

Acceptability of Technology for Banking transactions by People above 40 years of Age under Pandemic Constraints

¹Dr. Shruti Nagar, ²Pradnya Mahajan

^{1,2}Faculty, DES's Institute of Management Development and Research, Pune.

Abstract

In this research paper the technology acceptance for banking transactions is with reference to use of mobile banking. An attempt has been made to understand the acceptability of mobile banking by the people who are above the age of 40 years in India. The study aims to know about the perception of people above 40 years of age towards mobile banking considering the factors suggested by Technology Acceptance Model Theory such as ease of use, usefulness and risk associated with technology enabled banking transactions.

The primary data has been collected through a self-administered questionnaire with close ended questions. The respondents were the people of 40 plus age group who started using mobile banking during pandemic constraints like pandemic, when technology emerged as the only option to carry out banking transactions.

The single cross sectional descriptive research design has been used for data analysis cross tabulation, Cronbach's Alpha, Chi-square test and ANOVA and one way MANOVA have been used. It is found that though middle aged and elderly consumers of banking industry have accepted the technological advancement of banking transactions and started using mobile banking but the age has been emerged as strong factor when it comes to perceived usefulness, perceived ease and perceived risk associated with the mobile banking.

Keywords: Mobile Banking, perception, pandemic constraints, forty plus age group people, pandemic, MANOVA.

INTRODUCTION

In the recent times pandemic has affected the life of people across the globe. It impacted social, economic and psychological aspects of life of people. During pandemic people were forced to use technology for social interactions, continuation of education, business and financial transactions. This pandemic has brought in paradigm shift in acceptance to technology by people who otherwise were not familiar use of technology in day to day life.

The pandemic years witnessed extensive use of social media platforms and technology tools for

social interactions as well as for professional networking.

At the same time the use of digital banking and contactless payments accelerated as traditional banking practices and facilities were not available due to intermittent lockdowns pertaining to Covid-19.

The people above forty years of age who were not believed to be very comfortable with use of technology in day to day life have shown their interest to accept mobile banking technology to carry out their banking transactions during pandemic.

In the developmental phase of automation of banking industry mobile banking has brought in drastic changes. The customers are able to check account balances, make transfers, pay bills and buy investment products through mobile banking. The three ways of providing this service to the clients are : Over mobile applications, over SMS and over Unstructured Supplementary Service Data (USSD).

In India in 2002 the Mobile banking started with carrying out transactions through SMS, which has transformed the banking industry, now most of the banking transactions can be performed seamlessly using a computer, laptop or a smart phone. It has commenced as branch of internet banking to complement it by offering more handiness in handling banking transactions. By 2018 most of the Indian banks launched their mobile banking applications. Mobile banking applications have given opportunity to banking customers to carry out their banking transactions by using their mobile phones. It has replaced the laptops / desktops with smart phones for handling online banking transactions. These digital banking and contact less payments catch the speed during Covid -19 pandemic. This pandemic has brought a radical shift in consumer behavior towards mobile banking and the acceptability of technology in managing banking transactions.

REVIEW OF LITERATURE

Technological advancement has streamlined many day-to-day activities. This continuation in technological expansion is occurring alongside the aging of global populations. This is creating opportunities for technology to assist older people in everyday tasks and activities, ranging from investments, financial planning to connecting with friends and family. It is generally believed that the older people are not very comfortable with the use of technology particularly when it comes to using banking applications. It is found that older adults have more negative attitude towards computer technology than younger people (SaraJ, Czaja, Joseph Sharit, 1998). Vaportzis, Clausen and Glow (2017) in their study found

that though older adults are eager to adopt new technology but they voiced apprehension about lack in clarity of instructions and support. Older adults are slower to adopt new technologies than young (Czaja et al..2006) but will do so if those technologies appear to have value, for instance, in maintain their quality of life.

