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### A Study on Familiarizing Internet Banking Amongst Senior Citizens in Pathanamthitta, Kerala - An Investigation

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#### ABSTRACT

Internet Banking came to India more than two decades ago, yet the present senior citizens have still not accepted this platform due to various reasons. This study aims at studying various factors involved in preparing the senior citizens into using internet banking, by forming it's foundation on James Duesenberry's 'Demonstration' theory. A survey was conducted among 384 respondents in Pathanamthitta, Kerala. The study used Pearson's chi-square test to analyse demographic variables and linear regression to analyse inferential variables. The study focused on the untapped online banking benefits that senior citizens could avail. The preferences, present computer knowledge and the myth that elders are computer averse were tested in this study. The study concluded that knowledge source is an important factor that decided the usage of internet banking by senior citizens. If appropriate learning techniques are used, India would not be far behind in calling herself a 'digitally inclusive' country.

**Keywords:** Demonstration effect, Baby boomers, Banking technology, Adoption.

#### 1. INTRODUCTION

According to the 'State of the Urban Youth, India 2012: Employment, Livelihoods, Skills,' a report published by IRIS Knowledge Foundation in collaboration with UN-HABITAT, every third person in an Indian city today is a youth and India is set to be the youngest country by 2020, with 64 per cent of its population in the working age group. On the contrary, this study aims to study the aging minority population

of the country. A report released by the Ministry of Statistics noted that Kerala has the highest number of senior citizens (12.5% of the total senior citizen Indian population). Within Kerala, the Directorate of Census made a point that Pathanamthitta district recorded a negative population growth at minus 3.12%. Moreover, Pathanamthitta had highest number of elderly population compared to other districts in Kerala (14.62%).

The study was focused on the population age range between 60 and 100 years of age of the respondents. These were respondents who were born between 1906 and 1956. They were born before industrial revolution and after the birth of ICT (Information and Communication Technology) Revolution. This is the generation that faced technology unemployment in 1950's. There was a resistance to introduce ICT (Information and Communication Technology) in India stating that all the present processes were labour intensive and not technology intensive one. This generation are now the senior and account for 8% of the total population of India, as per 2011 Census.

James Duesenberry, an economist coined the term Demonstration Effect, which stated that an individual's level of income is not the only factor to measure consumption, but moreover, it was the difference between his income and an acquaintance's highest consumption level, with whom the individual interacted. In other words, individuals tend to replicate the behavior or actions of others in their daily transactions. This effect was put into practice by Marketers and they found success in brining modernization into backward areas. A small reference of this effect was seen in India, when customers bought television or other electronic items, the shopkeeper would send home a representative to give a demo. The aim of sending this representative was to familiarize the family with all the functions and features that this electronic item would do. This would create a lasting impression, on the family towards the usage of such a device. After 2000, such demonstrations came down since there was ample of resources available through the internet, in order to make such electronic item's functions familiar to the masses.

Kerala has got 37 branches per lakh household as per [community.data.gov.in](http://community.data.gov.in) and is well banked. Karnataka and Haryana are other two states which are closer to this rate. As of March 2009, there were 275 commercial bank branches in Pathanamthitta, out of which 155 were public sector bank branches, as per Reserve Bank of India. The reason why this study focuses on public sector banks is because of the fact that all the new private sector banks were opened after 1993. The older private banks were not nationalized in 1980 since these were small in size and operation and were region based and not nationwide. Out of 27 public sector banks in India, 26 are in Kerala and hence the study has covered a representative size of the entire senior citizen population.

## **2. OBJECTIVES OF THE STUDY**

- (i) To assess the attitude of senior citizens on internet banking
- (ii) To understand the influence of demonstration effect on senior citizen's internet banking
- (iii) To know the various negative factors driven out by Demonstration effect and various supporting factors that could help in familiarizing internet banking among senior citizens

## **3. REVIEW OF LITERATURE**

Grigoryeva et. al., (2014) mentions about the imminent need to introduce ICT (Information and Communication Technology) among senior citizens in Russia. Kossecki et. al., (2014) points out that highly

aging population of the world in Europe had not grown up with the internet society and hence he describes it as a demographic problem. Various studies have analysed the various triggers that make senior citizens to adapt internet banking. One such study in Sweden, by Jessica Berner et. al., (2014) was of the view that senior citizens were found to learn more about internet technology if they stay with someone else who is also interested in the same. As nuclear families started to grow, this possibility gets slightly dimmer. On the other hand, senior citizens were found to be promoting Gerascophobia, which wanes off their interest to study such digital platforms as per a cross country study by Lissitsa and Chachashvili (2015). These elder citizens were not found to be investing their hard earned money or pension towards getting trained in Internet banking or other allied things according to Gergi and Hou (2015). In this context, Fredy and Torres (2015)'s study revealed that elders placed the thrust of getting trained on banks themselves.

