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Antecedents of M-Banking and the Moderators to Depositors' Behavioral Intention Using the UTAUT Model

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Abstract: *The challenge for traditional brick-and-mortar banks is to reinvent and adopt new strategies to stay relevant in the ever-changing and competitive landscape of the banking industry. This research investigated the influence of mobile banking (m-banking) antecedents on users' behavioral intention. It tested the moderation effect of age and sex through the Unified Theory of Acceptance and Use of Technology (UTAUT). A causal-relationship research design was used in the study where data gathered came from m-banking users (N=382) of 11 branches of the Bank of the Philippine Islands (BPI) in North Pampanga, Philippines. The findings revealed that age and sex moderated facilitating condition antecedent and behavioral intention, while performance expectancy antecedent and facilitating condition were moderated by sex.*

Keywords: Mobile banking antecedents; UTAUT model; Philippine banking; Moderation; Consumer behavior.

1. Introduction

The significant communication technology developments and advancements have changed people's behavior in accomplishing their daily tasks. As mobile networks and technology integrate, opportunities and applications are presented to both businesses and consumers. In the last decade, there has been a dynamic and competitive banking industry in which the revolution of the delivery of its financial services continues. Electronic banking (e-banking) is one of the business-to-consumer (B2C) applications produced in the 21st century. E-banking research includes consumer attitudes and behavior toward ATMs, issues and concerns on adoption, and quality of services of e-banking. A variant of e-banking is mobile banking (m-banking), which offers the same services, features, and benefits to consumers as internet banking. However, in the latter, it is represented by enhanced "anywhere- anytime" banking services over other channels in the banking sector. M-banking refers to technologies that enable consumers

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to access their banking services through their mobile phones. For Zhou et al. (2010), it is cell phone banking that provides services such as balance inquiry, money transfers, and bill payment. M-banking benefits both banks and customers (Rahman et al., 2015; Sadat et al., 2020). The Philippine banking industry started in 1851, El Banco Espanol Filipino de Isabel II (now the Bank of the Philippine Islands, commonly referred to as BPI), as the first bank to be instituted. Before, depositors had to travel to a physical branch (brick and mortar) to complete their bank transactions. Then, cash withdrawal was made more accessible with the installation of automated teller machines (ATMs). After which, phone banking was put into place so depositors could also do banking transactions through a phone call either via landline or mobile phone. As demands for banking services surge, banking institutions instituted online banking facilities, where depositors can carry out their usual banking transactions through the use of internet-enabled laptops and desktop computers via an internet browser.Banks have also seen the needs of the depositors to make cash deposits any time of the day and any day of the week; thus, they have also installed cash deposit machines (CDMs), where depositors can do deposit transactions to various accounts without the need for a bank teller validation (Ahmed et al., 2013).

As depositors embrace digitalization, banking institutions explored and expanded on their respective mobile banking platforms as a means to accessible and convenient banking; depositors just need to have an internet-enabled phone to carry out their usual banking transactions.

Currently, numerous innovations confront the financial system in the Philippines. Of the more than 60 million depositors across the entire Philippine banking system, 44.727 million or 74% belongs to the universal and commercial banks; 7.302 million or 12% accounts for the depositors of thrift banks; while 8.6 million or the remaining 14% is composed of depositors from both rural and cooperative banks. The overall penetration rate for m-banking is 28%, 16% higher than the mobile banking penetration rate in 2017. The latest mobile banking penetration rate translates to P16.992M mobile banking users across the country for 2019. Further studies of BSP have shown that around 46 percent of Filipinos with bank accounts have mobile banking access however are hesitant about banking digitization. Due to concerns on availability and security of electronic platforms and digital services (Mamun et al., 2013; Nahar et al., 2020; Nahar et al., 2021).

The BPI, being considered as the oldest bank in the Philippines and across Southeast Asia, has continued to draw strength from its increasing customer base with now 8.5 million depositors, a half a million increase from 2017. It is the third-largest universal bank (excluding government banks) as to asset size with P1.843 trillion in assets based on the statistics published by BSP as of September 2019, while its mobile banking

penetration is 23% for 2018, up from 17% in 2017 according to the latest statistics of BPI's Strategy & Product Marketing for Sales & Service Channel.

