAUT components (i.e., Fintech Digital payment adoption, social influence, performance expectancy, effort expectancy, and facilitating condition) thus, we extended the model by adding for two well-known constructs called Trust. This study consists of 5 variables with 23 items. The UTAUT model consists of five main constructs, namely performance expectancy ("PE"), effort expectancy ("EE"), facilitating conditions (FC), Trust (TR) & behavioral intention ("BI") to use the financial services, and usage behavior. All the responses are measured on a 5-point Likert scale ranging from 1 – Strongly Disagree to 5 – Strongly Agree.

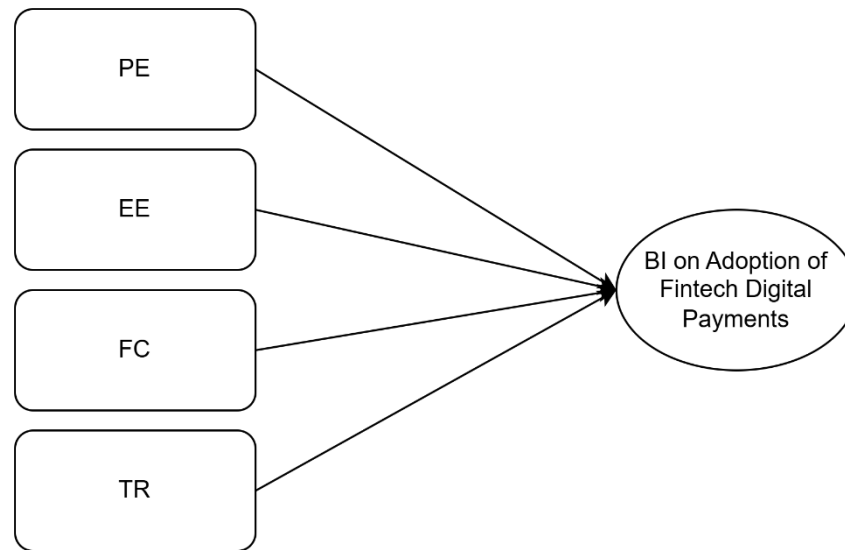
Sample and data collection

For the purpose of this study, primary data has been collected online through Google forms. A Questionnaire was prepared in two sections and sent to 400 people through emails. The first part of the questionnaire was focused on the demographic information of the respondents e.g., Gender, age, Education, Employment and FinTech digital payment applications. The second part of the questionnaire was focusses on 23 items of five constructs used in the study namely performance expectancy, effort expectancy, facilitating conditions, behavior intention and use behavior of the respondents for digital financial services. Only 376 complete questionnaires are considered for the analysis in the study. The non-probability sampling technique was used for data collection. The collected data was analyzed using SPSS and Jamovi software. The study was conducted from November 2024 to January 2022 period. Table 1 shows that demographic factors indicate various trends in the use of FinTech digital payment applications. Males (56.9%) have a higher adoption rate, indicating greater engagement with fintech digital payment, although females (43.1%) indicate better inclusivity in this field. The 18-30 age group (42.8%) has the highest usage rate, owing to digital literacy and ease with technology, while the 31-40 age group (71.3%) has large engagement, most likely due to their active financial roles. Adoption decreases among older age groups, reflecting traditional preferences.

Educational status is important, with high school (34.3%) and a smaller number of post graduates' holders (3.7%) constituting the largest user base, demonstrating the accessibility of FinTech services. Employment figures reveal varying usage, with private sector employees (22.6%) and public sector workers (20.7%) using these platforms for convenience, while students, retirees, and homemakers' figure in a significant percentage (41.8%) of users. Paytm (28.19%) and Google Pay (25.5%) are the most popular FinTech applications, favored for their user-friendly interfaces and general acceptance. Phone Pay (20.8%), HDFC Mobile Banking (11.9%), and SBI Yono (13.5%) follow, each catering to distinct customer needs and preferences.

