

# Factors Influencing Mobile Banking Usage Among Senior Citizens: An Artificial Intelligence Perspective

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**Abstract:** This paper tries to find out the impact of perceived awareness, perceived risk, and perceived usefulness on the Behavioural Intention of senior citizens regarding the adoption of AI-enabled mobile banking services.

**Design/Methodology:** Data is collected from 200 users of mobile banking. The random sampling method is used to collect information. A five-point likert scale has been used to collect descriptive data. To find out the effect of perceived awareness, perceived risk and perceived usefulness on behavioural intention regression analysis has been used.

**Findings:** The findings reveal that reliability and validity of data are satisfactory. Regression analysis found that perceived awareness and perceived usefulness significantly influence behavioural intentions, while perceived risk exerts a relatively weaker influence.

**Research Limitations:** This study is conducted only on the current users of mobile banking. However, knowing the real intention behind adoption rather than the adoption opinion of both users matters.

**Practical Implication:** Senior citizens represent a substantial and significant market segment in India. Banks and fintech companies can actively target them as a suitable market, recognizing the immense potential and unique needs within this demographic.

**Keywords:** Awareness, Perceived Usefulness, Perceived Risk, Mobile banking, Artificial Intelligence

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## 1. Introduction

The banking industry has been transformed by rapid growth and innovation in telecommunications, bringing about the emergence of Mobile Banking, also known as M-banking. This advancement utilises mobile technology as a modern means for customers to interact with banks, providing a range of services through mobile applications. Mobile banking has become an essential part of m-commerce, giving customers easy and efficient access to their banking services. Through mobile banking, customers can conduct financial transactions such as fund transfers, bill payments, stock market activities, and other financial services, all using their mobile devices (Shaikh and Karjaluo, 2015). These services are offered through different channels, making them easily accessible to customers.

These services are made available through various channels, including Short Messaging Services (SMS), Interactive Voice Response (IVR), mobile applications, and Wireless Application Protocol (WAP) (Shankar et al. 2020). In light of this technological shift, banks are harnessing mobile innovations to provide cost-effective and profitable services to their customers. As customers

increasingly turn to mobile platforms for their banking needs, Mobile banking has begun to overshadow traditional electronic banking methods. The banking sector is currently prioritizing the integration of artificial intelligence into mobile banking to enhance compatibility and stay competitive in the market. Services such as automated bill payments, investment advice, and account management have become possible through mobile banking platforms. The integration of AI chatbots enables customers to engage in direct conversations with customer service within mobile apps, thereby enhancing the overall benefits of mobile banking (Payne et al., 2018). Artificial intelligence plays a crucial role in improving customer trust by ensuring secure transactions. Previous studies conducted by Lin et al. (2023) have found that AI has a positive impact on customer satisfaction. Many banks are actively encouraging their customers to embrace self-service technology, which not only brings cost savings but also promotes personalised cross-selling opportunities (Hoehle and Huff, 2012; Sharma and Govindaluri, 2014; Sharma et al. 2015; Al-Somali et al., 2009). What's more, offering a variety of multi-channel services and products adds a human touch to the banking

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relationship, enhancing the connection between banks and their valued customers (Laukkanen, 2007). However, alongside its remarkable benefits, M-banking also presents challenges and issues that users and banks must contend with. According to Yu (2013), despite the numerous perceived benefits for customers, the actual usage of m-banking has not increased at a rate as initially anticipated. It has been seen that the younger population easily adapts to new technology as senior citizens are considered laggards. The same case applies to mobile banking adoption. The most significant milestone came in 2016 with the introduction of the Unified Payment Interface (UPI), which revolutionised the mobile banking sector by enabling fast and seamless fund transfers through mobile apps.

In 2016, the Indian government initiated a demonetization drive that catalysed the adoption of digital banking. The scarcity of cash compelled people to shift towards digital banking, with mobile banking emerging as the preferred option. The government further promoted digital banking in India by launching various schemes such as "Digital India" and "Jan Dhan Yojana". During that time, many fintech companies emerged trying to take advantage of the wider market. These companies introduced innovative ideas, such as the integration of artificial intelligence into the banking industry. In 2017, major banks started implementing artificial intelligence in mobile banking apps, with the aim of increasing their services (Rahman et al. 2022). The leading market for these startups was the unbanked population, which could contribute to financial inclusion. This paper embarks on an exploration of customer awareness, perceived risk, and perceived usefulness in the context of Mobile banking adoption. As Mobile banking continues to reshape the banking landscape, understanding these factors becomes paramount in assessing its impact on user behaviour and the broader financial industry.