BPI was the first to launch a full-service online portal and mobile app and phone banking; pioneered the first branchless banking via the BPI Direct Savings Bank; and offered the country's first convenient banking through the installation of the country's first cash acceptance machine (CAM), BPI Express Assist (BEA), and BPI Express Assist (BEA) Online.

It is through all these thrusts and initiatives about banking digitalization that the researchers find it interesting to endeavor this study about mobile banking. The study may provide in the development of the strategic imperatives of the financial institutions in the country and the addition to the mobile banking literature this research could contribute.

1.2 Objectives of the Study

This study investigated the antecedents of mobile banking among depositors and their behavioral intention to use the services of m-banking. The following were the study's objectives:

1. To describe the respondents' profile as to age and sex;
2. To describe the antecedents and behavioral intention in using m-banking;
3. To investigate profile variables' moderation effect on antecedents and respon dents' behavioral intention in using m-banking.

1.3 Importance of the Study

The result of this study is of significant value to the banking institutions/industry, the academe, and future researchers. First, with the banks and the industry, the study provided information in helping them understand the role of m-banking in their service provision duties. Second, to academicians, findings on drivers of mobile banking may help faculty members in their discourse of various business topics as applied in the context of local banks. This also encourages a strong interest in doing research in different fields or contexts. Third, results on m-banking antecedents and moderators to depositors' behavioral intention serve as an addition to the available related local studies, which the researchers noted to this day are still limited.

2. Literature Review

2.1 Mobile Banking

M-banking is Internet banking's development and extension, aimed at providing bank customers better financial services through updated mobile technology (Yao & Zhong, 2011). Thru m-banking, banks clients can transact with their banks at any time of the day, at any place. (Afshan & Sharif, 2016).

M-banking, as a phenomenon, is relevant to information system professionals and has been described as one of the most important and promising developments in the field of e-commerce and banking (Lin, 2011). As revealed in the research, the change in technologies and buyer preferences may significantly affect the success or failure of a bank's strategies (Byers & Lederer, 2001). Banking institutions now include m-banking as part of their strategic directive (Nysveen et al., 2005). For instance, in emerging markets, m-banking may post the possibility of becoming a primary channel (Barnes & Corbitt, 2003).

2.2 The UTAUT Model

UTAUT had been one of the models widely used and acknowledged, which explains the underlying factors affecting technology acceptance among customers.

Venkatesh et al. (2003) explained technology adoption through a survey of 215 participants from four companies, where they compared a total of eight (8) competing models. Through a longitudinal study, they combined and advanced the eight models into a new model named UTAUT. As a result, the UTAUT gave the researchers an avenue to explore the contingencies or moderators that may boost or constraint the outcomes of core elements or antecedents. The proven and tested statistical acceptability and validity of UTAUT prompted the researchers to elect UTAUT as the theoretical foundation in developing the study's hypotheses.

Since the introduction of digitalization and the information age, user acceptance of technology has received momentum as a research topic. It has become interesting for both researchers and industry practitioners to identify what determines consumer beliefs and attitudes, as well as their resistance or adoption towards technology acceptance (Lee et al., 2003). Various studies have named theoretical frameworks or predictive models regarding the acceptance of technology, namely: TAM theory, TRA, the TPB, SCT, and the Extended TAM (or TAM2).

However, these models still have their limitations. First, though the theories employ varying terminologies, they basically explain the same concepts. Secondly, there is no

exists single theory that covers all or most of the factors. For a unified model to be achieved, existing models must be carefully reviewed and synthesized (Venkatesh et al., 2003).

2.2.1 Performance Expectancy

It has been recognized that the critical factor to m-banking adoption is consumer perceived usefulness (Sripalawat et al., 2011; Riquelme & Rios, 2010; Luarn & Lin, 2005). On the other hand, the impact of m-banking relative advantage to the intention of customers to adopt m-banking was identified by Puschel et al. (2010) and Yang (2009).

Park et al. (2007) studied the connection between performance expectance and the adoption of mobile technologies. Likewise, Lu et al., (2009) concluded performance expectance to be significantly affecting people's use of mobile data services using UTAUT. Performance expectance is attached at perceived usefulness in TAM and TAM2, extrinsic motivation in MM, job-fit in MPCU, outcome expectations in SCT, and relative advantage in IDT.

