

Determinants of the adoption of Digital Banking: A Study of Cyprus

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Abstract: This study explores the factors related to customer behavior influencing digital banking adoption in the context of Cyprus. Specifically, it examines key variables through the Technology Acceptance Model (TAM) framework, focusing on four critical components: perceived usefulness, perceived ease of use, security and trust, and awareness. By adopting a quantitative research approach, the study employs a structured survey methodology, with data collected from 234 respondents. The responses were analyzed using multiple regression techniques to investigate the relationships between the independent variables and the adoption of digital banking services.

The findings indicate that all four variables—perceived usefulness, perceived ease of use, security and trust, and awareness—have a positive and statistically significant influence on the adoption of digital banking. These results underline the importance of understanding customer behavior and preferences in shaping digital banking solutions. For instance, perceived usefulness and ease of use highlight the need for intuitive and user-friendly platforms, while security and trust emphasize the critical role of robust cybersecurity measures. Similarly, awareness underscores the importance of educational campaigns to familiarize customers with digital banking technologies.

This study offers valuable insights for financial organizations, helping them devise strategic initiatives tailored to customer needs and preferences. By leveraging these findings, organizations can enhance customer satisfaction and drive the widespread acceptance of digital banking services in Cyprus. Moreover, the study's implications extend to policymakers and practitioners, offering guidance to promote digital transformation in the banking sector and create a supportive ecosystem for financial technology innovation.

The results also emphasize the broader relevance of these factors, particularly for smaller European economies that share similar challenges and opportunities in digital banking adoption. These findings serve as a foundation for further research and practical strategies aimed at accelerating digital transformation in the financial sector.

Keywords: Digital banking adoption, Customer behavior, Technology Acceptance Model (TAM), Cyprus banking sector, Quantitative research.

1. INTRODUCTION

The information technology revolution has become a source of revolutionising the banking sector catalysing the way financial services are being delivered globally (Alkhowaiter, 2020; Tuli, 2024). Automated teller machines (ATMs), internet banking, mobile banking, digital kiosks, and Unified Payments Interface (UPI) innovations have greatly improved the capability of banks to satisfy customer needs in a better and more effective manner (Kaur et al., 2021; Alnemer, 2022). With the internet creating an online platform for different activities including marketing and promoting products, the banking industry has been forced to re-configure its IT strategies with the aim of effectively utilising these online platforms (Alalwan et al., 2016; Tiong, 2020; Choi and Loh, 2024). Specifically, the delivery of financial services has experienced significant transformation, including an explosive growth of adoption for digital and mobile banking solutions (Amin, 2016; Bankuoru Egala et al., 2021; Siska, 2022). Digital banking innovation and user adoption in emerging markets are leading global gains (Ahmad, 2018; Chakraborty and Mitra, 2018; Marakarkandy et al., 2017).

There has been widespread attention among researchers and as a result, a number of studies have been conducted to understand digital banking's rapid growth (Giovanis et al., 2012; Fonchamnyo, 2013; Ahmad, 2018; Mufarih et al., 2020). Previous research (Dash et al., 2011; Kesharwani et al., 2012; Alkailani et al., 2012; AlKailani, 2016; Abd Ghani et al., 2017; Ghani et al., 2022; Nihayah and Purnama, 2024) primarily analysed the introduction and rapid diffusion of digital banking services in a broad geographical extent. However, more recent studies have moved from identifying determinant factors of digital banking adoption to investigating factors affecting digital banking adoption (Yaghoubi and Bahmani, 2010; Sundarraj and Manochehri, 2013; Samar et al., 2017; Ly and Ly, 2022). However, digital banking has great benefits such as greater service delivery, low transaction costs, and higher profitability to banks and their customers (Abd Ghani et al., 2017; Ghani et al., 2022). It allows customers to perform basic banking tasks such as fund transfers and stock trading from any location (Giovanis et al., 2012; Fonchamnyo, 2013; Ahmad, 2018), as well as underpins e-commerce by making online transactions feasible (Sundarraj and Manochehri, 2013; Samar et al., 2017).

However, there is considerable country-level heterogeneity in the adoption of digital banking because of regional and cultural differences (Alkailani et al., 2012; Nihayah and Purnama, 2024). Also, barriers like lack of internet access, no personal interaction and security issues have been hindering the widespread acceptance of e-banking (Nath et al., 2013; Munoz-Leiva et al., 2017; Ghani et al., 2022). One of the greatest challenges consists of security risks generated by digital transactions that can lead to great financial losses (Lee, M.C., 2009; Medyawati et al., 2011; Vinita, 2020). According to another perspective (Amin, 2009; Aboelmaged and Gebba, 2013; Kumar Sharma and Madhumohan Govindaluri, 2014) internet banking success depends greatly on governmental support and customer acceptance. Subsequently, (Sakala and Phiri, 2019; Baca et al., 2023) discovered that customers use internet banking only when they perceive it useful for their personal or professional lifestyle.

