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Research Article

Leveraging Information To Overcome Resistance In Mobile Banking: The Moderating Role Of Gender

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ABSTRACT

The study investigates the effect of information and guidance provided by the mobile banking service providers on the usage barriers, risk barrier and image barrier and gender as the moderator. The measurement instrument development and hypotheses were based on consumer resistance theory and the earlier literature on internet and mobile banking, data were collected from a sample size of 269 respondents from Imphal East and Imphal West district of Manipur, India. . The measure items were validated by measurement model and hypotheses were tested using structural equation modelling in IBM AMOS 21 software.

The result of the study found that information and guidance offered by bank has the most significant effect on decreasing the image barrier, followed by usage barriers and risk barriers respectively. The results of gender moderation revealed that information provided by mobile banking service providers has a more significant impact on reducing barriers to males as compared to their female counterparts. Future researchers could expand upon the role of emerging technologies, such as artificial intelligence and block-chain, in enhancing the security and functionality of mobile banking platforms.

Keywords: Mobile banking, risk barrier, usage barrier, image barrier, resistance in mobile banking

1. Introduction

Mobile banking is expected to become very popular soon for several good reasons. However, many people still need to learn more about it. This is because new technology like mobile banking can be a bit tricky to understand at first **(Saaksjarvi, 2003; Smith 2010)**. Sometimes, people resist changes like this, which is pretty normal (**Sheth, 1981: Ram 1987**). But there are other things stopping mobile banking from spreading that we don't talk about enough. These include factors beyond just understanding how the technology works, as pointed out by **Bradley & Stewart (2002)** and **Mols (1999).**

Moreover, having the right information is really important in deciding whether to use mobile banking or not. Having easy access to useful information can really help people make up their minds, as found by **(Bradley & Stewart, 2002**; **Mols, 1999).** Previous studies on banking technologies have shown that some people who do not use mobile banking often struggle because they don't have enough information, knowledge, or training, as shown by **Kuisma et al. (2007)**, **Gerrard et al. (2006)**, and **Mattila et al. (2003)**.

The main objective of the study is to investigate how information about a new idea affects consumer resistance to the innovation, focusing on three key barriers: usage, risk, and image barrier which are derived from earlier literatures. We are giving a specific focus on mobile banking technology which has revolutionized the banking industry with its mobility, flexibility and convenience but is still moderately adopted by the customers in Manipur. So the study aims to make dual contribution; first by giving a special emphasis on mobile banking service which has not received much research attention in the context of finance and towards the innovation resistance theory which is largely a neglected perspective in adoption and diffusion literature.

Furthermore, the paper is structured as follows: Section 2 of the paper presents a broad review of the theoretical base on which our hypotheses is built upon, section 3 presents the data and methods used for the study, Section 4 of the paper which contains the study's results and findings followed by the last section which summarizes the findings and provides conclusion.

2. Review of Literatures & Theoretical Framework

The theoretical framework acts as a roadmap, illustrating the connections between different elements within a model. It offers insight into the reasons why these elements are interrelated, helping to clarify how various factors or concepts influence one another. In simpler terms, it's like a guidebook that helps us navigate through the complexities of understanding how things are connected in our model **(Sekaran & Bougie, 2016)**. To investigate what the obstacles that are hindering mobile are banking users from going to bank, we employed the important work of Ram and Sheth (1989). Their work established a theoretical framework for understanding consumer resistance, which identified two key types of resistance: functional, as well as psychological. The first part outlines the rationale behind the existence of functional barriers, which are usage, value and risk, and psychological barriers, namely tradition and image. Such structure has been formerly included into projects of other researchers who explored the banking technologies (Fain and Roberts, 1997; Laukkanen et al., 2007, 2008, 2009; Cruz et al., 2009), therefore it is a suitable structure for our research as well.

2.1. The Usage Barrier

As per **Ram and Sheth (1989),** the acceptability barrier relates to an innovation which does not accommodate the existing processes, practices, and the habits of the customers. Here, the prevalence of this barrier mirrors complexity **(Rogers, 2003)**, which is the extent to which something is perceived to be hard to comprehend and to use. In the Technology Acceptance Model (TAM), the dimension called ease-of-use depicts how users perceive the innovation being effortless **(Davis et al., 1989)**. This notion is quite similar to what complexity means **(Davis, 1989; Teo and Pok, 2003; Wu and Wang, 2005)** and is inseparable from the usage barrier problem.