2.2.2 Effort Expectancy

It has been defined by Venkatesh et al. (2003) to be the extent of ease that is connected with technology use. This was inspired by other predictive models: from TAM and TAM2 (perceived ease of use), from MPCU (complexity), and from IDT (ease-of-use).

In a number of researches, perceived ease-of-use has been proven as a determinant that influences customers to use or adopt m-banking (Sripalawat et al., 2011; Puschel et al., 2010; Luarn & Li, 2005). The result divulged that there was an influence between effort expectance and bank customer's intention to use mobile technology or service (Lu et al., 2009 and Park et al., 2007)

2.2.3 Social Influence

In TRA, TAM2, TPB/DTPB, and C- TAM-TPB, social influence refers to the social norm; in MPCU, it refers to social factors, and in IDT, it refers to image (Venkatesh et al., 2003). It is the extent to which a person believes that significant others think that he/she should be using technology. Further, the subjective norm was identified as a factor according to Sripalawat et al. (2011), Riquelme and Rios (2010), and Puschel et al. (2010), and for customers' willingness to adopt m-banking, the perceived image was the main factor, as noted by Laukkanen (2007).

2.2.4 Facilitating Conditions

It is the extent to which an individual or customer thinks that organizational and technical infrastructure exists to assist technology use (Venkatesh et al., 2003). In the UTAUT model, facilitating conditions and behavioral intention determine adoption behavior. As regards m-banking adoption, Joshua and Koshy (2011) stated that when there is a greater convenience in consumers' access to a computer and the internet, more consumers become skilled in using the same, which translates to a higher adoption rate in e-banking utilization.

In other competing models, facilitation condition is represented as the of perceived behavioral control in TPB, DTPB, C-TAM-TPB, facilitating conditions in MPCU, and compatibility such as work style in IDT.

2.3 Behavioral Intention

It has been tested through UTAUT that behavioral intention has a significant impact on technology use (Venkatesh et al., 2003; Venkatesh & Zhang 2010).

Identification of the determinants influencing continued intention to m-banking usage has been conducted through reliance on a number of theories (Shaikh and Karjaluoto, 2015). Chaouali et al. (2017), Mostafa and Eneizan (2018), and Mutahar et al. (2018) implemented an extended TAM; Chawla and Joshi (2018) extended the TAM and IDT; Lee (2009) integrated the TPB with TAM; Kapoor et al. (2015) embraced IDT; Yu (2012) recognized the UTAUT, and Alalwan et al. (2017) adopted UTAUT2 with trust.

2.4 Moderators: Age and Sex

The impact of demographic profiles on the adoption of technology has been discussed in various studies. In e-banking studies, findings were not consistent when compared with traditional studies on innovation diffusion. In conclusion, younger consumers better-educated, with higher income and social status are technological innovations earlier adopters.

Cruz et al. (2010) reported that younger Brazilian people perceived m-banking usage as less difficult than older people. Puschel et al. (2010) observed that m-banking users were 30 years old or younger. In research by Laforet and Li (2005), m-banking Chinese users were better-educated and young consumers.

In past studies, men have perceived mobile services as more useful than women (Nysveen et al., 2005). Accordingly, Cruz et al. (2010) believed men are more task-ori-

ented; that services in e-banking are usually driven by goal achievement. Hence, several research endeavors have shown the significant difference between male and female respondents in the m- banking context. As per Cruz et al. (2010), women are less worried about internet access, and other related fees than men are in using m-banking services, and opinions of friends have a superior influence on females in m-services (Nysveen et al., 2005). On the other hand, men recognize less risk than women as to make online purchases (Garbarino & Strahilevitz, 2004), and men are more frequent users of m-banking than women (Laukkanen & Pasanen 2008; Koenig-Lewis et al., 2010). In the same vein, findings by Puschel et al. (2010) indicated that Brazilian users of m-banking were principally males. Likewise, Joshua and Koshy (2011) concluded that women might be less likely to use e-banking services based on their 553 surveyed respondents in India. With gender as a moderator variable, Riquelme and Rios (2010) discovered that Singaporean women were strongly impacted by social norms in their adoption intention and perceived ease-of-use and of perceived usefulness.