Digital or online banking, in this research, means activities related to financial services conducted by using online platforms such as bill payments or investments etc. (Cheng et al., 2006; Hassan et al., 2018; Chang et al., 2020; Aldammagh et al., 2021). There have been limited studies in the past that focused on the role of factors that influence digital banking in the context of Cyprus. These factors may include consumers' trust and other demographic variables. The role that trust and demographic variables play in digital banking adoption has been given limited research in Cyprus. Moreover, previous studies have mostly considered determinants of digital banking adoption as correlated, rather than analysing causal relationships (Dash et al., 2011; Kesharwani et al., 2012; Alkailani et al., 2012). The purpose of this study is to fill these gaps by exploring the influences of Internet banking adoption in Cyprus using the Technology Acceptance Model (TAM) model which includes perceived ease of use (PEOU), perceived usefulness (PU), trust and awareness. This study could provide insights into Cyprus's banking sector to better understand customer behaviour in receiving digital service, and help devise effective strategies for delivering digital service efficiently. Furthermore, the findings can provide insights for other broader research on digital banking in smaller European economies and have theoretical and practical implications for future research studies.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Academic research has focused on the factors that affect customers' willingness to adopt digital banking. In line with this, considerable attention has been paid to the adoption of digital banking in the recent past. All these factors have been extensively looked into in both developed and developing countries. Researchers have primarily used theoretical frameworks such as the Technology Acceptance Model (TAM) that help in understanding customer behaviour. In a plethora of work, researchers (Sundarraj and Manochehri, 2013; Samar et al., 2017; Ly and Ly, 2022) have been able to employ an extended theoretical perspective of TAM. In this study, we extend the TAM framework to examine the adoption of digital banking in Cyprus by identifying four critical factors, inspired by the work of Ananda et al. (2020). The five dimensions include perceived usefulness, perceived ease of use, trust and awareness. The primary focus of the study remains an exploration of customer behaviour toward technological adoption instead of technical factors like web features and transaction costs as suggested by the work of Ananda et al. (2020)

Perceived Usefulness

This study finds that perceived usefulness, which is a core component of TAM (Davis et al. 1989) has been a consistently significant determinant of technology adoption. This factor refers to how much customers think using a particular technology will improve their efficiency and effectiveness. Studies by Nihayah and Purnama (2024) and Ly and Ly (2022)

showed that perceived usefulness is a key determinant in shaping customers' intention to utilise a digital banking platform. Further, Alsamydai (2014) also found that customer adoption is related to the perceived value of online banking services, that is convenience and time-saving features. According to these findings, perceived usefulness, which has also been a recurrent theme in the adoption of mobile banking (Munoz-Leiva et al., 2017), is a factor determining the acceptance of e-banking. The empirical evidence with these findings leads to the development of the following hypothesis:

Hypothesis 1: Perceived usefulness has a positive influence on digital banking adoption in the context of Cyprus

Perceived Ease of Use

Perceived ease of use, is another of the components, presented by TAM as an influencing factor in the adoption of technology, i.e. in digital banking in this study. The anxiety of customers regarding digital banking services is reduced and they tend to adapt if customers find things easily steerable in a digital banking platform. According to Davis et al. (1989) perceived ease of use is yet another pillar of TAM. Simplified processes and the user-friendly interface of online banking are observed (Lee, 2009; Medyawati et al., 2011; Vinitha, 2020) as factors promoting the adoption of online banking. In addition, studies by Sakala and Phiri (2019) and by Baca et al. (2023) stressed how having a service perceived as easy to use is directly and substantially correlated to the customers' intention to use digital banking services. Furthermore, Hassan et al. (2018) pointed to intuitive designs and reduced complexity as reasons that spur adoption among customers. Based on these findings, the following hypothesis is developed:

Hypothesis 2: Perceived ease of use has a positive effect on digital banking adoption in the context of Cyprus.

Trust

Online transactions are risky as the customers treat digital banking as a spectrum of risks; therefore, security & trust are essential. However, research by Aldammagh et al. (2021) on financial services revealed that trust is positively affected by website security and their reputation in the banking sector. Security, as a barrier to mobile banking adoption, was reported by Chang et al. (2020) and trust by Naeem et al. (2023) as a significant and critical determinant for digital banking usage. In addition, Ananda et al. (2020) proposed that banks spend on strong security measures to appease customers' apprehensions and build confidence in their platforms. These insights allow to develop another hypothesis in this study as follows:

Hypothesis 3: Security and Trust have a positive influence on digital banking adoption in the context of Cyprus.

Awareness

The adoption of digital banking services is driven heavily by customer awareness. Customers underutilize available technologies because of a lack of awareness (Kaur et al., 2021; Alnemer, 2022). The issue of inadequate awareness deprives e-banking delivery channels of the possibility of highly efficient performance (Alkhowaiter, 2020; Tiong, 2020; Tuli, 2024). Alkhowaiter (2020) and Tuli (2024) in their studies recommend that banks distribute educational resources like tutorials and demonstrations to make customers familiar with digital banking platforms. Further, Choi et al. (2024) found a lack of awareness as a major hindrance to mobile banking adoption. Based on these insights from empirical evidence, this research focuses on another study hypothesis as follows:

Hypothesis 4: Customer awareness has a positive influence on the adoption of digital banking in the context of Cyprus.

Theoretical Framework

This thesis proposes, based on the TAM, a theoretical framework to predict factors related to customer behaviour influencing the adoption of digital banking in Cyprus. Perceived usefulness, perceived ease of use, security and trust, and awareness are identified as integrative four factors that provide a comprehensive understanding of customer behaviour in the digital banking context. The study hence seeks to enrich the existing literature by studying the different factors driving the adoption of digital banking, while giving practical recommendations for increasing digital banking adoption in Cyprus. Figure 1 presents the theoretical framework derived from the review of previous studies and empirical evidence for identifying critical factors involved in affecting digital banking adoption.