As to a mobile banking function, the limits of mobile devices, their small screens and buttons of this size are a stumbling block for users. Hence, some system implementation designs such as the small screens and keypads and low transaction speeds compared to computer-based internet banking have been known to be contributors to slow adoption of mobile banking **(Lee and Chung, 2009).** While smaller screens may be enough for mobile browsing of information-based banking services including checking account balances, the transactions that need operating the bank account require wider screens **(Laukkanen, 2007a)**. On the one hand, some customers in the mobile payments would take longer and complex the process because of the limited information processing capacity and therefore only a partial view of the bills on the screen, which makes it difficult to implement the service **(Laukkanen, 2007b; Laukkanen and Lauronen, 2005)**. Moreover, among the channel attributes, these two groups are seen to exhibit diverging preferences **(Laukkanen, 2007c).** However, other researchers tend to view simple authorization mechanism as one the key factors in internet banking whereas some customers find the change of PIN numbers as inconvenient **(Kuisma et al., 2007).**

The usage barrier deals with whether the innovation is functional in its usability or not. Previous research show that the individuals expressing functional resistance to banking technologies express greater dissatisfaction with the information and guidance given by the banking in comparison to others. This underscored the need for diverse customer education initiatives on behalf of providers of such services in order to reduce resistance **(Laukkanen et al., 2009)**.Consequently, we posit the following hypothesis:

H01. The quality of information and guidance provided by the bank negatively influences the usage barrier.

2.2. The Risk barrier

Since its birth in the 1960s, risk theory has been the main tool used by researchers when discussing how consumers analyse and manage unpredictable decisions. Lately, there has been a complete makeover on the notion of perceived risk in harmony with the expansion of virtual transactions. At first, it was about fraudulent attempts as well as product quality, but, due to extensive online use, it has been expanded to address the wider range of complexities, i.e. financial, psychological, physical and social risks involved in online transactions **(Forsythe & Shi, 2003; Im et al., 2008; Lee & Turban, 2001; Pavlou, 2003)**

The risk barrier, on the contrary, talks about the degree of probable negative outcomes from the implementation of an innovation **(Ram and Sheth, 1989)**. Risk perceptions are sometimes driven by the uncertainties arising out of difference between users' preferences and the actual results a device can produce. In the event that a technology refuses to fulfil its promises, it may lead to significant consequences for the end user **(Forsythe and Shi 2003)**. Previous research on mobile banking and alike technologies has highlighted different kinds of risks, such as privacy and security issues among its customers **(Sadiq et al., 2019). Kuisma et al. (2007)** focus on security risks associated with a portable PIN codes which could compromise the safety of bank accounts if it is lost or robbed, and **Poon (2008)** discussed how such problems, including

the risk of hackers accessing banks through PIN number and create anxiety among the bank customers which are too serious to be dealt with lightly. According to **Brown et al. (2004), and Laukkanen et al. (2007)** the security of private information like credit card numbers and bank accounts is the key to help mobile banking to grow, especially among older consumers.

Furthermore, reliability which is defined as the level of confidence in a new technology's consistent and accurate performance, is a critical aspect of technology-based financial services, as users require consistent and accurate performance to conduct their financial transactions securely **(Laukkanen et al., 2007)**. Mobile phones with its limited memory capacity, and battery life may hinder the ability to fully support and utilize mobile services **(Chong and Chan, 2006)**.

Lastly self-efficacy emerged as a significant predictor of resistance to technological innovations, as demonstrated by **Ellen et al. (1991)**. Self-efficacy in technology use, refers to individuals' belief in their capacity to successfully navigate and utilize a specific technology **(Agarwal et al, 2000)**. **Ellen et al. (1991)** propose that resistance to alternatives can stem from feelings of inadequacy or discomfort when individuals perceive the alternative as challenging or beyond their capability to handle. Consequently in their study **Luarn and Lin (2005)** characterized perceived self-efficacy as individuals' evaluation of their capability to effectively utilize mobile banking services.

Limayem and Hirt (2003), state that mobile banking service providers should prioritize building trust with their customers. They assert that offering reliable and relevant information is crucial for establishing and maintaining trust with customers. Thus the third hypothesis of the study is:

H02: Information and guidance offered by bank has a negative effect on the risk barrier.

2.3. The Image barrier

As innovations become associated with specific product categories, they inherit certain perceptions and characteristics. When these associations carry unfavorable connotations, it contributes to resistance to mobile banking known as the image barrier (Ram and Sheth, 1989).

Every person sees things in their own way. The image someone forms about something is based on their personal likes and dislikes. This perception issue stems from stereotype thinking and can create challenges for innovation (**Sheth. J.N, 1989**). In the late 1990s, **Fain and Roberts (1997)** suggested that image barrier in online banking arises from an adverse perception of computers and the internet as hard to use. This is associated with anxiety towards computers **(Kay, 1993)** and negative attitudes towards technology tools (**Meuter et al., 2003**). This may still be the case today for mobile banking because if consumers perceive the service as cumbersome to use, they may be hesitant to adopt it. **(Davis, 1989)**. Thus we can hypothesise that

H03: Information and guidance offered by mobile banking service providers has a negative effect on the image barrier.