2.5 Hypothesis Development

This research conceptualized that usage intention of m-banking may be accounted for by some antecedents and weakened or strengthened by some demographic profile like age and sex.

The figure highlights the idea that antecedents, as enumerated below, affect behavioral intention, as proven by past research. Specifically, the UTAUT allowed the researchers to explore the role of moderators to magnify or constraint the effects between core antecedents and behavioral intention. The researchers have chosen the UTAUT as an underlying theoretical foundation as to the development of hypotheses are concerned. Figure 1 shows the connection between two variables, namely: antecedents of mobile banking and behavioral intention. The paradigm illustrates that the four (4) antecedents: performance expectance, effort expectance, social influence, and facilitating conditions may lead to the depositors' behavioral intention to use mobile banking. This relationship will be tested through moderation of age and sex.

H_1: Age does not moderate the antecedents and respondents' intention to use m-banking;

H_2: Sex does not moderate the antecedents and respondents' intention to use m-banking

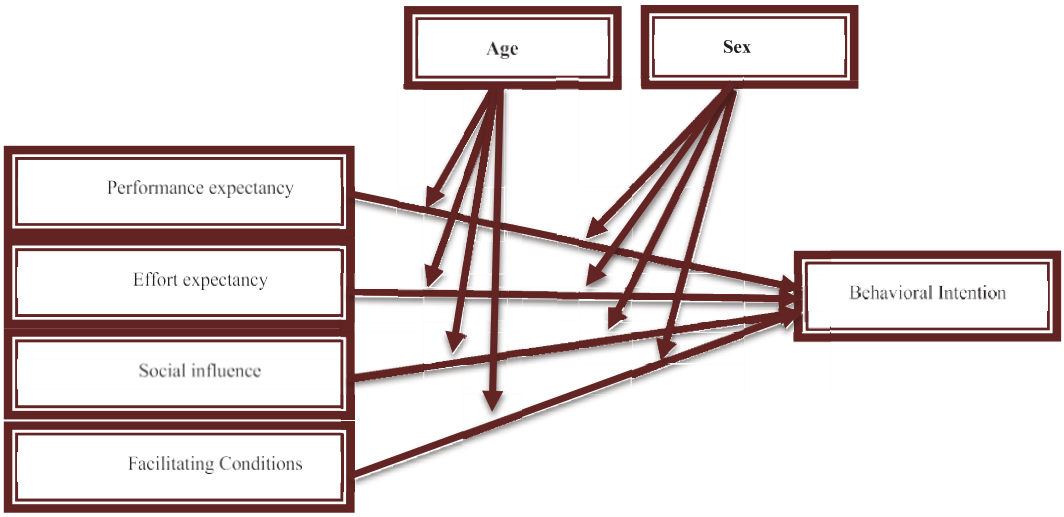

Figure 1: Theoretical Framework based on the UTAUT Model (Source: Authors' Compilation)

3. Methodology

3.1 Measurement

The researchers used a validated questionnaire that measured the (1) m- banking antecedents and (2) behavioral intention, with the use of a 7-point Likert scale. It comprised of eighteen (18) statements focused on m-banking antecedents according to the UTAUT, which gathered data on the stated four (4) components. The instrument from the study of Venkatesh et al. (2003) was fully adopted.

3.2 Respondents

The bank depositors who were already using m-banking services of the BPI in North Pampanga were the respondents of this study. In the North Pampanga area, it has a total of eleven (11) branches where there were 88,449 depositors, with a 64% enrolment rate for the online / m-banking facility, as per the report of BPI Sales and Service Channels Group. This resulted in population size of 56,608.

Three hundred eighty-two (382) depositors were the computed sample based on the

Raosoft formula. The eleven (11) BPI branches were given thirty-five (35) questionnaires which were distributed among their depositors.

3.3 Data Collection and Treatment

The data was collected and computed to come up with accurate analyses and interpretations. For the respondents' profile, frequency and percentage were used; for the antecedents of m- banking and behavioral intention, the mean score was utilized; and bivariate correlation using Pearson's r coefficient was used to correlate antecedents of m-banking and behavioral intention. Meanwhile, the SPSS has been utilized for the moderation of age and sex on the antecedents of m-banking and depositors' behavioral intention.