Table1. Demographic characteristics of participants

Basis	Classification	Frequency	Percentage (%)
Gender	Male	214	56.9
	Female	162	43.1
Age	18-30	161	42.8
	31-40	107	71.3
	41-50	63	16.8
	50 above	45	12
Education	Less Than High school	64	17
	High school	129	34.3
	Diploma	112	29.8
	Graduate	57	15.2
	Post Graduate	14	3.7
Employment staus	Private sector	85	22.6
	Public sector	78	20.7
	Self Employed	56	14.9
	Other	157	41.8
Which FinTech digital payment applications do you use regularly.	Google Pay	96	25.5
	Phone Pay	78	20.8
	Paytm	106	28.19
	HDFC Mobile Banking	45	11.9
	SBI Yono	51	13.5



Source: Proposed framework (Compiled by researcher)

Results of the Cronbach alpha reliability of adoption of Fintech Digital Payments variables among the respondents are presented in table III. The table shows the range of adoption of Fintech Digital payment reliability in the variable of Performance Expectancy, Effort Expectancy, Facilitating Conditions, Trust & Behavioral Intention are between 0.818 to 0.926.

Table 2. Result of reliability test

Variables	Cronbach alpha	No. of Items
Performance Expectancy	0.837	5
Effort expectancy	0.926	4
Facilitating Conditions	0.818	4
Trust	0.888	5
Behavioral Intention	0.869	5

Structural model results

This study employed structural equation modeling (SEM) to examine the proposed relationships between the variables. The structural model analyzes by Jamovi software. The result shows an acceptable fit for the proposed model fit indices were assessed in relation to predetermined thresholds. With 220 degrees of freedom ($\chi^2/df = 2.0$), the chi-square value χ^2 was 440, falling within the acceptable range ($\chi^2/df \leq 3$). A strong model fit is shown by the Standardized Root Mean Square Residual (SRMR) value of 0.050, which is below the cutoff of 0.08. Likewise, the RMSEA (Root Mean Square Error of Approximation) was 0.052, which is less than the 0.06 upper limit for a satisfactory match. A satisfactory fit between the model and the data is shown by the Comparative match Index (CFI) of 0.997 and the Tucker-Lewis Index (TLI) of 0.996, both of which are higher than the suggested cutoff of 0.95. Furthermore, the model's validity is further supported by the Adjusted Goodness-of-Fit Index (AGFI) of 0.992, which is inside the conventional criterion of 0.90. Together, these fit indices show that the structural model fits the observed data quite well, bolstering the acceptance of the proposed hypotheses and giving confidence in the validity of the proposed relationships.

Measurement Model Validation

The measurement model describes how observed indicators and variables are used to measure both endogenous and external constructs. Since measurement variables serve as the foundation for the study of the abstract hypothesis, the properties of the survey items (observed variables) are crucial.

Table 3. CFA model estimations Component Loadings

	Component				
	1	2	3	4	Uniqueness
PE_1	0.653				0.497
PE_2	0.655				0.518
PE_3	0.648				0.483
PE_4	0.795				0.384
PE_5	0.697				0.557
EE_1			0.809		0.259
EE_2			0.910		0.150
EE_3			0.913		0.130
EE_4			0.892		0.205
FC_1				0.844	0.334
FC_2				0.831	0.315
FC_3				0.806	0.371
FC_4				0.772	0.378
T_1		0.702			0.486
T_2		0.871			0.243
T_3		0.893			0.235
T_4		0.929			0.202
T_5		0.754			0.384
BI_1	0.812				0.398
BI_2	0.827				0.347
BI_3	0.820				0.335
BI_4	0.756				0.462
BI_5	0.527				0.515

Note. 'Promax' rotation was used

As shown in the table, it seems that the degree of fit is excellent or acceptable. The model established in this part, where the four-factor structure is tested, is confirmed. The research model established after factor analysis is presented in Figure 2.

Table 4. Model fit indices.

Model fit indices	References	Values
Chi-2/df	<5	2.38
Tucker-Lewis Index (TLI)	≥ 0.90	0.933
Comparative Fit Index (CFI)	≥ 0.90	0.942
Root means square error approximation (RMSEA)	≤ 0.08	0.0674
Standardized root means square residual (SRMR)	≤ 0.08	0.0507

To determine the fit of the structured model, which was developed using CFA (Table 3). The chi-square/df was 2.38, which is fulfilled this condition. Several indicators of the goodness of fit of the model were found to be satisfactory, with RMSEA = 0.0674; both TLI = 0.933 and CFI = 0.942 which were higher than 0.9. Finally, the standardized root means square residual (SRMR), which measures the average magnitude of the discrepancies between observed and expected correlations as an absolute measure of fit criterion, had a value of 0.0507.