## OBJECTIVES

1. Evaluate the impact of perceived awareness on the behavioral intentions of senior citizens towards mobile banking adoption.
2. Examine the influence of perceived risk on the behavioral intentions of senior citizens in adopting mobile banking.
3. Assess the role of perceived usefulness in shaping the behavioral intentions of senior citizens regarding mobile banking adoption.

## 2. Literature Review

### 2.1 Perceived Awareness

Awareness of mobile banking is crucial because it serves as the first step in the adoption process. Lee et al. (2013) define the level of consumer knowledge about electronic banking channels, and their research highlights the significance of

awareness in the context of mobile banking (MB) adoption. This awareness is particularly crucial because, as Al-Somali et al. (2009) noted, mobile banking represents a novel experience for most bank clients, making low awareness a significant obstacle to its adoption. Chen (2013) emphasises the role of awareness in influencing attitudes towards mobile banking adoption. Additionally, Hanafizadeh and Khedmatgozar's study in 2012 found that awareness of Internet banking services played a pivotal role in reducing various aspects of perceived risk among clients. As Laforet S, Li X (2005) note, technological awareness plays an important role in adoption. This underscores the importance of not only providing mobile banking services but also actively promoting awareness about these services. Awareness of mobile banking serves as the initial step in the adoption process. When individuals are made aware of mobile banking services, they become more inclined to consider using them for their financial needs. AI and algorithm-driven interactions are gaining ground in mobile banking, with the aim of providing users with a more convenient banking experience and improved security. uum of activities and tasks (Korzeniowski, 2017). Banks are leveraging artificial intelligence to enhance awareness of their services, and the implementation of 24/7 customer service through AI is facilitating efficient assistance (Sheehan et al. 2020)

**H1:** Perceived awareness has a significant impact on behavioural intention of consumers.

### 2.2 Perceived Usefulness

The degree to which a person thinks that utilising a specific system would improve his or her ability to accomplish their work is known as perceived usefulness (Davis, 1989). A major factor in attitude is perceived utility, which motivates users of 21st-century banking to adopt more cutting-edge and user-friendly technologies that provide them more freedom in carrying out transactions, paying bills, and carrying out other banking matters (Pikkarainen et al. 2004). It has been discovered that perceived usefulness significantly improves attitudes and usage intentions about using MB services (Shaikh and Karjaluoto, 2015; Purwanegara et al. 2014). Indeed, a person's willingness to adopt a certain system for transactions depends on how they view its application (Hanafizadeh et al., 2014). Consumers will only embrace new technology if they believe that using mobile banking technology offers them superior and high-quality services (Shankar et al. 2020). Chatbot innovation stands apart as a particular and fascinating type of computer-based intelligence programming. It draws in clients through prearranged questions, guaranteeing affable, productive correspondence and giving quick answers for issues. It increases the satisfaction level of users (Mogaji et al. 2021)