The Center for Research and Education on Aging and Technology Enhancement (CREATE) has studied the use of technology among community-dwelling adults. It is found that older adults (60–91 years) were less likely than younger adults to use technology in general, and specifically computers and the internet. Technology adoption was associated with higher cognitive ability, computer self-efficacy and computer anxiety, whereas higher fluid intelligence and crystallized intelligence predicted the use of technology; higher computer anxiety predicted lower use of technology (Czaja et al., 2006). The previous study indicated that older people (60–75 years) perceived less comfort, efficacy and control over computers relative to younger participants, however, direct experience with computers resulted in more positive attitudes (Czaja and Sharit, 1998). Alvseike and Brønnick (2012) reported that cognitive deficits and low self-efficacy associated with older age significantly reduced participants' ability to use technology. The available literature shows that though older adults are open to using technology but there may be age-related (e.g., cognitive decline) as well as technology-related (e.g., interface usability) barriers.

The concept of middle age is somewhat arbitrary, differing greatly from person to person, it is generally defined as being between the ages of 40 and 60. It is believed that at the age of 40 and above people have accepted their life style and not very much ready to adopt new technological advancement if the application of technology is complex.

The people of 40 age and above, who belong to low income and middle-income groups, always have fear of losing of control of their finances. They prefer to keep a tight hold on their limited financial resources and fear anything that could

adversely affect their financial condition. Therefore, they are considered to be loyal customer of tradition banking services as they have strong faith on paper-based transactions and crave for assurance which a printed receipt can give them. They often prefer the traditional set up of banking transaction as they do not rely on the efficiency and safety of use of technology in financial transactions.

Despite economic and social upheavals which caused temporary closure of banking institutions, there was one positive impact of Covid -19, that it has compelled the banking customers to use technology to carry out banking transactions.

During lockdown the pace and volume of digital payments has geared up, use of mobile banking has been adopted by many customers due to ease of using mobile phone in comparison of using laptops for online banking. The middle-aged person, who used to consider online banking transactions unsafe, had no choice other than using the same technology for carrying on financial transactions. Irrespective of decline in their cognitive capabilities, reluctance to share financial details and apprehension about the efficiency and safety in online banking transactions, the elderly people managed to learn the usage of mobile banking during lockdown phase.

The present study is focused on peoples' above 40 years of age perception towards mobile banking therefore it makes imperative to discuss Technology Acceptance Model (TAM) proposed by Davis (1989). It has been proved very suitable in order to explore users' perception towards mobile banking. TAM is an empirically validated theoretical model which has wide acceptance by researchers for the purpose of elucidation and prediction of users' behavior towards information technology acceptance and use (Legris, et. al, 2003). It also helps to explain why a user may accept or reject information technology (Davis, 1989 and Davis et. al, 1989). The model provides the basis with which one identifies how external variables influence belief, attitude, and intention to use a technology. The two cognitive beliefs considered in this model for

the use of a technology are - perceived usefulness (PU) and perceived ease of use (PEU). The model further implies that these two beliefs influence directly or indirectly the user's attitude (AT) towards the technology and also affects the user's behavioral intention to use (IU) the technology, which also affects the final decision to use or not to use. It is also proposed in this model that external factors/variables influence perceived usefulness and perceived ease of use, and these affect the intention to use and actual usage of the technology (Davis et al., 1989).

Chawla and Joshi (2018) empirically examined the adoption of mobile banking and tested moderating effect of demographic variables using TAM and the Diffusion of Innovation (DOI) Theory to study the influence of these variables on consumer attitude on mobile banking in India. The moderator factors include age, gender, qualification, occupation, income, experience, and marital status.

Cudjoe, Anim and Nyanyofio (2015) focused the Ghana banking industry and examined the mobile banking adoption determinants. They analyzed the variables such as PU, PEOU, awareness, social influence, compatibility perceived credibility perceived financial cost and perceived self-efficacy. They analyzed TAM theoretical framework to investigate research results and unveiled that Ghanaians users have negative behavior pattern to utilized mobile banking service.

Hanafizadeh et al. (2014) studied Iranian clients to identify the key elements that affect them to adopt mobile banking. The study considered the variables such as PU, PEOU, perceived cost, perceived risk, trust and need for interaction, perceived credibility compatibility with lifestyle. The study revealed that all variables successfully described Iranian consumer's behavior especially trusts and lifestyle remain the most significant factors in this study.