SEM

Structural Equation Modeling, a covariance-based method, was used to test the hypothesis. JAMOV Version 2.4.8 was used for the Structural Equation Modeling (SEM) figure shows how Performance Expectancy (PE), Effort Expectancy (EE), Facilitating Conditions (FC), and Trust (TR) affect Behavioral Intention (BI) to use fintech payment systems. The model reveals that Performance Expectancy (0.65) has the greatest positive effect on Behavioral Intention, implying that users are more inclined to adopt digital payments when they perceive significant performance advantages. Effort Expectancy (0.26) also has a favorable effect on Behavioral Intention, indicating that ease of use is important in adoption (Wang et al., 2023); (Bajunaied et al., 2023). However, Trust (-0.05) and Facilitating Conditions (-0.04) have slight or negligible impacts, indicating that, while trust is important, it may not directly drive behavioral intention. Furthermore, correlations between independent constructs, such as PE and EE (0.57) and FC and EE (0.43), demonstrate interdependence among these variables. Overall, the data imply that fintech adoption is driven by improved performance rather than trust and external factors, bringing useful insights into consumer behavior in digital finance (Cioc et al., 2023).

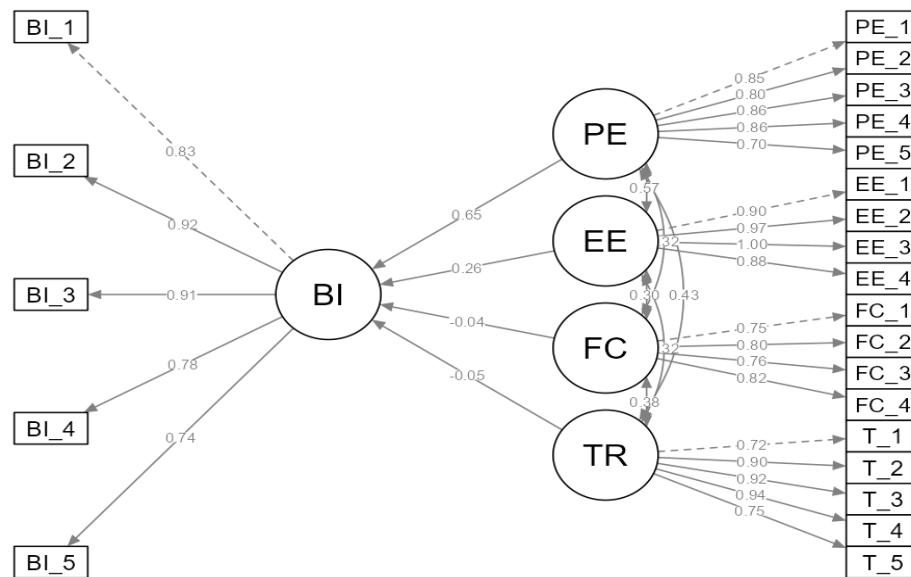


Figure 1. Results of SEM Model using jamovi

Hypothesis Relationship Path Coefficient Result

The Structural Equation Modeling (SEM) analysis's hypothesis testing results show that H1 (Performance Expectancy → Behavioral Intention) is accepted since it has a significant positive effect (0.65), demonstrating that fintech adoption is driven by perceived performance gains. With a moderately positive influence (0.26), H2 (Effort Expectancy → Behavioral Intention) is also accepted, suggesting that adoption is facilitated by ease of use. Since the effect is small and negative (-0.04), H4 (Facilitating Conditions → Behavioral Intention) is rejected, indicating that adoption is not greatly impacted by external support. Since its effect is likewise modest and negative (-0.05), suggesting that trust does not directly drive fintech adoption, H5 (Trust → Behavioral Intention) is also rejected. The provided SEM model does not examine H3 (Social Influence → Behavioral Intention) or H6 (Behavioral Intention → Usage Behavior) (Saprikis et al., 2022).