2.4. Moderator: Gender

Various moderators are employed in technology related studies **(Aboobucker, 2018)**. These moderators have been categorized into three groups by **Zhand et al. (2006)**. The first group pertains to organizational factors, the second to technological factors, and the third to personal factors such as age and gender. Past research indicates that gender significantly influences behavioural intention in information system studies **(Zhang et al, 2006; Venkatesh, 2003**; **Tarhini, 2014)**. Furthermore, **Yousafzai, 2012** revealed that technological readiness, age, and gender moderate the attitude, intention of internet banking consumer. In this study we, employed gender as a moderating variable.

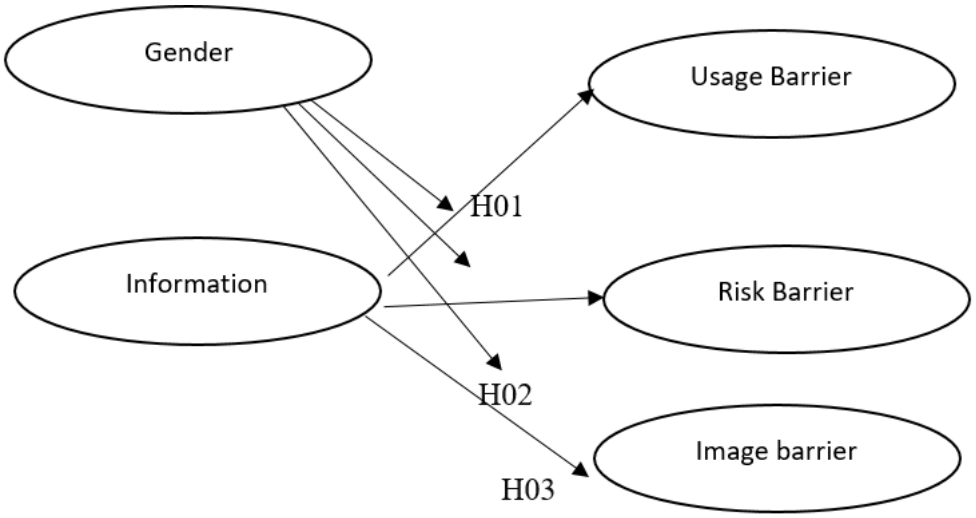

Fig.1. the research model

3. Research Methodology

3.1. Measurement items

The three adoption barriers in accordance with the literature on innovation resistance were examined with the help of 10 items derived from prior internet and mobile banking studies, out of which one item (RB2) was dropped due to inability to meet the threshold required for standardized value . Moreover, the information and guidance offered by the bank was measured with 4 items out of which again one item (INF2) was dropped due to standardized value below 0.5. A seven point Likert scale ranging from strongly disagree (1) to strongly agree (7) was utilized in all the statements. The measured items with literature are presented in Table 1.

3.2. Data analysis

The study's model was constructed in line with the framework illustrated in Figure 1 and tailored to fit the predefined hypotheses. Following the approach outlined by **Anderson and Gerbing (1988)**, a two-step methodology was employed. Firstly, the reliability of the measurement instrument was assessed through a measurement model, elucidating the connections between latent variables and observed indicators. Subsequently, the hypotheses underwent scrutiny via structural equation modeling (SEM). This process entailed customary phases including model delineation, parameter estimation, hypothesis testing, and model fit evaluation. The analysis was conducted utilizing Amos 21.0 software. Significance in hypothesis testing was determined by p-values below 0.05.

4. Results and findings

Table.1 Measurement items

Particulars	Questions	Source
Usage Barrier	1. In my opinion, MB services are easy to use 2. In my opinion, the use of mobile banking services in convenient. 3. In my opinion, MB services are fast to use	• Kuisma et al. (2007) • Laukkanen (2007a, b) • Laukkanen and Lauronen (2005) • Lee and Chung, 2009
Risk Barrier	1. I fear that while I am paying a bill by mobile phone, I might make mistakes since the correctness of the inputted information is difficult to check from the screen 2. I fear that while I am using mobile banking services, the battery of the mobile phone will run out or the connection will otherwise be lost 3. I fear that while I am using a mobile banking service, I might tap out the information of the bill wrongly 4. I fear that the list of PIN codes may be lost and end up in the wrong hands	• Brown et al. (2003) • Kuisma et al. (2007) • Laukkanen (2007b) • Laukkanen and Lauronen (2005) • Lee et al. (2003) • Luarn and Lin (2005) • Poon (2008)
Image barrier	1. In my opinion, new technology is often too complicated to be useful 2. I have such an image that mobile banking services are difficult to use 3. I have a negative image of mobile banking in general	• Fain and Roberts (1997) • Kuisma et al. (2007)
Information	1. In my opinion, there is enough information available about mobile banking services 2. I feel that the bank has guided me enough related to mobile banking services 3. I feel that when needed, I will get enough guidance from the bank related to mobile banking services 4. I feel the banks have marketed mobile banking positively	• Gerrard et al. (2006) • Kuisma et al. (2007) • Mattila et al. (2003)