RESEARCH GAP AND PROBLEM STATEMENT

The research gap is found when it comes to study the acceptability of technology in the form of mobile banking usage by people above 40 years of age during pandemic years.

Whether age of the person has impact on his perception towards acceptance of technology for banking transactions or not?

OBJECTIVES OF THE STUDY

1. To recognize the perception of the people above forty years of age using mobile banking based on perceived ease of use, perceived usefulness of mobile banking after lockdown period pertaining to pandemic.
2. To check whether perception of people above 40 years of age towards mobile banking differ with reference to demographics.

RESEARCH METHODOLOGY

The present study is a descriptive type of research. The sources of data used for the study includes both primary as well as secondary sources. The self-administered and well-structured questionnaire with close ended questions has been designed, in order to conduct online survey. The questionnaire comprised of five sections: demographic profile, use of technology, purpose of using mobile banking, perceived usefulness of mobile banking, perceived ease and risk associated in mobile banking, attitude of the users and the intention to use mobile banking in future. The present study adopted the scales developed and used in Technology Acceptance Model (TAM) proposed by Davis (1989) with some of the required modifications. The data has been collected from 69 respondents located in Pune district of Maharashtra, India. A convenience sampling has been used initially and later on snow ball sampling has been used. The respondents were the people from Pune district who have used mobile banking services during lockdown period and who are between the age group of 40- 80 years.

The Five Point as well as Seven Point Likert-type scale has been used to identify perception of the respondents. For data analysis cross tabulation, Cronbach's Alpha, Chi-square test and one way MANOVA have been used.

The present study is limited to perception of the people above 40 years of age (40-80 years of age) using of mobile banking from Pune Maharashtra with special reference to the use of these services during COVID-19 pandemic situation.

DATA ANALYSIS AND INTERPRETATION

Reliability Analysis

Reliability Analysis refers to the fact that a scale should consistently reflect the construct it is measuring. In this study Cronbach's Alpha has been used to check the relationship between each of the constructs in the scale and main dimension. As a rule 0.70 or more represent satisfactory reliability of the items measured.

Reliability analysis for the following variables:

Table. No.1 Reliability Statistics

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Perceived Usefulness	.854	.870	3
Perceived Ease of use	.796	.797	4
Perceived Risk	.908	.908	5
Attitude	.752	.760	5
Purpose of using mobile banking frequently	.841	.843	4

The value of Cronbach's Alpha (Table No.1) are above .70 which indicates that all the

constructs considered under the given dimensions are statistically reliable and valid.

Descriptive Analysis

. The data analysis has been done section wise.

Demographic Profile:

The data has been collected from 69 respondents from Pune , Maharashtra who are above the age of 40 years and below 80 years. The majority of them have used mobile banking for all banking transactions exclusively for the first time during Covid-19 pandemic lockdown phase.

Table No.2 Respondents' Profile

	Category	Frequency	Percentage
Gender			
	Male	42	61%
	Female	27	39%
	Total	69	100%
Age			
	40- 50 years	22	32%
	51-60 years	27	39%
	61-70 years	11	16%
	71 -80 years	9	13%
	Total	69	100%
Educational Qualification			
	Undergraduate	1	1%
	Graduate	19	28%
	Post Graduate	46	67%
	Others	3	4%
	Total	69	100%

The Table No.2 shows the profile of the respondents. Accordingly, the ratio of the male and female respondents reveals that the male users of mobile banking are 1.5 times of the female users. Since, the majority of the respondents are post graduates; it is observed that due to the education the awareness and acceptance towards use of technology has been augmented.

It is found that majority 65% of the respondents are using UPI Payment /Google pay /similar platform as well as mobile banking. It has been found that the respondents who have been

using mobile banking for 1-2 years and 2- 3 years have same frequency i.e 25% respectively. It implies that mobile banking has been used by the respondents for quite a good time but it was being used as the combination with the traditional banking. It has been observed that 79 % of the respondents have started using mobile banking as an exclusive solution for banking transactions, for the first time during Covid-19 lockdown after having restrictions on mobility pertaining to Covid-19.