4. Discussion and Conclusion

4.1. Summary of Respondents' Profile

Table 1: Profile of Respondents

Age	Frequency	Percentage (%)
25 years old and below	153	40
26 to 40 years old	221	57
41 to 55 years old	11	3
	385	100
Sex		
Male	187	49
Female	198	51
	385	100

Source: Researchers' Data

The majority age of respondents was 26 to 40, accounting for fifty-seven percent (57%) of the total no of respondents (f = 221). This age group is most commonly known as the millennials or generation Y. According to Pyoria et al. (2017), this age group was born between 1980 to 1994. While the respondents' profile was relatively equal in terms of sex, fifty-one (51%) are female (f = 198), while male accounts for forty-nine percent (49%) of the total respondents.

Forty percent (40%) of the respondents (f = 153) belong to the age group of 25 years old and below. This age group is most commonly known as generation Z or post-millennials. They were born in 1995 and later (Pyoria et al., 2017).

Lastly, three percent (3%) of the respondents (f = 11) belong to the age group between 1965 to 1979. This age group, according to Pyoria et al. (2017), falls under generation X.

4.2 Description of the Antecedents of Mobile Banking and Behavioral Intention

Table 2: Mobile Banking Antecedents and Behavioral Intention

Variable	Mean	Description
Performance Expectancy	6.38	Agree
Effort Expectancy	6.35	Agree
Social Influence	5.81	Agree
Facilitating Conditions	6.20	Agree
Behavioral Intention	6.43	Agree

Source: Researchers' Data

In general, with m-banking, depositors can check their account balance straight from their mobile phones and transfer money between their personal accounts (e.g., savings account to checking account); depositors can also view the monthly statements for their deposit accounts, credit cards, or loans via mobile banking. In the case of businessmen, they can make payments to third-party entities like their suppliers or creditors without the need to visit a physical branch. Also, mobile banking instantly helps the depositors avoid unauthorized use of debit or credit cards should these get lost or stolen, as depositors can notify the bank and immediately block their cards via the mobile banking platform. Depositors who may have checking accounts can also hold check payments if funds are deemed insufficient or request for a new checkbook if necessary – all with just the use of their mobile phones (Mishu et al., 2019).

Effort expectance is the extent of ease related to the system usage; the easier m-banking becomes, the more likely that customers will use it (or continue using it) (Venkatesh et al., 2003). The result for this antecedent can be attributed to characteristics of the respondents' age group. Notably, 57% of the respondents are aged between 26 to 40. They are most commonly known as the Millennials (or Generation Y). Axten (2015) describes Millennials as affluent in technology (tech-savvy) and are very much able to learn quickly. He further explained that Millennials are very much comfortable in taking advantage of technology which helps them to multitask.

The people surrounding the respondents thought that using mobile banking facilitates a faster banking transaction with their family and friends, particularly fund transfers. Having a mobile banking platform similar to what their families and friends are using would save them from paying service fees. It was further explained by the respondents that using a different mobile banking platform (e.g., BPI to other banks) – not similar to their families and friends – would cost them an average of (additional) P50.00 for each fund transfer. To avoid such service fees, depositors are influenced by their families and friends to use a similar mobile platform (e.g., BPI to BPI) (Iqbal et al., 2021; Khalil et al., 2020).

In terms of bills payment, respondents also explain the importance of having a similar mobile banking platform within a certain household or family in terms of bills payments, such that any member of the family may be able to settle their bills as they become due. Since accredited merchants (credit card companies, utility companies, among others) vary per mobile banking platform, a common mobile banking platform would really help a family transact and settle their bills and utilities immediately.

Lastly, facilitating condition is the extent a person thinks that an organization and technical infrastructure exists to support his/her use (Venkatesh et al., 2003). Normally, a branch opens at 9:00 AM and closes at 4:30 PM; on the other hand, a working parent starts working by 8:00 AM and ends by 5:00 PM. So by the time the branch opens, the working parent is already in the office working, and by the time their work ends, the branch is already closed. Such a scenario makes it hard for the working parents to accomplish their banking transactions via traditional banking (physical branch). Similarly, for call center agents, whose work is normally scheduled graveyard (evening schedule to early morning), it would be impossible for them to go to a physical branch to do their transactions since all banks are closed during the late night to an early morning schedule. As such, it is beneficial for their current work environment to use the services of m-banking.