Table.2. Demographic profile

		Frequency	Percentage
Gender	Male	106	39.41
	Female	163	60.59
Age	18-25	107	39.77

	26-33	120	44.61
	34-41	42	15.62
Education	Under-Graduate	73	27.13
	Graduate	102	37.91
	Above Graduate	94	34.96
Mobile banking user	Moderate user	126	45.72
	Expert user	143	54.28

Source: Authors data proceeds (2024)

Reliability analysis and exploratory factory analysis

Table.3. Exploratory factor loading

	Factor loadings	Squared multiple correlations
Information		
INF1	0.806	0.53
INF	0.816	0.58
INF4	0.868	0.48
Usage Barrier		
UB1	0.853	0.37
UB2	0.838	0.96
UB3	0.871	0.85
Risk Barrier		
RB1	0.824	0.48
RB3	0.864	0.74
RB4	0.832	0.46
Intention Barrier		
IB1	0.799	0.59
IB2	0.857	0.49
IB3	0.807	0.62

Source: Authors data proceeds (2024)

Table 3 depicts the result of exploratory factor analysis. The Cronbach's coefficient value should exceed 0.6 as recommended by **Churchill, 1979** & **Peter, 1979**, while it is advisable to aim for a more stringent threshold of 0.70 as suggested by **Nunnally, 1994**. The findings from the exploratory factor analysis (EFA) revealed distinct underlying factors in the dataset. The factor loadings, which represent the strength and direction of the relationship between observed variables and underlying factors, indicated that items related to Information, such as INF1, INF2, and INF4, exhibited high loadings on the Information factor, suggesting a strong association. Similarly, items pertaining to Usage Barrier (UB1, UB2, and UB3), Risk Barrier (RB1, RB3, and RB4), and Image Barrier (IB1, IB2, and IB3) demonstrated high loadings on their respective factors, indicating significant relationships. Additionally, the squared multiple correlations provided insights into the proportion of variance in each variable explained by the identified factors. Two items one from Information and another from risk barrier were eliminated due to the factor loading of these items being less than 0.5. After obtaining the desired results, confirmatory factor analysis (CFA) was conducted to assess model fitness, convergent validity, and discriminant validity. Finally, structural equation modeling (SEM) was employed to test the casual relationship among the variables.

Table.4. Composite reliability and confirmatory factor loading

Model Construct	**Measurement Item**	**Loadings**	**AVE**	**Composite Reliability**
INF	INF1	0.73	0.528	0.770
	INF3	0.76		
	INF4	0.69		
UB	UB1	0.61	0.726	0.884
	UB2	0.98		
	UB3	0.92		
RB	RB1	0.69	0.559	0.790
	RB3	0.86		
	RB4	0.68		
IB	IB1	0.77	0.569	0.797
	IB2	0.70		
	IB3	0.79		

Source: Authors data proceeds (2024)

Table 4 displays the parameters of convergent validity, including Average Variance Extracted (AVE), Composite Reliability (CR), and standardized loadings. AVE represents the amount of variance captured by the variables, while composite reliability indicates the consistency of the scales. According to Hair (2010), a composite reliability coefficient greater than 0.7 reflects the highest level of consistency. Standardized loadings should ideally exceed 0.5 **(Hair, 2010),** although **Hair (2012)** suggests a minimum of 0.6. Achieving convergent validity requires each variable to have coefficients of at least 0.50 for AVE and 0.70 for composite reliability **(Hair, 2016).** In Table 4, all values surpass the recommended thresholds, confirming convergent validity.

Table.5. Discriminant Validity

Constructs	INF	UB	RB	IB
INF	**0.726**			
UB	0.452	**0.852**		
RB	0.239	0.50	**0.747**	
IB	0.389	0.325	0.392	**0.754**

Source: Authors data proceeds (2024)

Table 5 depicts the discriminant validity of the data which was evaluated by comparing the square root of Average Variance Extracted (AVE) with the correlation among the constructs. For adequate discriminant validity, the square root value of AVE, which is represented by the (diagonal elements) should ideally exceed the correlation between any pair of constructs (off-diagonal elements) according to **Chin et.al (1998)**. All correlation values in Table 4 were found to be less than 1, indicating a positive and significant correlation. Hence the discriminant validity is established.