The 50 % of the respondents have intermediate level of expertise in using internet based services whereas 55% have intermediate level of expertise in using mobile application based services.

With the help of cross tabulation an attempt has been made to understand the relationship among age , education and gender with the expertise level of using mobile application. It is found that 32 % of the respondents said that they have advanced level of expertise in mobile banking, out of that majority 77% were below 60 years of age, those who are beginners consists of 67% who are above 61 years of age. It is found that 55% of the respondents have said that they have intermediate level of expertise in using mobile based applications, out of which 71% of the respondents are post graduates. The male respondents are found to be comparatively more familiar with the use of mobile application based services. The majority of the male respondents who claim to have advanced level of expertise in using mobile application are 68%, and those who have intermediate level of expertise are 58%.This proves, the level of acceptance of technology is more evident in case of male users than female users.

Use of Mobile banking

An enquiry has been made about the purpose and the frequency of using mobile banking for the same. It is found that majority 48% of the respondents always use mobile banking for banking transactions such as fund transfer and bill payments, followed by those who always use mobile banking application to access bank account information such as Account

Statement, Credit card statement, transaction history etc. Only 29% of the respondents sometimes use mobile banking for making investments such as fixed deposits, recurring deposits, mutual funds etc. It was found that 42% have said that they are very good in using mobile banking apps, 36% of the respondents have learned and now they are able to use mobile apps comfortably. Those who always need help for transactions are above the age of 71 years. It is worth mentioning that 28 % of the respondents who are above 60 years of age have learned to do transactions and can do now independently.

Perceived Usefulness of Mobile Banking

The perceived usefulness of the mobile banking by the users of the mobile banking who are above 40 years of age have been identified with the help of Seven point Likert scale. The majority 60% of the respondents were strongly agreed that mobile banking enables to undertake banking activities quickly, whereas mean score of 6.02 has validated somewhat agreement of the majority with the statement. The majority 58% of the respondents have shown their strong agreement to the statement which says that mobile banking gives greater control over financial activities without even stepping out of the home. The mean score 6 has validated the agreement up to somewhat level. The majority 65% of the respondents were strongly agreed that they can access the bank account 24 X 7 from anywhere. The mean score 6.7 has validated the statement.

Perceived ease of using mobile banking

The perceived ease of using mobile banking has been identified by designing four constructs and assessed with the help of Seven point Likert scale. Majority (29%) of the respondents were agreed to the statement that sometimes they seek help to use some of the features of mobile banking whereas 26% were somewhat agreed to the same. Majority 55% of the respondents were strongly agreed that they have to juggle with the different passwords, whereas 23% of the respondents have shown their somewhat agreement. Majority (74%) of the respondents have shown their strong

agreement to the statement that sometimes it is frustrating to remember access code every time we do transactions. The mean score of 5 for all three constructs has been revealing the agreement of the majority of the respondents to the given statements.

Perceived risk in mobile banking

The perceived risks in mobile banking from customer's point of view has been identified by designing five constructs and assessed with the help of seven point Likert scale. Majority (32%) of respondents are strongly agreed and 28% are somewhat agreed that they have fear of leakage of their transactional details during message passing after any banking transaction. Majority (31%) of the respondents are strongly agreed and 22 % are somewhat agreed that message updates regarding account balance can be accessed by others, as their phone is sometimes used by others. Majorities (75%) of the respondents have fear of losing mobile phone and they strongly agreed that if the mobile phone is stolen then all banking details will be at risk. The majority (72%) of the respondents have shown their agreement that they are afraid if someone else will transact on my behalf by using my phone. Majority (68%) of the respondents have somewhat agreement that they have fear of hackers and phishing attacks. The mean score of 5 for first four constructs validated the somewhat degree of the agreement whereas mean score of 6 in case of fear of hackers and phishing attacks has validated the degree of the agreement.