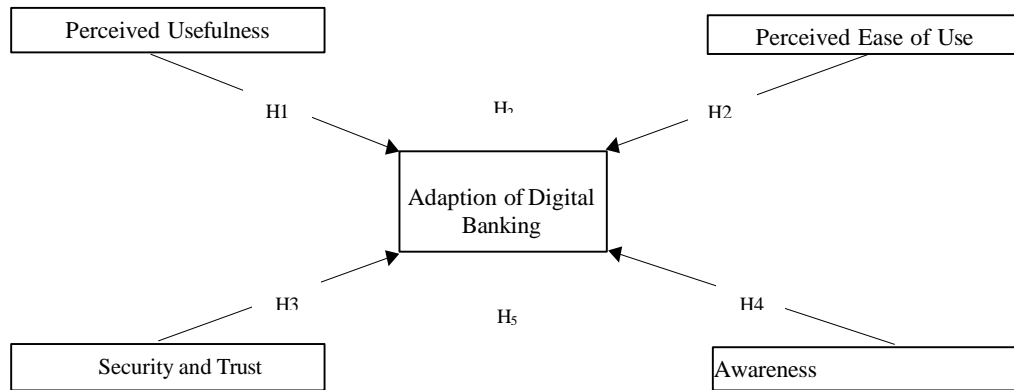


Figure 1: Theoretical Framework

3. RESEARCH METHODOLOGY

Sample and Data Collection

The sample in this study is obtained from the population of retail customers using the services of local banks across Cyprus. Customers using digital banking services of these local banks are considered in the study sample. To identify the customers for the sample, the snowball sampling technique is used (Parker et al., 2019; Hossan et al., 2023). The data is collected from the sample of customers by administering a structured questionnaire via emails to 850 respondents. The voluntary participation of respondents was ensured by obtaining their consent. Similarly, any incentives for participation in the study were completely avoided as well. Out of 850 respondents who received questionnaires via email, only 430 responded to the emails. Eventually, the study considered 200 responses, where all the questions were answered in the survey questionnaire. The demographic profile of the sample is presented in Table 1 considering the descriptive statistics.

Table 1: Demographic Profile

Demographic variables	Categories	No. of respondents (<i>N</i> = 200)	Percentage
Gender	Male	107	53.5
	Female	93	46.5
Age (in years)	18–25	25	12.5
	26–30	48	24
	31–40	32	16
	41–50	50	25
	51–60	45	22.5
Education	Higher Secondary	26	13
	Diploma	39	19.5
	Undergraduate	31	15.5
	Postgraduate	33	16.5
	PhD	39	19.5
Profession	Other	32	16
	Govt. Employee	33	16.5
	Private Employee	36	18
	Business	34	17
	Self-employee	34	17
	Housewife	26	13
Yearly income (in OMR)	Student	37	18.5
	Less than 5000	34	17
	5000–10,000	41	20.5
	10,000–15,000	42	21
	15,000–20,000	32	16
	Above 20,000	51	25.5

Bank-wise customers	Bank Muscat	28	14
	National Bank of Oman	27	13.5
	Bank Dhofar	24	12
	Oman Arab Bank	30	15
	HSBC Bank	35	17.5
	Bank Sohar	30	15
	Bank Nizwa	26	13
Length of digital banking usage	Less than one year	35	17.5
	1–5 years	40	20
	5–10 years	49	24.5
	10–15 years	38	19
	Above 15 years	38	19
Level of digital knowledge	Basic level	44	22
	Intermediate level	49	24.5
	Advance level	57	28.5
	No knowledge	50	25
Preference for bank transactions	Personal visit to the bank	103	51.5
	Use of digital banking services	97	48.5
Usage of digital banking services	Internet banking	21	10.5
	TeleBanking	155	77.5
	Mobile banking	24	12

Table 2: Items for all four constructs

Construct	Items	Sources
Perceived Usefulness	Speed of transaction time	Siska, (2022), Mufarih et al. (2020), Ghani et al., (2022), Ananda et al. (2020)
	Job efficiency and effectiveness	
	Convenience in managing financial transactions	
	Greater control over financial transactions	
	Opportunity to increase the e-skill level	
Perceived Ease of Use	User-friendliness that branch visit	Samar et al., (2017), Nihayah and Purnama, (2024), Aboelmaged and Gebba, (2013), Ananda et al. (2020)
	Clarity and understand-ability of system interaction	
	The flexibility of interaction	
	Easy way to do things	
Security and Trust	Safety and free from monetary losses	Alkailani et al., (2012), Ananda et al. (2020) Nihayah and Purnama (2024)
	No harm to customer privacy	
	Trustworthiness and dependability	
Awareness	Availability of latest and accurate information	Vinitha, (2020), Baca et al. (2023), Aldammagh et al. (2021), Ananda et al. (2020)
	Awareness of the possible risk	
	Comfortability in performing transactions	
	Confidence in using digital banking devices	

Design and Measurement

The study adopts a quantitative research approach with a cross-sectional research design. The measurement process consists of developing a survey instrument including two parts. The first part of the instrument includes demographic questions whereas the second part comprises 20 questions developed on a seven-point Likert scale categorised under four components. The questions in the second part ranged from “1”, i.e. strongly disagree to “7” i.e. strongly agree on a seven-point Likert scale. The questions were framed based on the literature review as well as adapted from the work of Ananda et al. (2020). These questions are aligned with the research objective of the study and are presented in Table 2. To evaluate the effectiveness of the survey instrument, a pilot study was conducted using a convenience sampling technique. A sample of 22 respondents was used to evaluate and refine the survey instrument. Minor changes including but not limited to wording, format and content were made in the instrument based on the feedback received from the pilot study.

Data Tools and Analysis Techniques

To address the validation of the instrument and hypothesis testing, the study used a quantitative methodology. Firstly, descriptive statistics were used for each factor including mean, dispersion and number of respondents. To address the reliability of the instrument, a reliability test is used for each factor based on question items. Additionally, multiple linear regression was used to analyse the relationship between the four independent variables and the adoption of digital banking in the context of Cyprus. Equation (1) shows the relationship between digital banking adoption and the four components, i.e. perceived usefulness, perceived ease of use, security and trust and awareness with fixed effects.

$$EBA = \beta_0 + \beta_1PU + \beta_2PEU + \beta_3ST + \beta_4AW + \varepsilon \dots \dots \dots (1)$$

The estimation of Equation (1) leads to examining the effect of each independent variable on digital banking adoption.