Table.6. Model fit indices

Model fit indices	Acceptable Value	Result
CMIN	<3 Good, <5 Permissible	3.221
GFI	>0.90	0.919
AGFI	>0.80	0.869
CFI	>0.90	0.910
IFI	>0.90	0.911
SRMR	<0.80	0.078
RMSEA	<1.0	0.091

Source: Authors data proceeds (2024)

Table 6 shows the model-fit indices used for the model, it is evident from the table that the model exhibits satisfactory and acceptable goodness-of-fit indices: CMIN = 3.221 (<5), GFI= 0.919 (>0.90), AGFI= 0.869 (>0.80), CFI= 0.910 (> 0.90), IFI= 0.911 (>0.90), SRMR= 0.078 (<0.80) and RMSEA= 0.091 (<1.0). Overall, these findings suggest that our model adequately represents the relationships among variables in our study.

Path analysis

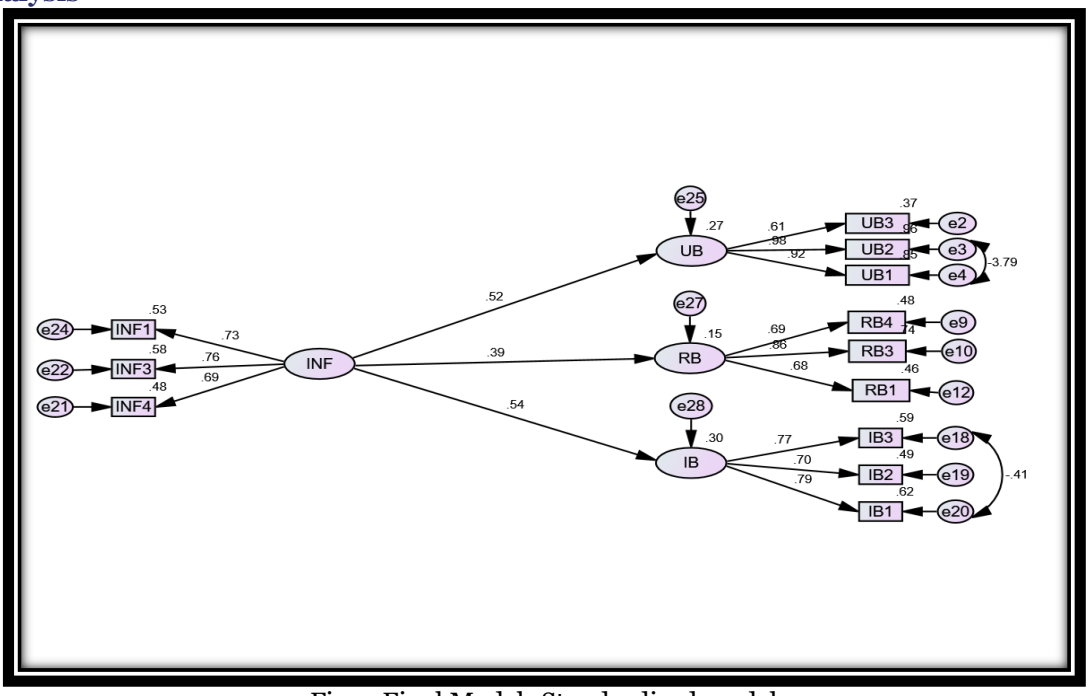

Fig.2. Final Model- Standardized model

Table.7. Hypothesis testing (n=269)

Relationship	Beta Value	Standard Error	C.R	P value	t-statistics	Supported
INF→ UB	.411	.091	4.531	***	4.516	YES
INF→ RB	.364	.076	4.795	***	4.789	YES
INF→ IB	.445	.068	6.531	***	6.544	YES

Source: Authors data proceeds (2024)

Table 7 as well as Figure 2 represents the estimated paths of the constructs. Based on the findings, all variables i.e. usage barriers, risk barrier and image barrier are found to be significant at p-value less than 0.05. The results indicate that information exerts the greatest influence on image barrier of mobile banking (0.54, p-value = 0.00) followed by usage barrier (0.52, p-value = 0.00) and risk barrier (0.39, p-value = 0.00). Results show that information and guidance offered by mobile banking service providers have a positive impact on reducing on usage, risk and image barriers, these findings highlight the importance of information and guidance provided by mobile banking service providers in addressing various barriers that customers may encounter. By effectively communicating information and offering guidance, service providers can potentially enhance customer usage and acceptance of mobile banking services while mitigating concerns related to usage, perceived risks, and image barriers.