Attitude towards using mobile banking technology

The attitude of the users of mobile banking who are above 40 years of age have been recognized through five constructs and assessed with the help of Seven point Likert scale with the corresponding scores ranging from Strongly Agree (7) to Strongly Disagree (1). Majority (91%) of the respondents will be strongly agreed to recommend mobile banking to others. Majority (55%) are strongly agreed and 32% are somewhat agreed that mobile banking has emerged as boon during the Covid-19 pandemic lockdown phase. Majority (70%) of

the respondents believed that mobile banking will soon replace traditional banking activities.

Majority (78%) of the respondents are in agreement with the statement that mobile banking application is really complex in nature to be understood by the older adults. Majority (90%) of the respondents were strongly agreed that bankers need to provide training to senior citizens for using mobile banking application. The training will undoubtedly help the older adults to accept the technology without much apprehensions and it will make their life easy socially, psychologically and financially.

Inferential statistics

There is further exploration among some selected variables to know about the association among them. Based on sample size and type of data, the non-parametric test Chi-Square test has been used with the help of SPSS 26.0, at 5% level of significance and 95% level of confidence. The following hypotheses have been tested with the help of Chi-square test.

H₀ = There is no relationship between gender and the level of expertise in using mobile application based services.

The Pearson Chi-square Sig. Value (0.690) > 0.05, hence null hypothesis is accepted. It implies that there is no significant relationship between gender and the level of expertise in using mobile applications based services.

H₀ = There is no relationship between gender and managing the transactions through mobile banking application.

In case of the above hypothesis, an assumption of expected count is violated in this case, therefore Likelihood Ratio will be considered. The Sig. Value (0.887) > 0.05, hence null hypothesis is accepted. It implies that there is no significant relationship between the ability to manage transactions through mobile banking application.

An attempt has been made to understand if there is statistically significant difference in the perception of middle aged users of mobile banking based on their age group. Therefore one independent variable "Age" has been analyzed in relation with the dependent variables, namely, - duration of using mobile banking, seeking help to understand some features in mobile banking application, Need to have simple designing of application, Bank account information may be accessed by others, Banking transaction can be done by others, Emergence of mobile banking as boon during Covid-19 lockdown, Complex for senior citizens, Juggling with passwords, fear of leakage of confidential information, Monthly expenses on mobile internet usage, ability to manage mobile transactions on their own.

The one way MANOVA has been used with the help of SPSS 26. There is one independent variable i.e Age and aforesaid eleven dependent variables which signify the perception of the people above 40 years of age users towards mobile banking.

H₀ = There is no statistically significant difference in the perception of users of mobile banking technology based on their age group.

Table No.3

Multivariate Tests ^a							
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.992	626.202 ^b	11.000	55.000	.000	.992
	Wilks' Lambda	.008	626.202 ^b	11.000	55.000	.000	.992
	Hotelling's Trace	125.240	626.202 ^b	11.000	55.000	.000	.992
	Roy's Largest Root	125.240	626.202 ^b	11.000	55.000	.000	.992
Age	Pillai's Trace	.959	2.435	33.000	171.000	.000	.320
	Wilks' Lambda	.296	2.526	33.000	162.744	.000	.334

Hotelling's Trace	1.602	2.606	33.000	161.000	.000	.348
Roy's Largest Root	.974	5.046 ^c	11.000	57.000	.000	.493
a. Design: Intercept + age						
b. Exact statistic						
c. The statistic is an upper bound on F that yields a lower bound on the significance level.						