Table 3: Variable Description and Reliability

Variables	Acronym	Description	No. of Items	Cronbach’s Alpha
Dependent variable	EBA	E-banking adoption		
Independent variables	PU	Perceived usefulness	5	0.923
	PEU	Perceived ease of use	4	0.913
	ST	Security and Trust	3	0.907
	AW	Awareness	4	0.903
Overall Reliability			16	0.776

Reliability and Validity

To measure the consistency across items of each factor, Cronbach’s alpha is employed in this study, which indicates the reliability of the questionnaire. The use of Cronbach’s alpha suggests the reliability of the questionnaire as well as the internal consistency of the instrument. According to Mohamad et al. (2015) and Heale and Twycross (2015), a reliability value of above 0.75 indicates a good construct reliability and falls into an acceptable range. To address the issue of reliability, Cronbach’s alpha is computed for all constructs included in the study. Table 3 shows the results for reliability for each construct. According to the results, the reliability value for perceived usefulness is (0.923), for perceived ease of use is (0.913), for security and trust is (0.907) and for awareness is (0.903). As it is observed that the reliability values for all constructs are above 0.75, i.e. 75%; therefore, it is considered that the instrument is reliable. The reliability value for the overall instrument is (0.776), which indicates a reliable and consistent survey instrument.

4. DATA ANALYSIS AND RESULTS

Descriptive Statistics

The descriptive statistics in the data analysis included the mean, standard deviation, range (minimum and maximum), kurtosis and skewness (sample distribution). The mean values for all the independent variables are observed in Table 4. In addition, it is also noted that these mean values, i.e. perceived usefulness (3.87), perceived ease of use (3.82), security and trust (3.95) and awareness (4.0), are above 3 points, indicating that respondents agreed that these factors influence the digital banking adoption.

Furthermore, the correlation between the independent variables and the dependent variable of digital banking adoption is presented in Table 5. Whereas, Table 6 presents the correlation matrix between the independent variables. The results from Table 5 show that there is the highest correlation between perceived usefulness while proceeded by awareness. The significance of the correlation coefficient shows that the model is a good fit. The association between the independent variables of the study is presented in Table 6. The results in Table 6 show the direction and magnitude of association between the independent variables. However, there is a negative correlation between perceived usefulness and ease of use. Although the values are smaller it eliminates the chance of multicollinearity among the variables.

Table 4: Descriptive Statistics for Study Variables

Variables	Min.	Max.	Mean	Std. deviation	Skewness	Std. error	Kurtosis	Std. error
Perceived usefulness	1	7	3.874	0.82067	0.298	0.172	0.031	0.342
Perceived ease of use	1	7	3.8212	0.82873	0.386	0.172	0.847	0.342
Security, privacy and trust	1	7	3.95	0.96433	-0.016	0.172	-0.102	0.342
Awareness	1	7	4.0062	0.82076	0.214	0.172	-0.199	0.342

Table 5: Correlation Coefficient

Variables	R values	P value
PU	0.49	0.00
PEU	0.37	0.00
ST	0.38	0.00
AW	0.44	0.00

Table 6: Correlation Matrix

Variables	PU	PEU	ST	AW
PU	1			
PEU	-0.008	1		
ST	-0.003	0.005	1	
AW	.141*	.142*	-0.013	1

* Correlation is significant at the 0.05 level (2-tailed).

Multiple Regression Analysis

To assess the relationship between the dependent variable and predictors, least-square multiple regression analysis is used in the study. This relationship sheds light on the contribution of each factor included in the model to the adoption of digital banking. Table 7 provides the regression model summary. This model summary shows perceived usefulness, ease of use, security and trust and awareness as a function of digital banking adoption. The R^2 is the coefficient of determination and suggests the variation in the dependent variable of digital banking adoption explained by the independent variables. According to Table 7, the R^2 value is 0.63, implying that a significant amount of variation, i.e. around 63% in the dependent variable is explained by the predictors in the model. In addition, Table 8 provides the ANOVA table of the model. The F-test in the ANOVA testing indicates a test statistic of 82.897 with a p-value of 0.00. With a p-value below a 5% level of significance, it indicates that the model is a good fit and predictors are able to significantly predict the dependent variable, i.e. the adoption of digital banking.

Table 7: Model Summary

R-value	R^2 Value	Adjusted R^2	Std.Error of the Estimate
0.794	0.63	0.622	0.292

Table 8: ANOVA Table

Model	Sum of Squares	df	Mean Square	F value	P value
Regression	28.308	4	7.077	82.897	0.00
Residual	16.647	195	0.085		
Total	44.955	199			

Table 8 shows the results for the regression model including the regression coefficients. According to the results in Table 8, perceived usefulness is the most significant variable that positively influences the adoption of digital banking ($\beta_1=0.253$, $P < 0$), followed by awareness ($\beta_4=0.188$, $P < 0$). In addition, perceived ease of use ($\beta_2=0.179$, $P < 0$) and security and trust ($\beta_3=0.188$, $P < 0$) are also statistically significant and have a positive influence on digital banking adoption. Therefore, H_1 , H_2 , H_3 and H_4 are all statistically significant and hence, accepted. Thus, the regression model can be shown as the function of these four variables as in Equation 2.

$$EBA = -1.126 + 0.253PU + 0.179PEU + 0.186ST + 0.188AW \dots \dots \dots (2)$$

Thus, the results of the study indicated that perceived usefulness, perceived ease of use, security and trust and awareness have a positively significant effect on the adoption of digital banking in the context of Cyprus.

Table 9: Regression Coefficients

Model	Unstandardized		Standardized	t	P value	Decision on hypothesis
	Coefficients		Coefficients			
	B	Std. Error	Beta			
(Constant)	-1.126	0.175		-6.445	0.00	H_1 : accept (P value < 0.05)
PU	0.253	0.025	0.449	10.188	0.00	H_1 : accept (P value < 0.05)
PEU	0.179	0.025	0.32	7.254	0.00	H_1 : accept (P value < 0.05)
ST	0.186	0.021	0.384	8.8	0.00	H_1 : accept (P value < 0.05)
AW	0.188	0.025	0.334	7.517	0.00	

5. CONCLUSION, MANAGERIAL IMPLICATIONS AND LIMITATIONS

This study aims to explore the factors related to customer behaviour that influence digital banking adoption in the context of Cyprus by extending the TAM model. The model is a good fit based on the instrument's reliability. The Cronbach's alpha results indicate internal consistency and a reliable instrument.