Table 5. Hypothesis interpretation

Hypothesis	Relationship	Path coefficient	Result
H1	Performance Expectancy → Behavioral Intention	0.65	Accepted
H2	Effort Expectancy → Behavioral Intention	0.26	Accepted
H3	Facilitating Conditions → Behavioral Intention	-0.04	Rejected
H4	Trust → Behavioral Intention	-0.05	Rejected

H5	Behavioral Intention → Usage Behavior	Not Tested	No Conclusion
----	---------------------------------------	------------	---------------

Results

According to the demographic data, FinTech digital payments are more commonly adopted by men (56.9%), however female participation (43.1%) indicates that inclusivity is increasing. Due to their digital literacy, younger users (18–30: 42.8%) are more likely to adopt, although users in the 31–40 age range (71.3%) are more active, most likely as a result of financial obligations. Traditional inclinations are reflected in the fall in adoption among older people (Weck & Afanassieva, 2023); (Ghafran & Yasmin, 2024); (Coall et al., 2014). The majority of users (34.3%) are high school graduates, whereas postgraduates (3.7%) are still a minority. For convenience, both public and private sector workers (20.7%) and students, retirees, and stay-at-home moms (41.8%) favor digital payments. The top downloaded apps are Paytm (28.19%) and Google Pay (25.5%), with PhonePe (20.8%), HDFC Mobile Banking (11.9%), and SBI Yono (13.5%) following closely behind. A good model fit is confirmed by SEM analysis, and major indices (CFI: 0.997, RMSEA: 0.052) satisfy suggested thresholds. The most powerful factor influencing behavioral intention is performance expectancy (0.65), whereas effort expectancy (0.26) also has an impact. The fact that Trust (-0.05) and Facilitating Conditions (-0.04) have little effect highlights how performance is the main factor driving fintech adoption (Amnas et al., 2023); (Tariq et al., 2024); (Tedyono et al., 2025).

Conclusion

The results imply that ease of use and performance advantages, rather than confidence or outside assistance, are the main factors driving fintech adoption. When utilizing digital payment platforms, users give priority to technological efficacy and efficiency. The study emphasizes that although favorable circumstances and trust are crucial, they have little effect on behavioral intention. Adoption is greatly aided by digital literacy and intuitive user interfaces, especially for younger and more financially engaged people. The prevalence of certain apps, such as Paytm and Google Pay, highlights how crucial convenience and broad acceptance are. The suggested links' validity is supported by the strong model fit. To better understand fintech adoption trends, future research should examine other elements like social influence and long-term usage patterns.

Conflicts of Interest

The authors declare no conflict of interest.

References:

- Amnas, M. B., Selvam, M., Raja, M., Santhoshkumar, S., & Parayitam, S. (2023). Understanding the Determinants of FinTech Adoption: Integrating UTAUT2 with Trust Theoretic Model. *Journal of Risk and Financial Management*, 16(12), 505. <https://doi.org/10.3390/jrfm16120505>
- Anifa, M., Ramakrishnan, S., Joghee, S., Kabiraj, S., & Bishnoi, M. M. (2022). Fintech Innovations in the Financial Service Industry. *Journal of Risk and Financial Management*, 15(7), 287. <https://doi.org/10.3390/jrfm15070287>