Table No.4 Levene's Test of Equality of Error Variances^a

Use of mobile banking	Based on Mean	2.104	3	65	.108
	Based on Median	1.475	3	65	.230
	Based on Median and with adjusted df	1.475	3	61.319	.230
	Based on trimmed mean	2.090	3	65	.110
Seek help to understand some features	Based on Mean	.512	3	65	.676
	Based on Median	.394	3	65	.757
	Based on Median and with adjusted df	.394	3	57.838	.758
	Based on trimmed mean	.505	3	65	.680
Should be designed in simpler way	Based on Mean	3.615	3	65	.018
	Based on Median	1.646	3	65	.187
	Based on Median and with adjusted df	1.646	3	43.154	.193
	Based on trimmed mean	2.699	3	65	.053
Bank account accessed by others	Based on Mean	4.671	3	65	.005
	Based on Median	1.592	3	65	.200
	Based on Median and with adjusted df	1.592	3	51.548	.203
	Based on trimmed mean	4.229	3	65	.009
Others may transact on clients behalf	Based on Mean	3.626	3	65	.017
	Based on Median	1.445	3	65	.238
	Based on Median and with adjusted df	1.445	3	54.907	.240
	Based on trimmed mean	3.245	3	65	.027
Mobile banking emerged as boon during lockdown	Based on Mean	2.531	3	65	.065
	Based on Median	1.731	3	65	.169
	Based on Median and with adjusted df	1.731	3	55.498	.171
	Based on trimmed mean	2.740	3	65	.050
Complex for Senior citizens	Based on Mean	1.861	3	65	.145
	Based on Median	.706	3	65	.552
	Based on Median and with adjusted df	.706	3	47.976	.553
	Based on trimmed mean	1.506	3	65	.221
Juggle with passwords	Based on Mean	1.156	3	65	.333
	Based on Median	.471	3	65	.704
	Based on Median and with adjusted df	.471	3	57.577	.704
	Based on trimmed mean	.928	3	65	.432
Information Leakage	Based on Mean	5.581	3	65	.002
	Based on Median	2.938	3	65	.040
	Based on Median and with adjusted df	2.938	3	51.396	.042
	Based on trimmed mean	5.164	3	65	.003
Mobile Expenses	Based on Mean	2.075	3	65	.112

	Based on Median	2.052	3	65	.115
	Based on Median and with adjusted df	2.052	3	59.617	.116
	Based on trimmed mean	2.194	3	65	.097
Managing Mobile banking transactions	Based on Mean	3.681	3	65	.016
	Based on Median	1.219	3	65	.310
	Based on Median and with adjusted df	1.219	3	58.112	.311
	Based on trimmed mean	3.537	3	65	.019

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + age

The Box's Test of Equality of Covariance Matrices, shows the Sig. Value $.224 > 0.05$ which signifies the covariance matrices are equal for the groups. In the multivariate test (Table No. 3), it is found that Wilks' Lambda, $F = 2.526$, Sig. Value $p(0.000) < 0.05$. It implies that there is a significant difference in the perception of the people above 40 years of age users towards mobile banking based on their age groups.

The Levene's test (as p values for all dependent variables > 0.05) (Table No.4), also validates the statistically significant difference in the perception of the users towards mobile banking based on age groups. It considered and validated each of the dependent variables.

FINDINGS

It is found that the people above 50 years of age mostly seek the help of others to understand some of the features mobile banking applications. They have fear of bank account details to be accessed by others, this fear is more prevalent in case of people who are above 70 years of age as they generally need assistance of others to operate mobile banking application. As the mobile phones are accessible to others therefore the fear that others may transact on behalf of the customer is very common among all concerned age groups.

It has been acknowledged by majority of the users that mobile banking has emerged as boon during the Covid-19 lockdown phase in India as it made banking transaction so convenient without stepping out of the house. The people above 50 years of age have been found juggling with the passwords, whereas people between

the age group of 60-70 are more concerned about leakage of bank account information because the bank account balance and transaction details are available in their phones which can be assessed by others. When it comes to managing mobile banking transactions, it is found that people from 40 years to 70 years have attempted to learn the operations of mobile banking application but the people above 70 years of age still need help of others to do mobile banking transactions

Conclusion

One of the beneficial side effects of COVID-19 was acceleration in the consumer behavior towards digital transactions. When it comes to seniors using technology, the hesitance to adopt may not necessarily be attributed to device comfort or inability to grasp technology. Other factors like perceived risk trust in the technology, inertia to make the change also play a role. Though, it is appreciable that people above 40 years of age banking customers have taken an initiative to adopt the new wave of financial digitalization but with apprehension. It would be advisable for banking institutions to understand the concerns of this people above 40 years of age population who actually need hassle free banking services but due to lack of familiarization with the use of technology in financial matters they so diffident to shift from traditional banking and mobile banking. A well structured awareness and training program for this focused group can help our country to achieve the goal of financial digitalization in its true sense.