Managerial Implications

The results of this study highlight the key constructs of perceived usefulness, perceived ease of use, security and trust, and awareness of the adoption of digital banking in Cyprus. Based on these insights, actionable recommendations to banks and financial institutions are suggested for improving their strategies and service delivery models.

As suggested by the findings of the study, it is more likely that customers choose to adopt digital banking when it is regarded as a beneficial tool to manage their financial activities. It implies that banks need to focus on the practical advantages of digital banking while demonstrating their benefits through effective use. For instance, the use of digital banking for faster transactions, easier access to services, and more financial management tools should be demonstrated in an effective manner. Existing digital platforms may be able to add value for example, by offering new features such as real-time transaction tracking, budget planning tools, or personalised financial 'insights' to make their platforms more useful to their users. Banks can also market these benefits effectively in their targeted marketing campaign to show how digital banking makes it easier for people to handle financial processes.

Based on the findings of the study, it is identified that simplification of user experience is also essential for ensuring the adoption of digital banking. Intuitive designs, a minimal number of navigation steps, and responsive interfaces should be of the highest interest to digital banking platforms' creative interfaces. Therefore, it is clear that banks must invest in regular usability testing, to identify and address potential customer pain points. Customers can also be trained to get comfortable with the technology using educational resources, such as step-by-step guides and video tutorials. It is particularly important to provide such an approach for older demographics or for limited digital literacy users to make the platform accessible for all users.

As the findings of the study suggested, digital banking adoption rests on security and trust as well. The customer must have the assurance that their financial data and transactions are secure. In order to address this, banks ought to utilise cybersecurity measures like two-factor verification, end-to-end information encryption, and scam observing frameworks. Communicating regularly about security improvements, and letting customers be assured of data protection, enable banks to build trust. Transparency about the handling of customer data and protections will also assuage those concerns and allow digital banking to continue within a secure environment.

Based on the findings of the study, it is clear that many of the customers in Cyprus may still not have realised the variety of digital banking services at their disposal. Digital banking is a phenomenon that banks need to educate their customers on the benefits and features. The awareness campaigns should encompass a number of communication channels including social media, email marketing and in-branch demonstrations. Moreover, community organisations or educational institutions can collaborate to spread awareness about digital banking services. Empowerment of customers with knowledge is what banks can use to tackle misinformation and drive greater acceptance.

These managerial implications of the study findings allow to development of a roadmap for Cyprus banks to engage with their customers based on a clear understanding of customer behaviour toward technology adoption. Therefore, these implications are critical for banks in Cyprus to consider for a more smooth transition to digital banking and its adoption by customers.

Limitations

The study used a cross-sectional design, obtaining data at a single point in time. Although this approach gives valuable insight, it does not reflect how customer attitudes and behaviours can change in the future. The variables under investigation were limited to four factors (perceived usefulness, perceived ease of use, security and trust, and awareness). Though these were identified as important factors, other possible determinants (e.g., socioeconomic status, digital literacy levels, and policy factors such as government policies) were left unexplored. Furthermore, the sample size may restrict the capability of the findings to be generalised. The respondents were a range of retail banking customers in Cyprus, however, a larger and more diverse sample is needed including different geographic regions and demographic groupings in order to achieve a more robust result. Moreover, the linear regression analysis, which mainly studies the direct relationships between variables, is employed in the study. However, this method does not obtain the effects of mediating or moderating with other variables. With all these limitations nevertheless, the study gives us useful insights on the main factors behind digital banking adoption in Cyprus.

Future Research

Further research to build on the results of this study can be achieved in several ways to obtain a more in-depth perspective on the relationship between the study constructs and to expand knowledge about digital banking adoption.

Longitudinal research can empower researchers to look at how customer behaviour and preferences change over time. By adopting this approach future research can gain insights into diverse factors such as improvements in technology, change in customer base or in economic conditions in the view of digital banking adoption. Although considered for four variables, further studies can be conducted to identify other factors such as the impact of cultural attitudes, digital literacy, and governmental initiatives etc., on digital banking adoption. Therefore, future research can focus on exploring multi-dimensional factors to examine digital banking adoption.

In addition to expanding the sample, future research can also focus on diverse sample groups, i.e. various customer segments, for instance, SMEs or corporate clients. It will facilitate the understanding of how the adoption of digital banking changes across groups. Furthermore, the adoption patterns could be analysed in rural settings compared to urban settings, within Cyprus to reveal potential geographic disparities and to derive specific policies. Quantitative methods can be used in combination with qualitative methods (interviews, focus groups) to enhance understanding of customers' behaviour toward adoption along with their concerns. It can also allow future researchers to uncover some of the nuanced insights that may not come through in survey-based research. Additionally, future studies can be conducted to develop a comparison between Cyprus and other countries sharing similar economic and technological contexts. Such studies can enable to identification of best practices and cross-national learning about digital banking adoption.

Furthermore, the use of advanced statistical methods such as SEM or path analysis can enable to exploration of more complex relationships among the variables. For instance, future research can focus on how awareness works between perceived ease of use and adoption to provide real implications for banks. Based on the findings of the current analysis, future studies may examine the impact of these emerging technologies that have been shown to shape the way customers trust and adopt digital banking, like artificial intelligence (AI), blockchain, and biometric authentication. A knowledge of these trends will be critical to banks seeking to remain competitive in an increasingly digital world. Investigation of additional behavioural factors, as outlined by customer resistance to change or social influence, could further improve the understanding of digital banking adoption. These findings can help inform designs for strategies to overcome adoption barriers.