**H2:** Perceived usefulness has a significant impact on the behavioural intention of consumers.

**2.3 Perceived risk**

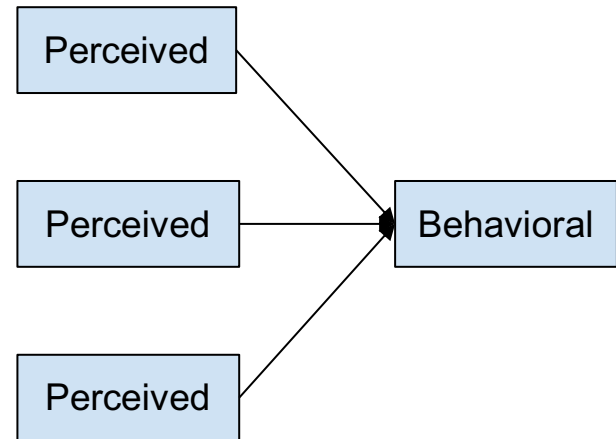
It represents the extent to which consumers believe that using or adopting a certain product or service may result in undesirable consequences or loss (Maduku, D. K. (2016). According to Laukkanen et al. (2009), Perceived risk can manifest in various forms, including financial risk, performance risk, psychological risk, social risk, and time risk. When it comes to how perceived risk affects customers' decisions regarding the adoption of a novel technology or service, like mobile banking, it plays a pivotal role in shaping their choices. Despite being advantageous and simple to use, the mobile banking channel's level of use is based on the risk involved in completing financing transactions on this channel (Chen, 2013; Yang & Zhang, 2009). Hanafizadeh et al. (2014) claim that the remote connectivity of Mobile banking puts it in more danger than other stationary devices. According to empirical studies, customers' perceptions of the risk associated with using the mobile banking channel harm their decision to use and uptake of the services (Mohapatra et al., 2020; Safeena et al., 2011; Zhou, 2012). Perceived risk in this context arises from a customer's feelings of uncertainty or unease regarding their actions and the potential negative consequences of those actions. This sentiment has been acknowledged by various researchers (Kim et al. 2008; Luo et al. 2010; Shin, 2010). Furthermore, Mobile banking apps are challenging for users due to the presence of unnecessary pop-up offers from unrecognised providers. These offers not only confuse customers but also pose a security risk. Given that artificial intelligence-enabled mobile banking is a tremendous innovation in India, it becomes essential to explore users' intentions to use it despite the associated risks (Gaur & Ondrus, 2012; Jones, 2014). Several studies have underscored the significance of security risk as a factor influencing users' behavioural intentions to adopt mobile banking (Hassan et al., 2021; Susanto et al. 2020). As per the research carried out by Zhang, Zhu, and Liu (2012), mobile banking is perceived to be in its initial phase. Despite its widespread adoption, it has yet to gain the confidence of customers. Artificial intelligence plays an important role in improving the security of financial transactions by providing a more robust exchange mechanism. AI technology helps provide advanced security measures that better identify and mitigate potential risks in financial transactions (Roseline et al. 2022).

**H3:** Perceived risk has a significant influence on behavioural intention of consumers.

**2.4 Behavioural Intention**

According to Venkatesh et al., 2003 behavioural intention is considered a predictor of actual usage. Behavioural intention refers to a character's subjective probability or readiness to perform selected conduct (Davis et al. 1989). It is a key concept inside the Theory of Planned Behavior (TPB), a psychological principle evolved by way of Icek Ajzen. According to the TPB, behavioural intention is an immediate precursor to real behaviour.

Fig:1 Research Model



**3. Methodology:**

In this study, an empirical research approach is employed to examine the relationships between perceived awareness, perceived risk, perceived usefulness, and behavioural intentions in the context of mobile banking adoption. The sample size for this research comprises 200 participants, selected through simple random sampling due to its practicality and accessibility, given the constraints of time and resources (Chiu et al., 2017; Zhang et al., 2018). Data collection is accomplished through the administration of a structured questionnaire designed to measure perceived awareness, perceived risk, perceived usefulness, and behavioural intentions associated with mobile banking adoption. Participants are approached through various means, including online surveys, face-to-face interviews, and phone surveys, to maximise accessibility. There are differences in the perceptions of male and female participants, and research shows that in addition to male participants' desire to share more information compared to their female counterparts, technology acceptance of knowledge is higher than in women.

The research design adopted is causal, aiming to establish causal relationships between the independent variables (perceived awareness, perceived risk, perceived usefulness) and the dependent variable (behavioural intentions). The study employs a 5-point Likert scale, where respondents can express their opinions on a spectrum from (1) indicating disagreement with the statement and (5) indicating agreement. Causal research allows us to assess how

changes in the independent variables influence the dependent variable. To investigate these relationships, we employ regression analysis and correlation analysis, specifically Pearson's correlation coefficient, using SPSS 26 as the statistical software. This comprehensive methodology ensures a robust examination of three hypotheses and a thorough understanding of the factors influencing consumer behaviour in the adoption of mobile banking services. As the research is focused on senior citizens, the target sample comprises individuals above 60 years of age. Data were initially collected randomly, and subsequently, only users of mobile banking were considered for the research. Perceived usefulness and

behavioural intention are adopted from the TAM model by Davis (1989), and perceived risk and awareness are incorporated to extend the model. The questionnaire comprises the demographic profile of respondents, and twelve statements are utilised to study the mobile banking perception of users. These statements are drawn from past literature, where they have been previously tested, ensuring the reliability and validity of the data.