Moderation Analysis

To examine the moderating effects of gender, we categorized the data into male and female respondents and analyzed it using the grouping variable technique in Amos, adapted from **Hwang, 2010**.
In our dataset, there's an unequal distribution between male and female responses, however, **Dunnet, 1980** suggested that unequal sample sizes can still be compared if the variances in the two groups are similar. In our study, the data was collected from the same population, so we can assume that the variance is consistent across both groups. In addition **Sarstedt, et.al, 2011** also suggested that comparing groups with different sample sizes is feasible.

Table.8. Comparing the Path coefficients based on Gender

Path	Male (106)		Female (163)	
	B	S.E.	B	S.E.
INF→ UB	.568***	.138	.308*	.117
INF→ RB	.391***	.117	.275(n.s.)	.098
INF→ IB	.245*	.096	.419***	.086

*P < 0.05, *** P < 0.001, n.s. = not significant
Source: Authors data proceeds (2024)

The table 8 represent the result of comparison of path coefficients between male and female participants. It reveals that notable gender differences are there in the relationship examined. It is evident that male respondents demonstrates a stronger and statistically significant positive relationship (B= 0.568, p<0.001), whereas female respondents exhibit a comparatively weaker and marginally significant association (B = 0.308, p < 0.05). Similarly regarding risk barrier, males exhibit a significant positive relationship (B = 0.391, p < 0.001), whereas females do not show statistical significance (B = 0.275, n.s.). Furthermore, for image barrier females demonstrate a significant positive relationship (B = 0.419, p < 0.001), while males exhibit only a marginally significant association (B = 0.245, p < 0.05).

5. Discussion

The main aim of this study was to identify the impact of information and guidance offered by the mobile banking service providers towards various risk barriers which customers encounter and restrain them from availing the service. By analysing the path estimates, it was discovered that information and guidance offered by the service providers have a notable and positive influence on the mitigating usage, image and risk barriers of using mobile banking. To enhance mobile banking adoption, service providers should prioritize clear and transparent communication, offering user-friendly guidance and highlighting security measures. Proactively addressing common misconceptions and providing accessible support channels can also reassure users. Education through tutorials and resources can empower users, while seeking feedback allows providers to continuously improve their services. These strategies can effectively alleviate barriers and encourage wider adoption of mobile banking services.
The information and guidance offered by the mobile banking companies have a positive impact on reducing the risk barriers, usage barrier and the image barrier, a finding consistent with the previous studies such as **Laukkanen (2010)** which suggests that having better knowledge about mobile banking services and their security measures can enhance users' trust and confidence in using these platforms. Moreover, increased awareness about the security features and risk management strategies employed by mobile banking providers

can mitigate concerns regarding potential financial risks associated with online transactions. Additionally, studies by **Lee et al. (2018)** and **Chen et al. (2021)** have demonstrated that clear communication and education about the benefits and security protocols of mobile banking can significantly reduce users' perceived risks and increase their adoption rates. Therefore, incorporating comprehensive educational initiatives and transparent communication strategies within mobile banking services can effectively address users' risk concerns and promote greater utilization of these platforms.

"The results of gender moderation revealed that information provided by mobile banking service providers has a more significant impact on reducing barriers to using mobile banking for males compared to females. This finding is consistent with previous research by **Kim and Kwon (2020)** and **Garcia et al. (2020)**, which suggests that gender differences may influence individuals' perceptions and attitudes towards mobile banking services. Additionally, studies by **Lee et al. (2018) and Chen et al. (2021)** have highlighted the importance of tailored communication strategies and targeted interventions to address gender-specific barriers and preferences in mobile banking adoption. Therefore, understanding gender dynamics and implementing gender-sensitive approaches in mobile banking initiatives can help bridge the gender gap in access and utilization of financial services.

5.1. Recommendations

The study has significant implications for banking institutions aiming to promote mobile banking adoption. Strategic communication efforts should prioritize highlighting the benefits and security features of mobile banking through targeted marketing campaigns. Providing comprehensive educational resources, such as user guides and tutorials, can empower customers with the knowledge needed to navigate mobile banking platforms confidently. Tailored customer support services, including dedicated helplines and live chat support, can offer personalized assistance and enhance user experience. Additionally, implementing gender-sensitive approaches in marketing and support services can address the unique needs of diverse user demographics. By adopting these strategies, banks can overcome barriers to mobile banking adoption and cultivate a user-friendly and inclusive mobile banking environment.

5.2. Future area of research

Future research in this area could explore the effectiveness of various educational interventions and communication strategies in promoting mobile banking adoption and usage could offer valuable insights for banking institutions. Furthermore, examining the role of emerging technologies, such as artificial intelligence and block-chain, in enhancing the security and functionality of mobile banking platforms could be a promising avenue research in future.