All these areas can be enhanced in future research and comprehensive insight about digital banking adoption in Cyprus can be achieved with the help of such research, thus offering valuable recommendations for both academic and industry practitioners.

REFERENCES

- [1] Abd Ghani, M., Rahi, S., Yasin, N.M. and Alnaser, F.M., 2017. Adoption of internet banking: extending the role of technology acceptance model (TAM) with e-customer service and customer satisfaction. *World Applied Sciences Journal*, 35(9), pp.1918-1929. DOI: 10.5829/idosi.wasj.2017.1918.1929
- [2] Aboelmaged, M. and Gebba, T.R., 2013. Mobile banking adoption: an examination of technology acceptance model and theory of planned behavior. *International journal of business research and development*, 2(1). DOI:10.24102/IJBRD.V2I1.263

- [3] Ahmad, M., 2018. Review of the technology acceptance model (TAM) in internet banking and mobile banking. *International Journal of Information Communication Technology and Digital Convergence*, 3(1), pp.23-41. Retrieved from: https://www.researchgate.net/profile/Maqbool-Ahmad-6/publication/329034437_Review_of_The_Technology_Acceptance_Model_TAM_in_Internet_banking_and_Mobile_banking/links/5bf27b06a6fdcc3a8de0f8ad/Review-of-The-Technology-Acceptance-Model-TAM-in-Internet-banking-and-Mobile-banking.pdf
- [4] Alalwan, A.A., Dwivedi, Y.K., Rana, N.P. and Williams, M.D., 2016. Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), pp.118-139. <https://doi.org/10.1108/JEIM-04-2015-0035>
- [5] Aldammagh, Z., Abdeljawad, R. and Obaid, T., 2021. Predicting mobile banking adoption: An integration of TAM and TPB with trust and perceived risk. *Financial Internet Quarterly*, 17(3), pp.35-46. 10.2478/fiqf-2021-0017
- [6] AlKailani, M., 2016. Factors affecting the adoption of internet banking in Jordan: An extended TAM model. *Journal of Marketing Development and Competitiveness*, 10(1). Retrieved from: <https://articlearchives.co/index.php/JMDC/article/view/4334/4296>
- [7] Alkailani, M., Azzam, I.A. and Athamneh, A.B., 2012. Replicating Hofstede in Jordan: ungeneralized, reevaluating the Jordanian culture. *International Business Research*, 5(4), pp.71-80. Retrieved from: https://www.researchgate.net/profile/Abdel-Baset-Athamneh/publication/267722435_Replicating_Hofstede_in_Jordan_Ungeneralized_Reevaluating_the_Jordanian_Culture/links/606590bf299bf1252e1d8084/Replicating-Hofstede-in-Jordan-Ungeneralized-Reevaluating-the-Jordanian-Culture.pdf
- [8] Alkhawaiter, W.A., 2020. Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*, 53, p.102102. <https://doi.org/10.1016/j.ijinfomgt.2020.102102>
- [9] Alnemer, H.A., 2022. Determinants of digital banking adoption in the Kingdom of Saudi Arabia: A technology acceptance model approach. *Digital Business*, 2(2), p.100037.
- [10] Alsamydai, M.J., 2014. Adaptation of the technology acceptance model (TAM) to the use of mobile banking services. *International review of management and business research*, 3(4), p.2039. Retrieved from: <https://www.zuj.edu.jo/wp-content/staff-research/economic/dr.mohmood-Jasim/10.pdf>
- [11] Amin, H., 2009. An analysis of online banking usage intentions: an extension of the technology acceptance model. *International Journal of Business and Society*, 10(1), p.27. Retrieved from: <https://www.proquest.com/openview/c5ce5351467d5ef26781e82f2cb5404d/1?pq-origsite=gscholar&cbl=28871>
- [12] Amin, M., 2016. Internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty. *International journal of bank marketing*, 34(3), pp.280-306. <https://doi.org/10.1108/IJBM-10-2014-0139>
- [13] Ananda, S., Devesh, S. and Al Lawati, A.M., 2020. What factors drive the adoption of digital banking? An empirical study from the perspective of Omani retail banking. *Journal of Financial Services Marketing*, 25(1), pp.14-24. <https://doi.org/10.1057/s41264-020-00072-y>
- [14] Baca, G., Hajdini, A. and Elezaj, S., 2023. Adoption of electronic banking: an extension of technology acceptance model (TAM). *Ekonomski pregled*, 74(6), pp.818-839. <https://doi.org/10.32910/ep.74.6.2>
- [15] Bankuoru Egala, S., Boateng, D. and Aboagye Mensah, S., 2021. To leave or retain? An interplay between quality digital banking services and customer satisfaction. *International journal of bank marketing*, 39(7), pp.1420-1445. <https://doi.org/10.1108/ijbm-02-2021-0072>
- [16] Chakraborty, S. and Mitra, D., 2018. A study on consumers adoption intention for digital wallets in India. *International Journal on Customer Relations*, 6(1), pp.38-57. Retrieved from: https://d1wqtxts1xzle7.cloudfront.net/60685646/620190923-34565-130gwfq-libre.pdf?1569308649=&response-content-disposition=inline%3B+filename%3DA_STUDY_ON_CONSUMERS_ADOPTION_INTENTION.pdf&Expires=1736309117&Signature=Zwt50xppU5Hhjqv2flj2XL0T8LC7TicqWBPcB9Y914g46fWppdOd2ta1VQM4VQw51k398jR3c2Lhpw2IHbD~vyZ9h7Ezw6Mp2CXCTiLRiNkG26~5a1kogJPxxz1uLCyba0j~O6E-sN3ar5hxe4lsdNcWvx-nuakbT~eykjOO~x6P6sb4257ZP9Lf751QZfK2h4TfKBiEq1ciBkS05a2cHjyxYTk9BwRZfA0HssMy4-UCIHJxcL~T2h2DUx7rff2rKoJhja5JNXd1s