**Table 1**

Constructs	Abbreviation	Items	Source
Intention	BI	Given the opportunity, I will use mobile banking services	Lin, 2011; Schierz et al., 2010
		I intend to use mobile banking in next year	
		I am likely to use mobile banking services in the near future	
Perceived usefulness	PU	Using mobile banking would enable me to pay more quickly	Kim and Mirusmonov, 2010
		Using mobile banking makes it easier for me to conduct transactions	
		I would find mobile banking a useful possibly for paying	
Awareness	AW	I received enough information about mobile banking services	Al-Somali et al., 2009
		I received enough information about the benefits of mobile banking service	
		I have received information about mobile banking from the bank	
Perception of risk	PR	Using Mobile banking services subjects my banking account to potential fraud	Featherman and Pavlou (2003)
		Using mobile banking services subjects my banking account to financial risk	
		I think using mobile banking services puts my privacy at risk	

**4. Data Analysis**  
**4.1 Reliability**

The variables in Table 2 are accompanied by their respective Cronbach's alpha coefficients. To be considered valid measures of these variables, Cronbach's alpha values

should meet or exceed a minimum threshold of 0.70, as recommended by George and Mallery in 2003 and Pallant in 2020. Reliability analysis ensures the consistency of measurement tools, contributing to accurate and trustworthy research outcomes. It allows researchers to assess the stability of data over time and across different groups, enhancing the overall quality of their study.

Table 2 Reliability Analysis

Constructs	Cronbach Alpha	No. of items
Perceived awareness	0.953	3
Perceived risk	0.978	3
Perceived usefulness	0.926	3
Behavioural Intention	0.894	3

4.2 Validity Analysis

Table 3 KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.838
Bartlett's Test of Sphericity	Approx. Chi-Square	df	1256.691
		Sig.	66
			<.001

The findings of Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy are shown in Table 3. The KMO measure indicates a moderately high degree of sample adequacy with a value of 0.838, showing that the variables in the study are likely to share common underlying factors.

Bartlett's Test of Sphericity reveals a considerable difference between the correlation matrix of the variables and an identity matrix, with an approximate chi-square value of 1256.691, 66 degrees of freedom, and a significance level smaller than 0.001. In simpler terms, there is evidence against the null hypothesis that the variables do not correlate.

Table 4

Component	1	2	3
AW1	0.835		
AW2	0.825		
AW3	0.812		
PU1	0.861		

PU2	0.841		
PU3	0.824		
BI1		0.803	
BI2		0.874	
BI3		0.913	
PR1			0.734
PR2			0.756
PR3			0.732

To find out the intricate relationship and to test the validity of various constructs used in the study to understand the impact of independent constructs on the dependent construct. Factor loadings shown in Table 4 indicate the strength of the relationship between the observed variables and the underlying factors. A factor loading close to 1 suggests a strong association, while values closer to 0 indicate a weaker relationship. Behavioural Intention shows a strong association whereas perceived risk is slightly lesser than other constructs.

These results suggest that the survey items within each variable are reliably measuring their respective constructs. Researchers can have confidence in the consistency of these variables when conducting further analyses or drawing conclusions based on these measures.

4.3 Multiple Regression Analysis

The study employed a test to determine the cause-and-effect relationship between the independent variables, PA (Perceived Awareness), PR (Perceived Risk), and PU (Perceived Usefulness), and the dependent variable, BI (Behavioural Intention), utilising SPSS 26 software (Field, 2009). The R-squared (R<sup>2</sup>) value, which stands at 0.605, signifies that the independent variables collectively account for 60.5% of the variance observed in BI. In simpler terms, these independent variables contribute significantly to explaining the dependent variable. The regression model used in this analysis exhibits a strong fit, as evident from the substantial F-value of 153.437, which is statistically significant at a 5% significance level. Consequently, the two null hypothesis is rejected, and it is established that both variables are related. This implies that the model is highly predictive, offering valuable insights for further analysis.