The significance of usefulness and convenience in the depositors' behavioral intention of using mobile banking was validated when Lin (2013) concluded that m-banking creates customer value due to being inherently free from time and place constraints.

The idea that depositors get to avoid long waiting times because of long queues in their respective branches of accounts plays a great influence as well in their intentions to continuously use mobile banking services; it saves them time to do other essential activities like spend more time with their families and friends, do other important household tasks and accomplishes errands which are part of their normal day to day activity. Subsequently, with the use of m-banking services, respondents get to save on unnecessary transportation costs and avoid heavy traffic situations should they decide not to visit a physical branch to do their banking transactions. Interestingly, in an interview,

some respondents mentioned that they are willing to spend mobile banking service fees ranging from P10.00 to P50.00 per transaction rather than go to a physical branch and be stuck with heavy traffic.

4.3 Relationship of the Antecedents of Mobile Banking to Behavioral Intention

Table 3 shows the correlation of the four (4) antecedents of mobile banking and the behavioral intention of depositors.

From the data, three (3) out of four (4) antecedents of mobile banking, Performance Expectancy (0.030), Social Influence (0.041), and Facilitating Conditions (0.041), were significantly related to behavioral intention. This is because their significance level is below 0.05, which is the standard level for a 2-tailed test. On the other hand, Effort Expectancy did not register a significant relationship with behavioral intention as it rendered a score of 0.670 significant level – higher than the 0.05 standard level.

Table 3: Correlation Results of Antecedents of M-banking to Behavioral Intention

Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.392	0.482		11.197	0.000
	Performance Expectancy	0.104	0.048	0.115	2.176	0.030
	Effort Expectancy	0.021	0.049	0.023	0.427	0.670
	Social Influence	-0.069	0.034	-0.119	-2.048	0.041
	Facilitating Conditions	0.106	0.052	0.121	2.054	0.041

Source: Researchers' Data

Performance Expectancy relates to the behavioral intention, which means that the depositors' use of mobile banking services helps them become more productive and allows them to accomplish things simultaneously and more quickly, like their errands, personal concerns, and other matters altogether without the hassle of going to the physical

bank branch just for any banking-related transactions. With mobile banking services, respondents are enabled to carry out their tasks easier, saving their time to equally important agendas and freeing their schedule to other matters needing their physical presence. These reasons explain why the performance expectancy antecedent of mobile banking correlates to their behavioral intention for continued use of such technology among depositors. As to Social Influence, it may be inferred that those people who are familiar, important, and relevant to the respondents contribute to their intention to continue using mobile banking services. This is because the people that surround them think that they should use m-banking services due to their busy personal and professional schedules. Thus, the use of m-banking will give them more quality time to spend with them, not just on special occasions, but also on ordinary days. On Facilitating Condition, the environment of respondents supports them in their use of mobile banking, such that their profession and work locations are wifi-ready and internet connection is not an issue. Moreover, respondents believed that should they need help from the difficulties using mobile banking services, their officemates or any other people could help them out in troubleshooting technical problems. Thus, there can be no enough reason not to intend in their continued use of mobile banking services. However, they also pointed out that there was a strong correlation between effort expectancy and usage intention, which is contrary to the current undertaking. The current study has the same result as the above-stated study relative to performance expectancy and social influence, while different on effort expectancy and facilitating conditions (Hasan & Zayed, 2018; Hasan et al., 2019; Islam et al., 2019).