- Apau, R., Titis, E., & Lallie, H. S. (2025). Towards a Better Understanding of Mobile Banking App Adoption and Use: Integrating Security, Risk, and Trust into UTAUT2. *Computers*, 14(4), 144. <https://doi.org/10.3390/computers14040144>
- Bajunaied, K., Hussin, N., & Kamarudin, S. (2023). Behavioral intention to adopt FinTech services: An extension of unified theory of acceptance and use of technology. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(1), 100010. <https://doi.org/10.1016/j.joitmc.2023.100010>
- Campos-Teixeira, D., Tello-Gamarra, J., Reis, J., Longaray, A. A., & Hernani-Merino, M. (2025). Fintechs and Institutions: Evidence from an Emerging Economy. *Journal of Risk and Financial Management*, 18(4), 212. <https://doi.org/10.3390/jrfm18040212>
- Chawla, U., Mohnot, R., Singh, H. V., & Banerjee, A. (2023). The Mediating Effect of Perceived Trust in the Adoption of Cutting-Edge Financial Technology among Digital Natives in the Post-COVID-19 Era. *Economies*, 11(12), 286. <https://doi.org/10.3390/economies11120286>
- Cioc, M. M., Popa, Ștefan C., Olariu, A. A., Popa, C. F., & Nica, C.-B. (2023). Behavioral Intentions to Use Energy Efficiency Smart Solutions under the Impact of Social Influence: An Extended TAM Approach. *Applied Sciences*, 13(18), 10241. <https://doi.org/10.3390/app131810241>
- Coall, D. A., Hilbrand, S., & Hertwig, R. (2014). Predictors of Grandparental Investment Decisions in Contemporary Europe: Biological Relatedness and Beyond. *PLoS ONE*, 9(1), e84082. <https://doi.org/10.1371/journal.pone.0084082>
- El Hajj, M., & Farran, I. (2024). The Cryptocurrencies in Emerging Markets: Enhancing Financial Inclusion and Economic Empowerment. *Journal of Risk and Financial Management*, 17(10), 467. <https://doi.org/10.3390/jrfm17100467>
- Ghafran, C., & Yasmin, S. (2024). Beyond conventional financialization: Intersectional insights and Indigenous responses to financial inequality in the UK. *Critical Perspectives on Accounting*, 100, 102771. <https://doi.org/10.1016/j.cpa.2024.102771>
- Kaufmann, S. (2016). Security Through Technology? Logic, Ambivalence and Paradoxes of Technologised Security. *European Journal for Security Research*, 1(1), 77–95. <https://doi.org/10.1007/s41125-016-0005-1>
- Menon, D., & Shilpa, K. (2023). “Chatting with ChatGPT”: Analyzing the factors influencing users’ intention to Use the Open AI’s ChatGPT using the UTAUT model. *Heliyon*, 9(11), e20962. <https://doi.org/10.1016/j.heliyon.2023.e20962>
- Saprikis, V., Avlogiaris, G., & Katarachia, A. (2022). A Comparative Study of Users versus Non-Users’ Behavioral Intention towards M-Banking Apps’ Adoption. *Information*, 13(1), 30. <https://doi.org/10.3390/info13010030>
- Sultana, N., Chowdhury, R. S., & Haque, A. (2023). Gravitating towards Fintech: A study on Undergraduates using extended UTAUT model. *Heliyon*, 9(10), e20731. <https://doi.org/10.1016/j.heliyon.2023.e20731>
- Tariq, M., Maryam, S. Z., & Shaheen, W. A. (2024). Cognitive factors and actual usage of Fintech innovation: Exploring the UTAUT framework for digital banking. *Heliyon*, 10(15), e35582. <https://doi.org/10.1016/j.heliyon.2024.e35582>
- Tedyono, R., Madyan, M., Harymawan, I., & Margono, H. (2025). Leadership Is a Driving Factor: Financial Technology Effect in Rural Bank Performance. *Journal of Risk and Financial Management*, 18(7), 353. <https://doi.org/10.3390/jrfm18070353>
- Wang, J., Li, C., Wu, J., & Zhou, G. (2023). Research on the Adoption Behavior Mechanism of BIM from the Perspective of Owners: An Integrated Model of TPB and TAM. *Buildings*, 13(7), 1745. <https://doi.org/10.3390/buildings13071745>

-
- Weck, M., & Afanassieva, M. (2023). Toward the adoption of digital assistive technology: Factors affecting older people's initial trust formation. *Telecommunications Policy*, 47(2), 102483. <https://doi.org/10.1016/j.telpol.2022.102483>
- Wei, W., Prasetyo, Y. T., Belmonte, Z. J. A., Cahigas, M. M. L., Nadlifatin, R., & Gumasing, Ma. J. J. (2025). Applying the technology acceptance model – Theory of planned behavior (TAM-TPB) model to study the acceptance of building information modeling (BIM) in green building in China. *Acta Psychologica*, 254, 104790. <https://doi.org/10.1016/j.actpsy.2025.104790>
- Wu, Z., Pathan, S., & Zheng, C. (2024). FinTech adoption in banks and their liquidity creation. *The British Accounting Review*, 101322. <https://doi.org/10.1016/j.bar.2024.101322>