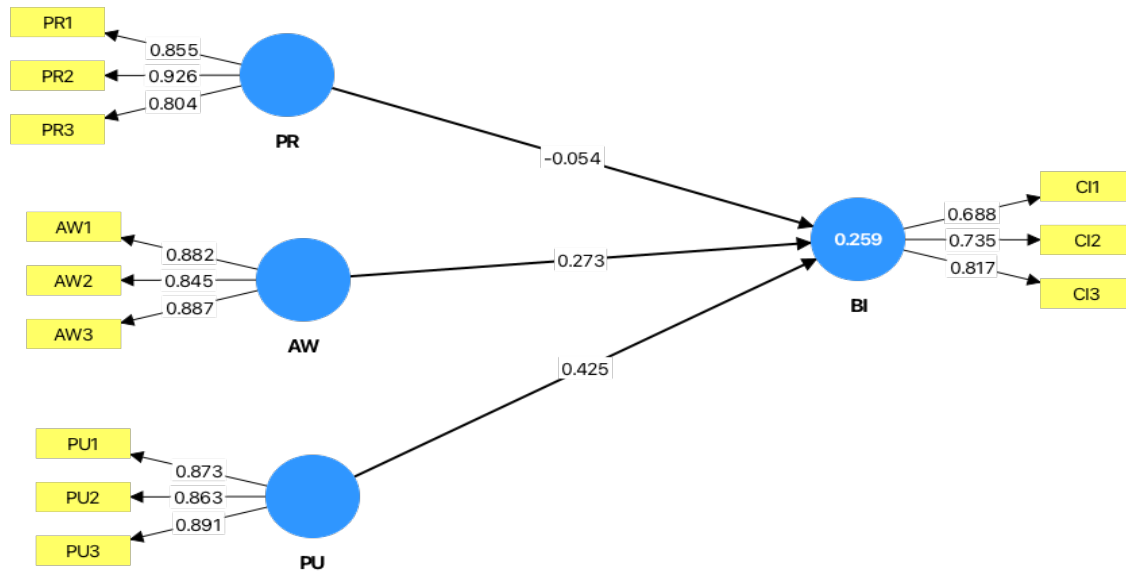
Table 4 Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.778a	0.605	0.593	0.7143

Predictors: (Constant), awareness, usefulness, risk	2	H2	AW → BI	< 0.001	Accepted
Structural model	3	H3	PR → BI	<0.001	Accepted

Fig:2 PLS SEM Model

The structural model illustrates the determinants of mobile



banking adoption intention among senior citizens. The measurement model confirms satisfactory indicator reliability, with outer loadings for Perceived Risk (0.804–0.926), Awareness (0.845–0.887), and Perceived Usefulness (0.863–0.891) exceeding the recommended threshold of 0.70, indicating strong construct validity. The indicators for Customer Intention range from 0.688 to 0.817, demonstrating acceptable reliability for exploratory research. Structural path analysis reveals that Perceived Usefulness exerts the strongest positive influence on adoption intention ( $\beta = 0.425$ ), followed by Awareness ( $\beta = 0.273$ ), suggesting that senior citizens are more inclined to use mobile banking when they recognize its benefits and possess adequate knowledge about its use. Conversely, Perceived Risk shows a negligible negative effect ( $\beta = -0.054$ ), indicating that perceived security or financial risks do not significantly hinder adoption. The model explains 25.9% of the variance in customer intention ( $R^2 = 0.259$ ), reflecting moderate explanatory power. These findings emphasize the importance of enhancing perceived usefulness and improving awareness to foster greater mobile banking adoption among older adults.

The results show that mobile banking adoption is most influenced by perceived awareness (AW) and usefulness (PU). Users found the interface of mobile banking simple and clear, leading to a positive experience (Kumar et al., 2020). Based on the hypothesis results presented above, we can infer that among the independent factors examined in the study on mobile banking adoption, Perceived Usefulness (PU) and Perceived Awareness (AW) are identified as the most prominent and perceived risk (PR) have a negative and insignificant influence on behavioral intention. The results have suggested that consumers have the necessary knowledge about mobile banking and they understand the usefulness of mobile banking use in their lives (Kumar et al., 2020; Mehrad & Mohammadi, 2017). Furthermore, the study highlighted the importance of ensuring that essential features and security measures are incorporated into mobile banking applications to increase user adoption and usage.

**5. Findings**

The findings of this study suggest that customers perceive mobile banking as highly beneficial, and they exhibit a significant level of awareness regarding its features, applications, and advantages (Hassan et al. 2021). These results are consistent with prior research by Kumar et al. (2020), Chawla and Joshi (2020), Hassan et al. (2021), and Singh and Srivastava (2020), all of which point to a substantial association between perceived usefulness (PU) and behavioural intentions (BI). The high degree of familiarity with smartphones and their associated

**Table 5 Structural model results**

S.No	Hypothesised		Result
	Hypothesis	p-Value	
1	H1	PU → BI	< 0.001 Accepted

applications indicates that when customers perceive mobile banking services as beneficial, they are more likely to embrace them. Additionally, they view the service as straightforward and helpful. This finding may be attributed to the increasing concern among consumers regarding the security of their financial assets when utilising mobile banking. These results underscore the pivotal role of perceived usefulness in influencing customers' intentions to adopt mobile banking. The perception of mobile banking as a valuable and secure tool for managing financial transactions fosters a positive attitude and encourages its adoption.