4.4 Moderation of the Profile Variables on the Antecedents of Mobile Banking toward Behavioral Intention

Table 4: Moderating Effect of Age on M-banking Antecedents towards Behavioral Intention

		coeff	*se*	*t*	*p*	*LLCI*	*ULCI*
PE and BI	constant	4.6468	1.4036	3.3107	.0010	1.8871	7.4066
	Perf_Ex	.2852	.2202	1.2948	.1962	-.1479	.7182
	Age	.0388	.0484	.8026	.4227	-.0563	.1339
	Int_1	-.0063	.0076	-.8271	.4087	-.0212	.0086

SI and BI	constant	7.6401	.9071	8.4228	.0000	5.8566	9.4236
	Social_i	-.2024	.1537	-1.3167	.1887	-.5047	.0999
	Age	-.0354	.0315	-1.1259	.2609	-.0973	.0264
	Int_1	.0059	.0053	1.1079	.2686	-.0046	.0163
EE and BI	constant	3.5737	1.6063	2.2248	.0267	.4154	6.7320
	Effort_E	.4505	.2496	1.8046	.0719	-.0403	.9414
	Age	.0923	.0557	1.6564	.0985	-.0173	.2018
	Int_1	-.0145	.0086	-1.6820	.0934	-.0315	.0025
FC and BI	constant	10.2733	1.3771	7.4599	.0000	7.5656	12.9810
	FC	-.6249	.2252	-2.7749	.0058	-1.0676	-.1821
	Age	-.1456	.0475	-3.0623	.0024	-.2390	-.0521
	_1	.0237	.0078	3.0487	.0025	.0084	.0390

*Interaction effect is significant (p=.0025) implies that age moderates the effect of Facilitating Condition to Behavioral Intention | ***Source:*** Researchers' Data

It is clearly shown on the table that the moderating effect of age applies only to one (1) of the four (4) antecedents of mobile banking towards behavioral intention. The record shows that age moderates the effect of facilitating condition to behavioral intention, with the interaction at a .0025 significance level. Hence, the other three antecedents (PE, SI, and EE) were not moderated by age since their significance level is lower than .0025, having .4087, .2686, and .0934 interaction levels with behavioral intention, respectively.

The statistical result posits that age influences the strength of the relationship established between FC and BI. It depicts that the age group of 26-40, which comprised 57% of respondents, could have affected the relationship between the degree to which they believe the existence of organizational and technical infrastructure support to use

them-banking services and their decision/intention to continue using the same. This finding implicates that the respondents being part of the young professional's workforce (who are mostly digitally-inclined/ savvy and whose lifestyles are instant and fast-phased) would explain how their living and working conditions, and the help they could get from other people, relate to their behavioral intention of continued use of mobile banking services.

Following the results that age had a moderating effect in one of them- banking antecedents and BI, the first hypothesis *(age does not moderate the antecedents and respondents' behavioral usage intention of m-banking)* is therefore partially rejected for FC and BI.

Table 5: Moderating Effect of Sex on M-banking Antecedents towards Behavioral Intention

		coeff	***se***	***t***	***p***	***LLCI***	***ULCI***
PE and BI	constant	7.5721	.9123	8.3002	.0000	5.7783	9.3658
	_Ex	-.1918	.1429	-1.3420	.1804	-.4727	.0892
	Sex	-1.2232	.5861	-2.0871	.0375	-2.3756	-.0708
	Int_1	.2000	.0916	2.1835	.0296	.0199	.3801
	****Interaction effect is significant (p=.0296) implies that sex moderates the effect of Performance expectance to Behavioral Intention***						
SI and BI	constant	7.2148	.5541	13.0198	.0000	6.1253	8.3044
	Social_i	-.1492	.0943	-1.5825	.1144	-.3345	.0362
	Sex	-.3889	.3472	-1.1202	.2633	-1.0716	.2937
	_1	.0765	.0593	1.2912	.1974	-.0400	.1931

EE and BI	constant	6.6647	.9371	7.1120	.0000	4.8222	8.5073
	Effort_E	-.0507	.1471	-.3451	.7302	-.3399	.2384
	Sex	-.3195	.5968	-.5354	.5927	-1.4929	.8538
	Int_1	.0595	.0937	.6355	.5255	-.1247	.2437
FC and BI	constant	7.8448	.8834	8.8802	.0000	6.1079	9.5818
	FC	-.2470	.1449	-1.7046	.0891	-.5319	.0379
	Sex	-1.1056	.5463	-2.0237	.0437	-2.1799	-.0314
	Int_1	.1914	.0896	2.1365	.0333	.0153	.3675
	***Interaction effect is significant (p=0.0333). Sex moderates the effect of facilitating conditions to behavioral intentions**						

Source: Researchers' Data

In terms of the interaction effect of sex on m-banking antecedents and behavioral intention, the table illustrates that two (2) relationships were moderated at .0296 and .0333 significance levels, respectively, namely: PE and BI; and FC and BI. This is because PE and FC registered a significance level; Thus, SI (.1974) and EE (.5255) towards behavioral intention were not moderated by sex.