References

- [1] Al-Jabri, I. M., & Sohail, M. S. (2012). Mobile Banking Adoption: Application of Diffusion of Innovation Theory. *Journal of Electronic Commerce Research*, 13(4), 379–391.
- [2] Alvseike, H., and Brønnick, K. (2012). Feasibility of the iPad as a hub for smart house technology in the elderly; Effects of cognition, self-efficacy, and technology experience. *J. Multidiscip. Healthc.* 5, 299–306. doi: 10.2147/JMDH.S35344
- [3] Amin, H., Baba, R., & Muhammad, M. Z. (2007). An analysis of mobile banking acceptance by Malaysian customers. *Sunway academic journal*, 4, 1-12.
- [4] Chawla, D. & H. Joshi (2018) The Moderating Effect of Demographic Variables on Mobile Banking 38 *Novel Approach: Testing and Computing Periodicity of Continuous Time Signal Adoption: An Empirical Investigation. Global Business Review*, 19, S90-S113.
- [5] Chitungo, S. K., & Munongo, S. (2013). Extending the Technology Acceptance Model to Mobile Banking Adoption in Rural Zimbabwe. *Journal of Business Administration and Education*, 3(1), 51–79.
- [6] Choudrie, J., C.-O. Junior, B. McKenna & S. Richter (2017) Understanding and Conceptualising the Adoption, Use and Diffusion of Mobile Banking in Older Adults: A Research Agenda and Conceptual Framework. *Journal of Business Research*.
- [7] Crabbe, M., C. Standing, S. Standing & H. Karjaluoto (2009) An adoption model for mobile banking in Ghana. *International Journal of Mobile Communications*, 7, 515-543.
- [8] Cruz, P., Neto, L. B. F., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking rollout in emerging markets: evidence from Brazil. *International Journal of Bank Marketing*, 28(5), 342–371.
- [9] Cudjoe, A. G., P. A. Anim & J. G. N. T. Nyanyofio (2015) Determinants of mobile banking adoption in the Ghanaian banking industry: a case of access bank Ghana limited. *Journal of Computer and Communications*, 3, 1.
- [10] Czaja, S. J., and Sharit, J. (1998). Age differences in attitudes toward computers. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 53, P329–P340. doi: 10.1093/geronb/53B.5.P329
- [11] Czaja, S. J., Charness, N., Fisk, A. D., Hertzog, C., Nair, S. N., Rogers, W. A., et al. (2006). Factors predicting the use of technology: findings from the Center for Research and Education on Aging and Technology Enhancement (CREATE). *Psychol. Aging* 21, 333–352. doi: 10.1037/0882-7974.21.2.333
- [12] Dasgupta, S., Paul, R., & Fuloria, S. (2011). Factors Affecting Behavioral Intentions towards Mobile Banking Usage: Empirical Evidence from India. *Romanian Journal of Marketing*, 3(1), 6–28.
- [13] Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319–340.
- [14] Dzogbenuku, R. K. (2013). Banking Innovation in Ghana: Insight of Student's Adoption and Diffusion. *Journal of Internet Banking and Commerce*, 18(3), 1–21.
- [15] Hanafizadeh, P., M. Behboudi, A. A. Koshksaray & M. J. S. Tabar (2014) Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31, 62-78.
- [16] Indrastra Global (2020), During Pandemic Digital Banking and Contactless Payments Surges in India, During Pandemic Digital Banking and Contactless Payments Surges in India (indrastra.com)
- [17] Morris, M. E. (2013). Smart-home technologies to assist older people to live well at home. *J. Aging Sci.* 1:100101. doi: 10.4172/2329-8847.1000101
- [18] No longer just for the young: 70% of seniors are now online, <https://www.weforum.org/agenda/2019/07/no-longer-just-for-the-young-70-of-seniors-are-now-online/> retrieved on February 27, 2021.
- [19] Vaportzis, E., Martin, M., and Gow, A. J. (2017). A Tablet for healthy ageing: the effect of a tablet computer training intervention on cognitive abilities in older adults. *Am. J. Geriatr. Psychiatry.* 25, 841–885. doi: 10.1016/j.jagp.2016.11.015