The high level of awareness observed among customers is a promising sign for the future of mobile banking, as it demonstrates the success of efforts to inform and educate customers about the benefits and functionalities of this technology. However, banks and financial institutions need to continue addressing security concerns and reinforcing trust in mobile banking services to ensure their continued growth and acceptance among consumers. The study's findings provide valuable insights for banks and policymakers seeking to enhance mobile banking adoption and its seamless integration into the financial services landscape. Further research and practical measures can build upon these insights to foster the expansion of mobile banking and its benefits to both consumers and the financial industry.

### 6. Conclusion and Recommendation

This research is based on the Technology Acceptance Model (TAM) with Perceived Usefulness (PU), Awareness (AW), and Perceived Risk (PR) as independent variables and Behavioural Intentions (BI) as the dependent variable carries several significant implications across various stakeholders. To increase the adoption of mobile banking it is necessary to focus on awareness campaigns to spread awareness. It has been found that awareness and usefulness act as a predictor for behavioral intention to adopt. For banking institutions and policymakers, the findings are essential in recognizing the impact of PU, AW, and PR on the behavioural intentions (BI) of senior citizens when considering the adoption of mobile banking. The findings of the study allow them to tailor services, marketing strategies, and educational campaigns to address the specific needs and concerns of this demographic. Banks and finance service providers can utilise the insights from this study to develop more user-friendly and secure mobile banking applications that cater to the unique preferences and requirements of senior citizens.

Additionally, IT departments and tech educators can collaborate with senior centres and community organisations to offer training and support to senior citizens

in understanding and practising mobile banking applications.

This research also paves the way for future studies, suggesting avenues for further exploration into the specific factors influencing PU, AW, and PR among senior citizens. Longitudinal studies can track the changes in behavioural intentions over time, offering insights into the evolving landscape of mobile banking adoption within this demographic.

Furthermore, encouraging the use of mobile banking among senior citizens aligns with the broader goal of achieving greater financial inclusion for this demographic.

### 7. References

- Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance online banking in Saudi Arabia. *Technovation*, 29(2), 130-141.
- Chawla, D., & Joshi, H. (2023). Role of mediator in examining the influence of antecedents of mobile wallet adoption on attitude and intention. *Global Business Review*. Retrieved from <https://doi.org/10.1177/0972150920924506>, 24(4), 609-625.
- Chen, C. (2013). Perceived risk, usage frequency and collaborative approach. *Journal of Technology in Behavioral Science*, 4, 73-85.
- Chiu, J. L., Bool, N. C., & Chiu, C. L. (2017). Challenges and factors influencing initial trust and behavioral intention to use mobile banking services in the Philippines. *Asia Pacific Journal of Innovation and Entrepreneurship*, 11(2), 246-278. doi:[10.1108/APJIE-08-2017-029](https://doi.org/10.1108/APJIE-08-2017-029)
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319-340.
- Engwanda, M. N. (2014). Factors affecting mobile banking adoption in the United States. Walden University. <https://scholarworks.waldenu.edu/archivedposters/75>
- Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: a perceived risk facets perspective. *International journal of human-computer studies*, 59(4), 451-474.
- Gaur, A., & Ondrus, J. (2012). The role of banks in the mobile payment ecosystem: A strategic asset perspective. In *Proceedings of the 14th Annual International Conference on Electronic Commerce* (pp. 171-177). doi:[10.1145/2346536.2346570](https://doi.org/10.1145/2346536.2346570)
- Hanafizadeh, P., Behboudi, M., Koshksaray, A. A., & Tabar, M. J. S. (2014). Mobile, AL-