References:

1. Aboobucker, I., & Bao, Y. (2018). What obstruct customer acceptance of internet banking? Security and privacy, risk, trust and website usability and the role of moderators. *The Journal of High Technology Management Research*, *29*(1), 109-123.
2. Agarwal, R., Sambamurthy, V., & Stair, R. M. (2000). The evolving relationship between general and specific computer self-efficacy—An empirical assessment. *Information systems research*, *11*(4), 418-430.
3. Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, *103*(3), 411.
4. Bradley, L., & Stewart, K. (2002). A Delphi study of the drivers and inhibitors of Internet banking. *International journal of bank marketing, 20*(6), 250-260.
5. Brown, I., Hoppe, R., Mugera, P., Newman, P., & Stander, A. (2004). The impact of national environment on the adoption of internet banking: Comparing Singapore and South Africa. *Journal of Global Information Management (JGIM)*, *12*(2), 1-26.
6. Chen, X., You, X., & Chang, V. (2021). FinTech and commercial banks' performance in China: A leap forward or survival of the fittest?. *Technological Forecasting and Social Change*, *166*, 120645.
7. Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research*, *295*(2), 295-336.
8. Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of marketing research*, *16*(1), 64-73.
9. Cruz, P., Barretto Filgueiras Neto, L., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking rollout in emerging markets: evidence from Brazil. *International Journal of bank marketing*, *28*(5), 342-371.
10. Cox, W. E. (1967). Product life cycles as marketing models. *The journal of business*, *40*(4), 375-384.
11. C.W. Dunnett. (1980) Pairwise multiple comparisons in the homogeneous variance, unequal sample size case, J. Am. Stat. Assoc. 75 (372) 789–795.
12. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
13. Ellen, P. S., Wiener, J. L., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of public policy & marketing*, *10*(2), 102-117.

14. Fain, D., & Roberts, M. L. (1997). Technology vs. consumer behavior: the battle for the financial services customer. *Journal of Direct Marketing, 11*(1), 44-54.
15. Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business research*, *56*(11), 867-875.
16. Gerrard, P., Barton Cunningham, J., & Devlin, J. F. (2006). Why consumers are not using internet banking: a qualitative study. *Journal of services Marketing, 20*(3), 160-168.
17. Hwang, Y. (2010). The moderating effects of gender on e-commerce systems adoption factors: an empirical investigation. *Computers in Human Behavior, 26*(6), 1753-1760.
18. Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2010). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the academy of marketing science, 40*, 414-433.
19. Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2012). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European business review, 26*(2), 106-121.
20. Im, I., Kim, Y., & Han, H. J. (2008). The effects of perceived risk and technology type on users' acceptance of technologies. *Information & management, 45*(1), 1-9.
21. Kay, S. M. (1993). Fundamentals of statistical signal processing: estimation theory. Prentice-Hall, Inc..
22. Kim, D., & Bae, J. K. (2020). Understanding internet-only bank service adoption: An integration of the unified technology theory of acceptance and innovation resistance model. *Global Business & Finance Review (GBFR), 25*(3), 49-59.
23. Kuisma, T., Laukkanen, T., & Hiltunen, M. (2007). Mapping the reasons for resistance to Internet banking: A means-end approach. *International journal of information management, 27*(2), 75-85.
24. Laukkanen, P., Sinkkonen, S., & Laukkanen, T. (2008). Consumer resistance to internet banking: postponers, opponents and rejectors. *International journal of bank marketing, 26*(6), 440-455.
25. Laukkanen, T. (2007). Internet vs mobile banking: comparing customer value perceptions. *Business process management journal, 13*(6), 788-797.
26. Laukkanen, T., & Lauronen, J. (2005). Consumer value creation in mobile banking services. *International journal of mobile Communications, 3*(4), 325-338.
27. Laukkanen, T., Sinkkonen, S., Kivijärvi, M., & Laukkanen, P. (2007). Innovation resistance among mature consumers. *Journal of consumer marketing, 24*(7), 419-427.
28. Lee, K. C., & Chung, N. (2009). Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective. *Interacting with computers, 21*(5-6), 385-392.
29. Lee, M. K., & Turban, E. (2001). A trust model for consumer internet shopping. *International Journal of electronic commerce, 6*(1), 75-91.
30. Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). Social Media & Mobile Internet Use among Teens and Young Adults. Millennials. Pew internet & American life project.
31. Lee, S., & Lee, K. C. (2018). Comparative study of service quality on VIP customer satisfaction in Internet banking: South Korea case. Sustainability, 12(16), 6365
32. Limayem, M., & Hirt, S. G. (2003). Force of habit and information systems usage: Theory and initial validation. *Journal of the Association for information Systems, 4*(1), 3.
33. Luarn, P., & Lin, H. H. (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in human behavior, 21*(6), 873-891.
34. M. Sarstedt, J. Henseler, C.M. Ringle, Multigroup analysis in partial least squares (PLS) path modeling: alternative methods and empirical results, in: Measurement and Research Methods in International Marketing, Emerald Group Publishing Limited, 2011, pp. 195–218.
35. Mattila, M., Karjaluoto, H., & Pento, T. (2003). Internet banking adoption among mature customers: early majority or laggards?. *Journal of services marketing, 17*(5), 514-528.
36. Meuter, M. L., Ostrom, A. L., Bitner, M. J., & Roundtree, R. (2003). The influence of technology anxiety on consumer use and experiences with self-service technologies. *Journal of business research, 56*(11), 899-906.
37. Mols, N. (1998). The behavioral consequences of PC banking. *International Journal of Bank Marketing, 16*(5), 195-201.
38. Moreno-García, E. (2020). Internet banking service perception in Mexico. *Journal of Risk and Financial Management, 16*(8), 364.
39. Nunnally, J. (1994). Psychometric theory. (No Title).
40. Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International journal of electronic commerce, 7*(3), 101-134.
41. Peter, J. P. (1979). Reliability: A review of psychometric basics and recent marketing practices. *Journal of marketing research*, *16*(1), 6-17.
42. Poon, W. C. (2008). Users' adoption of e-banking services: the Malaysian perspective. *Journal of business & industrial marketing, 23*(1), 59-69.
43. Ram, S. (1987), "A model of innovation resistance", Advances in Consumer Research, Vol. 14 No. 1, pp. 208-12.