With women as the majority of the respondents in this study (198 out of 385 or 51%), strengthens the relationship between the extent to which using m-banking services will give benefits to them in completing specific activities (either personal or professional) and their intent to continuously use m-banking services in the future. As women are characterized as being task-oriented, by the schedules (who lists down errands and activities that needs to be accomplished for the day) and becoming more career-oriented, try to as much as possible balance their personal concerns with professional matters—and that they subscribe to services that help them accomplish things faster vis-à-vis making it easier for them to carry out their tasks simultaneously.

Moreover, there is statistical support that the sex of respondents has an effect on the strength of the relationship established between FC and BI. It depicts that the women respondents could have affected the relationship between the extent to which they

believe the presence of organizational and technical infrastructure assistance to use them-banking services and their decision/intention to continue using the same. This finding implies that the respondents being part of the rising modern women themselves are being as multitasked and multi-faceted as they can be. This would explain how the living and working conditions of women, being busy building their corporate profile as part of the young professional workforce, balancing their personal affairs, would relate to their behavioral intention of continued use of m-banking services, as deemed fit in their way of life at the present times.

Gender as a moderator variable was used by Riquelme and Rios (2010) in their research from 681 respondent-samples in Singapore and discovered that women were strongly impacted by social norms in their adoption intention and perceived ease-of-use and of perceived usefulness than among men. In the same vein, Joshua and Koshy (2011) identified that women were less likely to use e-banking services than men would be based on their collected 553 respondents in India.

Since sex had a moderating effect in two of the mobile banking antecedents and BI, the second hypothesis *(sex does not moderate the antecedents and respondents' behavioral usage intention of m-banking)* is therefore partially rejected for PE and BI; and FC and BI.

4.5 Limitations and Future Research Directions

As this research serves as an initial step in understanding the consumer behavior of mobile banking users in North Pampanga, Philippines, some limitations constrain the researcher from generalizing the findings. However, this study may serve as a relational framework for similar research with variables that could be linked to the concepts of mobile banking antecedents and behavioral intention, among others in different fields. More so, the result of this paper may be valuable before the various industry organizations like the Bankers' Association of the Philippines (BAP) to conduct an overall evaluation of the banks' mobile banking antecedents and behavioral intention on a national scale.

4.6 Implications

The results of this research point out the relevance of the concept of m-banking antecedents on the behavioral intention with the moderating effect of age and sex, thereby underscoring some implications for business managers and marketers.

From a managerial perspective, the management of BPI should recognize the importance of organizational support and technical infrastructure in terms of the depositors' desire to continuously use mobile banking. BPI can foster a stronger alliance with its sister companies under the Ayala Group of Companies. For example, Globe Telecom

Inc is one of the major telecommunication companies in the Philippines. They can come up with programs or projects that will improve the customer experience in mobile banking (e.g., free data usage when mobile banking platforms are used by depositors). Following the statistical result on the moderating effect of age, BPI should take cognizance of the potential of the depositors aged 26-40 years old as the major driver of mobile banking usage, leading to the potential growth of the bank's bottom-line. Also, BPI should take a closer look at the changing characteristics and activities of women. From being a plain homemaker to being an empowered and independent career woman who now excels in juggling personal and professional dealings. As such, BPI can develop campaigns that will incentivize the mobile banking activities of women. These incentives can take the form of merchant discounts or electronic coupons (e.g., in salons, restaurants, boutiques, among others) and rewards programs (e.g., rebates from every banking transaction they perform).

Acronyms Used

BI	-	Behavioral Intention
BPI	-	Bank of the Philippine Islands
BSP	-	Bangko Sentral ng Pilipinas
EE	-	Effort Expectancy
PE	-	Performance Expectancy
TPB	-	Theory of Planned Behavior
TRA	-	Theory of Reasoned Action
SI	-	Social Influence
UTAUT	-	Unified Theory of Acceptance and Use of Technology

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