- Hassan, H. E., & Wood, V. R. (2020). Does country culture influence consumers' perceptions toward mobile banking? A comparison between Egypt and the United States. *Telematics and Informatics*, 46, 101312. doi:[10.1016/j.tele.2019.101312](https://doi.org/10.1016/j.tele.2019.101312)
- Hassan, J., Nika, F. A., Amin, A., & Bashir, I. (2021). Emerging market and mobile technology usage: Evaluating intention to use mobile banking in India by Junaid Hassan, Prof. Fayaz Ahmad Nika, Aarif Amin, Ishfaq Bashir. SSRN. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3792943](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3792943)
- Hoehle, H., & Huff, S. (2012). The role of continuous trust in information systems continuance. *Summer Journal of Computer Information Systems*, 1, 1–9.
- Jones, W. (2014, April 28). Will bank customers PayM, Ping 'em or look for a cashpoint? Monitise Insights. Retrieved from <http://www.monitise.com/insights/2014/04/28/will-bank-customers-paym-pingem-lookcashpoint/>
- Kim, C., Mirusmonov, M. and Lee, I. (2010), "An empirical examination of factors influencing the intention to use mobile payment", *Computers in Human Behavior*, Vol. 26 No. 3, pp. 310-22
- Korzeniowski, P. (2017), "Bots should be in your contact center's future", *Customer Relationship Management*.
- Kumar Sharma, S., & Madhumohan Govindaluri, S. (2014). Internet banking adoption in India: Structural equation modeling approach. *Journal of Indian Business Research*, 6(2), 155–169. doi:[10.1108/JIBR-02-2013-0013](https://doi.org/10.1108/JIBR-02-2013-0013)
- Kumar, R., Singh, R., Kumar, K., Khan, S., & Corvello, V. (2023). How does perceived risk and trust affect mobile banking adoption? Empirical evidence from India. *Sustainability*, 15(5), 4053. doi:[10.3390/su15054053](https://doi.org/10.3390/su15054053)
- Khalifa, M., & Shen, K. N. (2008). Explaining the adoption of transactional B2C mobile commerce. *Journal of Enterprise Information Management*, 2, 110–124.
- Kumar, A., Dhingra, S., Batra, V., & Purohit, H. (2020). A framework of mobile banking adoption in India. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(2), 40. doi:[10.3390/joitmc6020040](https://doi.org/10.3390/joitmc6020040)
- Khan, M. R., Rana, S., & Hosen, M. I. (2022). Impact of trustworthiness on the usage of m-banking apps: A study on Bangladeshi consumers. *Business Perspectives and Research*, 10(2), 234–250. doi:[10.1177/22785337211001969](https://doi.org/10.1177/22785337211001969)
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, 44(2), 544–564. doi:[10.1016/j.dss.2007.07.001](https://doi.org/10.1016/j.dss.2007.07.001)
- Laforet, S., & Li, X. (2005). 'Consumers' attitudes towards online and mobile banking in China. *International Journal of Bank Marketing*, 23(5), 362–380. doi:[10.1108/02652320510629250](https://doi.org/10.1108/02652320510629250)
- Lee, H., Zhang, Y., & Chen, K. L. (2013). An investigation of features and security in mobile banking strategy. *Journal of International Technology and Information Management*, 22(4), 2.
- Lin, R. R., & Lee, J. C. (2023). The supports provided by artificial intelligence to continuous usage intention of mobile banking: Evidence from China. *Aslib Journal of Information Management*.
- Lin, H.-F. (2011), "An empirical investigation of mobile banking adoption: the effect of innovation attributes and knowledge-based trust", *International Journal of Information Management*, Vol. 31 No. 3, pp. 252-60.
- Lu, J., Yu, C. S., Liu, C., & Yao, J. E. (2003). Technology acceptance model for wireless Internet. *Internet Research*, 13(3), 206–222. doi:[10.1108/10662240310478222](https://doi.org/10.1108/10662240310478222)
- Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. *Decision Support Systems*, 49(2), 222–234. doi:[10.1016/j.dss.2010.02.008](https://doi.org/10.1016/j.dss.2010.02.008)
- Maduku, D. K. (2016). The effect of institutional trust on internet banking acceptance: Perspectives of South African banking retail customers. *South African Journal of Economic and Management Sciences*, 19(4), 533–548. doi:[10.4102/sajems.v19i4.1558](https://doi.org/10.4102/sajems.v19i4.1558)
- Mandrik, C. A., & Bao, Y. (2005). Exploring the concept and measurement of general risk aversion. In G. Menon, A. R. Rao & M. N. Duluth (Eds.). Retrieved from <https://www.acrwebsite.org/volumes/9140/volumes/v32/NA-32>, *Advances in consumer research*, 32. American College of Rheumatology Research and Education Foundation.
- Mehrad, D., & Mohammadi, S. (2017). Word of mouth impact on the adoption of mobile banking in Iran. *Telematics and Informatics*, 34(7), 1351–1363. doi:[10.1016/j.tele.2016.08.009](https://doi.org/10.1016/j.tele.2016.08.009)
- Mohapatra, M. R., Moirangthem, N. S., & Vishwakarma, P. (2020). Mobile banking adoption among rural consumers: Evidence from India. *American Business Review*, 23(2), 300–315. doi:[10.37625/abr.23.2.300-315](https://doi.org/10.37625/abr.23.2.300-315)