VFOAkLSg6ZomZCdHtG8tbXWmcJEtNoYrfzg49U42E8CRiw-szpHrk~6b0yrT7PSCY1MJF-iKw__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

- [17] Chang, Y.C., Enkhjargal, U., Huang, C.I., Lin, W.L. and Ho, C.M., 2020. Factors affecting the Internet banking adoption. *Jurnal Ekonomi Malaysia*, 54(3), pp.117-131. <http://dx.doi.org/10.17576/JEM-2020-5403-9>
- [18] Cheng, T.E., Lam, D.Y. and Yeung, A.C., 2006. Adoption of internet banking: an empirical study in Hong Kong. *Decision support systems*, 42(3), pp.1558-1572. <https://doi.org/10.1016/j.dss.2006.01.002>
- [19] Choi, H.S. and Loh, R.K., 2024. Physical frictions and digital banking adoption. *Management Science*, 70(10), pp.6597-6621. <https://doi.org/10.1287/mnsc.2023.4972>
- [20] Dash, M., Mohanty, A.K., Pattnaik, S., Mohapatra, R.C. and Sahoo, D.S., 2011. Using the TAM model to explain how attitudes determine adoption of internet banking. *European Journal of Economics, Finance and Administrative Sciences*, 36(1), pp.50-59. Retrieved from: https://www.researchgate.net/profile/Manoranjan-Dash-3/publication/292452161_Using_the_TAM_model_to_explain_how_attitudes_determine_adoption_of_internet_banking/links/5774b30508ae4645d60a1578/Using-the-TAM-model-to-explain-how-attitudes-determine-adoption-of-internet-banking.pdf
- [21] Davis, F.D., 1989. Technology acceptance model: TAM. *Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption*, 205, p.219. Retrieved from: <https://quod.lib.umich.edu/b/busadwp/images/b/1/4/b1409190.0001.001.pdf>
- [22] Fonchamnyo, D.C., 2013. Customers' perception of e-banking adoption in Cameroon: an empirical assessment of an extended TAM. *International journal of economics and finance*, 5(1), pp.166-176. <http://dx.doi.org/10.5539/ijef.v5n1p166>
- [23] Ghani, E.K., Ali, M.M., Musa, M.N.R. and Omonov, A.A., 2022. The effect of perceived usefulness, reliability, and COVID-19 pandemic on digital banking effectiveness: Analysis using technology acceptance model. *Sustainability*, 14(18), p.11248. <https://doi.org/10.3390/su141811248>
- [24] Giovanis, A.N., Binioris, S. and Polychronopoulos, G., 2012. An extension of TAM model with IDT and security/privacy risk in the adoption of internet banking services in Greece. *EuroMed Journal of Business*, 7(1), pp.24-53. <https://doi.org/10.1108/14502191211225365>
- [25] Hassan, M.U., Iqbal, A. and Iqbal, Z., 2018. Factors affecting the adoption of internet banking in Pakistan: An integration of technology acceptance model and theory of planned behaviour. *International Journal of Business Information Systems*, 28(3), pp.342-370. <https://doi.org/10.1504/IJBIS.2018.092530>
- [26] Heale, R. and Twycross, A., 2015. Validity and reliability in quantitative studies. *Evidence-based nursing*, 18(3), pp.66-67. <https://doi.org/10.1136/eb-2015-102129>
- [27] Hossan, D., Dato'Mansor, Z. and Jaharuddin, N.S., 2023. Research population and sampling in quantitative study. *International Journal of Business and Technopreneurship (IJBT)*, 13(3), pp.209-222. DOI: <https://doi.org/10.58915/ijbt.v13i3.263>
- [28] <https://doi.org/10.1002/itdj.20026>
- [29] Kaur, S.J., Ali, L., Hassan, M.K. and Al-Emran, M., 2021. Adoption of digital banking channels in an emerging economy: exploring the role of in-branch efforts. *Journal of Financial Services Marketing*, 26(2), p.107. doi: 10.1057/s41264-020-00082-w
- [30] Kesharwani, A. and Singh Bisht, S., 2012. The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International journal of bank marketing*, 30(4), pp.303-322. <https://doi.org/10.1108/02652321211236923>
- [31] Kumar Sharma, S. and Madhumohan Govindaluri, S., 2014. Internet banking adoption in India: structural equation modeling approach. *Journal of Indian Business Research*, 6(2), pp.155-169. <https://doi.org/10.1108/JIBR-02-2013-0013>