44. Ram, S., & Sheth, J. N. (1989). Consumer resistance to innovations: the marketing problem and its solutions. *Journal of consumer marketing, 6*(2), 5-14.
45. Ritala, P., & Hurmelinna-Laukkanen, P. (2009). What's in it for me? Creating and appropriating value in innovation-related coopetition. Technovation, 29(12), 819-828.
46. Sadiq, M., Adil, M., & Khan, M. N. (2019). Automated banks' service quality in developing economy: empirical evidences from India. *International Journal of Services and Operations Management, 33*(3), 331-350.
47. Saaksjarvi, M. (2003). Consumer adoption of technological innovations. *European Journal of Innovation Management, 6*(2), 90-100.
48. Salihu, A., Metin, H., Hajrizi, E., & Ahmeti, M. (2019). The effect of security and ease of use on reducing the problems/deficiencies of Electronic Banking Services. IFAC-PapersOnLine, 52(25), 159-163.
49. Sahin, I. (2003). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *Turkish Online Journal of Educational Technology-TOJET, 5*(2), 14-23.
50. Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill building approach. john wiley & sons.
51. Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies!. *Journal of business research, 69*(10), 3998-4010.
52. Sarstedt, M., Henseler, J., & Ringle, C. M. (2011). Multigroup analysis in partial least squares (PLS) path modeling: alternative methods and empirical results. In Measurement and Research Methods in International Marketing (pp. 195–218). Emerald Group Publishing Limited.
53. Sheth, J. N. (1981). Psychology of innovation resistance: the less developed concept (LDC) in diffusion research. Research in Marketing, 4(3), 273-82.
54. Sheth, J. N. (1987). A model of innovation resistance. *Advances in Consumer Research, 14*(1), 208-12.
55. Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International Journal of Human-Computer Studies, 64*(2), 53-78.
56. Tan, G. W. H., Chong, C. K., Ooi, K. B., & Chong, A. Y. L. (2010). The adoption of online banking in Malaysia: an empirical analysis. *International Journal of Business and Management Science, 3*(2), 169-193.
57. Tarhini, A., Masa'deh, R. E., Al-Busaidi, K. A., Mohammed, A. B., & Maqableh, M. (2017). Factors influencing students' adoption of e-learning: a structural equation modeling approach. *Journal of International Education in Business, 10*(2), 164-182.
58. Teo, T. S., & Pok, S. H. (2003). Adoption of WAP-enabled mobile phones among Internet users. Omega, 31(6), 483-498.
59. Tommi, Laukkanen., Vesa, Kiviniemi. (2010). The role of information in mobile banking resistance. *International Journal of Bank Marketing*, doi: 10.1108/02652321011064890
60. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS quarterly, 425-478.
61. Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce?: An empirical evaluation of the revised technology acceptance model. *Information & management, 42*(5), 719-729.
62. Yousafzai, S., & Yani-de-Soriano, M. (2012). Understanding customer-specific factors underpinning internet banking adoption. *International journal of bank marketing, 30*(1), 60-81.