- Nor, K., & Pearson, J. (2007). The influence of trust on Internet banking acceptance. *Journal of Internet Banking and Commerce*, 12, 1–10.
- Payne, E. M., Peltier, J. W., & Barger, V. A. (2018). Mobile banking and AI-enabled mobile banking. *Journal of Research in Interactive Marketing*.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahlila, S. (2004). Consumer acceptance of online banking: An extension of the technology acceptance model. *Internet Research*, 14(3), 224–235. Retrieved from <https://doi.org/10.1108/10662240410542652>
- Rahman, M.; Ming, T.H.; Baigh, T.A.; Sarker, M. Adoption of artificial intelligence in banking services: An empirical analysis. *Int. J. Emerg. Mark.* 2022; ahead-of-print.
- Roseline, J.F.; Naidu, G.; Pandi, V.S.; alias Rajasree, S.A.; Mageswari, N. Autonomous credit card fraud detection using machine learning approach. *Comput. Electr. Eng.* **2022**, 102, 108132.
- Safeena, R., Hundewale, N., & Kamani, A. (2011). Customer's adoption of MobileCommerce: A study on emerging economy. *International Journal of e-Education, eBusiness, e-Management and e-Learning*, 1(3), 228–233.
- Schierz, P.G., Schilke, O. and Wirtz, B.W. (2010), "Understanding consumer acceptance of mobile payment services: an empirical analysis", *Electronic Commerce Research and Applications*, Vol. 9 No. 3, pp. 209-16.
- Sankaran, R., & Chakraborty, S. (2021). Factors impacting mobile banking in India: Empirical approach extending UTAUT2 with perceived value and trust. *IIM Kozhikode Society and Management Review*. Retrieved from <https://doi.org/10.1177/2320206820975219>
- Shaikh, A. A., & Karjaluoto, H. (2015). Mobile banking adoption: A literature review. *Telematics and Informatics*, 32(1), 129–142. doi:[10.1016/j.tele.2014.05.003](https://doi.org/10.1016/j.tele.2014.05.003)
- Shankar, A., Jebarajakirthy, C., & Ashaduzzaman, M. (2020). How do electronic word of mouth practices contribute to mobile banking adoption?. *Journal of Retailing and Consumer Services*, 52, 101920. doi:[10.1016/j.jretconser.2019.101920](https://doi.org/10.1016/j.jretconser.2019.101920)
- Sheehan, B., Jin, H. S., & Gottlieb, U. (2020). Customer service chatbots: Anthropomorphism and adoption. *Journal of Business Research*, 115, 14-24.
- Shin, D. H. (2010). Modeling the interaction of users and mobile payment system: Conceptual framework. *International*.
- Susanto, P., Hoque, M. E., Hashim, N. M. H. N., Shah, N. U., & Alam, M. N. A. (2022). Moderating effects of perceived risk on the determinants-outcome nexus of e-money behaviour. *International Journal of Emerging Markets*. Retrieved from <https://doi.org/10.1108/IJOEM-05-2019-0382>
- Srivastava, S., & Singh, N. (2020). From resistance to acceptance: Role of moderating and mediating variables in intention to use mobile payment services. *International Journal of Technology Marketing*, 14(4), 377–402. doi:[10.1504/IJTMKT.2020.114035](https://doi.org/10.1504/IJTMKT.2020.114035)
- Yang, A. S. (2009). Exploring adoption difficulties in mobile banking services. *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, 26(2), 136–149. doi:[10.1002/cjas.102](https://doi.org/10.1002/cjas.102)
- 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*, 10(3), 279–295. doi:[10.1108/IJQSS-07-2017-0067](https://doi.org/10.1108/IJQSS-07-2017-0067)
- Zhou, T. (2012). Understanding users' initial trust in mobile banking: An elaboration likelihood perspective. *Computers in Human Behavior*, 28(4), 1518–1525. doi:[10.1016/j.chb.2012.03.021](https://doi.org/10.1016/j.chb.2012.03.021)
- Zhu, Q., Lyu, Z., Long, Y., & Wachenheim, C. J. (2021). Adoption of mobile banking in rural China: Impact of information dissemination channel. *Socio-Economic Planning Sciences*. doi:[10.1016/j.dsm.2021.02.004](https://doi.org/10.1016/j.dsm.2021.02.004)