- [32] Lee, M.C., 2009. Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic commerce research and applications*, 8(3), pp.130-141. <https://doi.org/10.1016/j.elerap.2008.11.006>
- [33] Ly, B. and Ly, R., 2022. Internet banking adoption under technology acceptance model—evidence from Cambodian users. *Computers in Human Behavior Reports*, 7, p.100224. <https://doi.org/10.1016/j.chbr.2022.100224>
- [34] Marakarkandy, B., Yajnik, N. and Dasgupta, C., 2017. Enabling internet banking adoption: An empirical examination with an augmented technology acceptance model (TAM). *Journal of Enterprise Information Management*, 30(2), pp.263-294. <https://doi.org/10.51353/jmbm.v5i1.692>
- [35] Medyawati, H., Christiyanti, M. and Yunanto, M., 2011, September. E-banking adoption analysis using technology acceptance model (TAM): Empirical study of bank customers in Bekasi city. In *International Conference on Innovation, Management, and Service* (Vol. 14, No. 1, pp. 91-95). https://d1wqtxts1xzle7.cloudfront.net/106307961/17-ICIMS2011S00029-libre.pdf?1696651282=&response-content-disposition=inline%3B+filename%3DE_Banking_Adoption_Analysis_Using_Techno.pdf&Expires=1736310435&Signature=UhVNn-62rrAsc2C9cH77~DyQzfsXHWIC8hbKILnSSLUxXWp6lRiSwDAmICCNkevhp~bZ6rpiQ5CMgpsfxjFD4hDuhdZEOiaTm54OygOfHpGyqyCe7TY-JGQ-QJv6XPh8dkOyUdxtQpg6Q5ei~wABvxsnV17dR5v9hOsNQy40hK0aDRaizvxdjiUbiA7EsT7SFxjX3Y5t5QJz4nlXxHpCMEoGOt4VVuYRu1f54seVbC5XJr1qte54rpRzIGsU~mMJ-uerBv5dqgis79jqcIdPp1NCtkAo4CJQ5RjfbBP78X3vdrX9Ig2BWDpbw7Qx87zNm8dUUzNTGTTeWmp7gsosJjzQ___&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA
- [36] Mohamad, M.M., Sulaiman, N.L., Sern, L.C. and Salleh, K.M., 2015. Measuring the validity and reliability of research instruments. *Procedia-Social and Behavioral Sciences*, 204, pp.164-171. <https://doi.org/10.1016/j.sbspro.2015.08.129>
- [37] Mufarid, M., Jayadi, R. and Sugandi, Y., 2020. Factors influencing customers to use digital banking application in Yogyakarta, Indonesia. *The Journal of Asian Finance, Economics and Business*, 7(10), pp.897-907. <https://doi.org/10.13106/jafeb.2020.vol7.no10.897>
- [38] Munoz-Leiva, F., Climent-Climent, S. and Liébana-Cabanillas, F., 2017. Determinants of intention to use the mobile banking apps: An extension of the classic TAM model. *Spanish journal of marketing-ESIC*, 21(1), pp.25-38. <https://doi.org/10.1016/j.sjme.2016.12.001>
- [39] Naeem, M., Jawaid, S.T. and Mustafa, S., 2023. Evolution of modified TAM associated with e-banking services adoption: a systematic PRISMA review from 1975 to 2021. *Journal of Modelling in Management*, 18(3), pp.942-972. <https://doi.org/10.1108/JM2-10-2021-0251>
- [40] Nath, R., Bhal, K.T. and Kapoor, G.T., 2013. Factors influencing IT adoption by bank employees: An extended TAM approach. *Vikalpa*, 38(4), pp.83-96. <https://doi.org/10.1177/0256090920130406>
- [41] Nihayah, N. and Purnama, N.B., 2024. Evaluation Of Digital Banking Application Adoption Based On The Technology Acceptance Model (Tam). *International Journal of Science, Technology & Management*, 5(2), pp.424-430. <https://doi.org/10.46729/ijstm.v5i2.1083>
- [42] Parker, C., Scott, S. and Geddes, A., 2019. Snowball sampling. *SAGE research methods foundations*. Retrieved from: <https://eprints.glos.ac.uk/id/eprint/6781>
- [43] Sakala, L. and Phiri, J., 2019. Factors affecting adoption and use of mobile banking services in Zambia based on TAM model. *Open Journal of Business and Management*, 7(03), p.1380. 10.4236/ojbm.2019.73095
- [44] Samar, S., Ghani, M. and Alnaser, F., 2017. Predicting customer's intentions to use internet banking: the role of technology acceptance model (TAM) in e-banking. *Management Science Letters*, 7(11), pp.513-524. DOI: 10.5267/j.msl.2017.8.004
- [45] Siska, E., 2022. Exploring the essential factors on digital Islamic banking adoption in Indonesia: a literature review. *Jurnal Ilmiah Ekonomi Islam*, 8(1), pp.124-130. <http://dx.doi.org/10.29040/jiei.v8i1.4090>
- [46] Sukkar, A.A. and Hasan, H., 2005. Toward a model for the acceptance of internet banking in developing countries. *Information Technology for development*, 11(4), pp.381-398.

- [47] Sundarraj, R.P. and Manochehri, N., 2013. Application of an extended TAM model for online banking adoption: A study at a Gulf-region university. In *Managing Information Resources and Technology: Emerging Applications and Theories* (pp. 1-13). IGI Global Scientific Publishing.
- [48] Tiong, W.N., 2020. Factors influencing behavioural intention towards adoption of digital banking services in Malaysia. *International Journal of Asian Social Science*, 10(8), pp.450-457. Retrieved from https://www.researchgate.net/profile/W-N-Tiong/publication/343126943_Factors_Influencing_Behavioural_Intention_towards_Adoption_of_Digital_Banking_Services_in_Malaysia/links/5f1808e045851515ef3e4859/Factors-Influencing-Behavioural-Intention-towards-Adoption-of-Digital-Banking-Services-in-Malaysia.pdf
- [49] Tuli, E., 2024. Exploring digital banking adoption in developing Asian economies: Systematic literature review and bibliometric analysis. *International social science journal*, 74(252), pp.399-426. <https://doi.org/10.1111/issj.12463>
- [50] Vinitha, K., 2020. Factors Determining Attitude On The Adoption Of Digital Banking–Assessment Of Tam Model. *Solid State Technology*, 63(5), pp.6528-6538. Retrieved from: https://www.researchgate.net/profile/Vinitha-k/publication/356785096_Factors_Determining_Attitude_On_The_Adoption_Of_Digital_Banking_-_Assessment_Of_Tam_Model/links/61ac4073092e735ae2e087a6/Factors-Determining-Attitude-On-The-Adoption-Of-Digital-Banking-Assessment-Of-Tam-Model.pdf
- [51] Yaghoubi, N.M. and Bahmani, E., 2010. Factors affecting the adoption of online banking: An integration of technology acceptance model and theory of planned behavior. *International journal of business and management*, 5(9), pp.159-165. Retrieved from: <https://pdfs.semanticscholar.org/53ff/282f0e3f84fa934e4088ed5e00d81d13618f.pdf>