Lewis (2015) stated that senior citizens primarily need to be made to value the use of such a facility, since they appreciate things that come in handy. Camarinha et. al., (2014) focuses on bringing multiple stakeholders in order to assist senior citizens and the author terms it as Ambient Assisting Living. The study advocates the need for having an eco-system. Burmeister (2016) comes with a solution pointing at the need to conduct peer training amongst community dwelling senior citizens so that they may feel at ease to learn new technology and also teach the senior citizens as per their technology need. Fink and Beck (2015) denotes that it is the website that caters internet banking that must provide interactive platforms so that senior citizens does not need other's support. In parts of Somalia, awareness was spearheaded through religious heads noted Ambachew et. al., (2016).

The research gap identified was that all the studies done so far had concentrated on providing observations or self styled solutions to this problem, but this study tends to use a theory from Economics to explain the effect it would have on teaching internet banking to senior citizens.

#### 4. RESEARCH METHODOLOGY

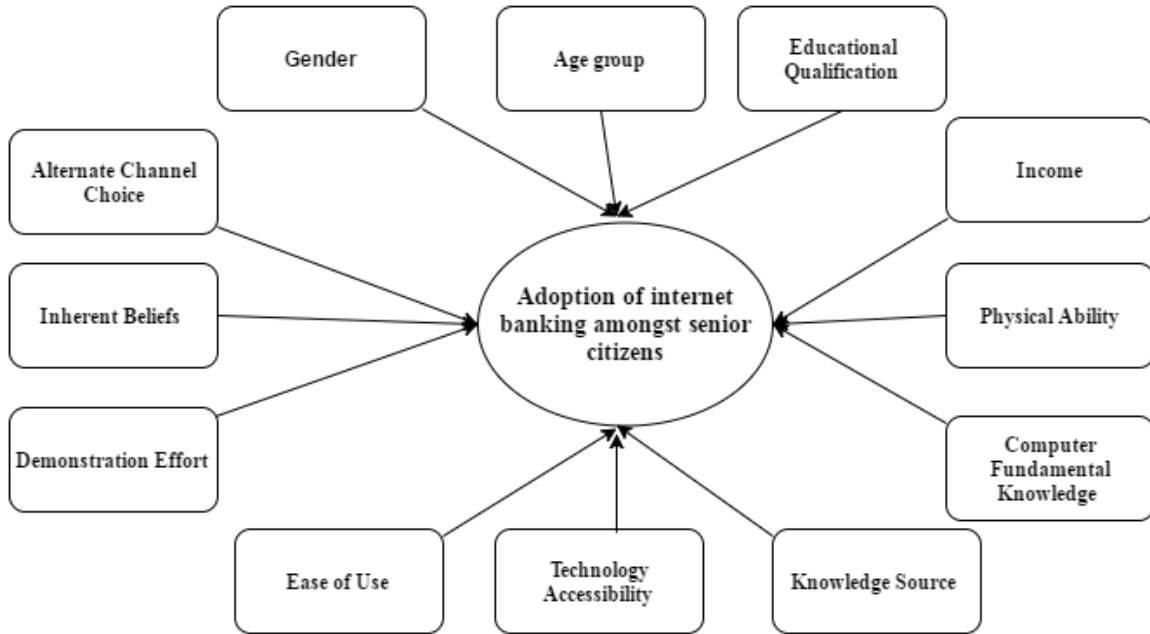
Senior citizens between the age range of 60 and 100 were taken as sample. The study was conducted in various taluks of Pathanamthitta, Kerala. A pilot study was done using 10 respondents. Later, after a correction of the questionnaire, convenience sampling was used to distribute the questionnaire via enumerators, among 384 respondents. The sample size was derived out of a finite population using Krejcie and Morgan (1970) formula:

$$S = \frac{[X^2NP (1 - P)]}{[d^2(N - 1) + X^2P (1 - P)]}$$

The data collected was tested for reliability using Cronbach's Alpha. The model used for this study focused on the below given variables which testifies the need for demonstration effect to familiarize internet banking amongst senior citizens in public sector banks:

The variables used for this study were:

- (a) **Gender (GR):** This was analysed to see if senior citizens across gender differed on their opinions about the current scenario of familiarity they have with using, accessing and knowing internet banking
- (b) **Age group (AG):** This was analysed to see if senior citizens across age groups differed on their opinions about the current scenario of familiarity they have with using, accessing and knowing internet banking



**Figure 1: Model assessing the impact of Demonstration effect amongst Senior Citizens for familiarizing internet banking in Public Sector Banks**

- (c) **Educational Qualification (ED):** This was analysed to see if senior citizens across various educational qualification differed on their opinions about the current scenario of familiarity they have with using, accessing and knowing internet banking
- (d) **Income (IN):** This was analysed to see if senior citizens across various income groups differed on their opinions about the current scenario of familiarity they have with using, accessing and knowing internet banking
- (e) **Physical Ability (PA):** This was used to analyse if physical disability would prompt them to use internet banking more than ever before
- (f) **Computer Fundamental Knowledge (CFK):** This was used to analyse if senior citizens had any fundamental knowledge about computers and how it helped them access or like internet banking
- (g) **Knowledge Source (KS):** This was used to analyse if senior citizens could point out the source through which they could get knowledge about using internet banking
- (h) **Technology Accessibility (TA):** This was used to analyse if senior citizens could access internet banking at the comfort of their homes or had to seek other sources to access the same
- (i) **Ease of Use (EOU):** This was analysed to see if senior citizens could operate internet banking on their own or they needed the support of others to do so
- (j) **Demonstration Effort (DE):** This was analysed to see as to how much of effort Public sector banks had put in the form of demonstrating the usage of internet banking amongst senior citizens
- (k) **Inherent Beliefs (IB):** This was analysed to see if senior citizen's inherent beliefs about technology affected the usage or not

- (l) **Alternate Channel Choice (ACC):** This was analysed to see if senior citizens would opt for internet banking or not, if demonstration effort was actualized by public sector banks

A five point likert scale was used to complete the questionnaire. Demographic variables were analysed using Pearson’s Chi-Square Test and inferential variables were analysed using Linear Regression.

## 5. RESULTS AND DISCUSSION

- (a) *Data Reliability:* High reliability of 0.857 was found when the data was tested using Cronbach’s Alpha.

**Table 1**  
**Reliability Statistics**

<i>Cronbach’s Alpha</i>	<i>N of Items</i>
0.857	12

- (b) *Descriptive Analysis:* Taking the majority into consideration in each demographic factor, male respondents were 46% compared to female respondents. 48% of the respondents were those who completed their education up to 10<sup>th</sup> Std. 36% of the respondents had an income of upto ₹5,000.
- (c) *Inferential Analysis:*

### (i) Demographic Variables of the Respondents

Four independent variables were related with internet banking factors using Pearson’s chi-square to identify the association. The results were illustrated in Table 2.

All the variables had no significant relationship with gender ( $p > 0.05$ ), hence null hypotheses were accepted. From Table 1.2, it was inferred that there is no significant relationship between demographic variables of respondents and usage of internet banking. All the senior citizens, irrespective of their socioeconomic status had equal opinion on computer fundamental knowledge, technology accessibility, ease of use, inherent belief and alternate channel choice.

**Table 2**  
**Relationship of demographic statuses of respondents with internet banking factors using Pearson’s chi-square**

<i>Independent variables</i>	<i>Dependent variables</i>	<i>Value</i>	<i>df</i>	<i>Asymp. Sig. (2-sided)</i>
Gender	Computer fundamental knowledge	3.425	4	0.489
	Ease of use	2.338	4	0.674
	Technology accessibility	2.107	4	0.716
	Inherent belief	2.729	4	0.604
	Alternate channel choice	6.143	4	0.189
Age group	Computer fundamental knowledge	11.799	12	0.462
	Ease of use	12.508	12	0.406
	Technology accessibility	12.963	12	0.372
	Inherent belief	11.223	12	0.510
	Alternate channel choice	10.554	12	0.567

<i>Independent variables</i>	<i>Dependent variables</i>	<i>Value</i>	<i>df</i>	<i>Asymp. Sig. (2-sided)</i>
Educational qualification	Computer fundamental knowledge	15.948	16	0.457
	Ease of use	15.825	16	0.465
	Technology accessibility	13.068	16	0.668
	Inherent belief	22.581	16	0.125
	Alternate channel choice	13.800	16	0.614
Income	Technology accessibility	14.757	16	0.543
	Alternate channel choice	9.961	16	0.869

### (ii) Inferential Variables of the Respondents

Seven independent variables were related with internet banking factors using Linear regression to measure the relationship that it had with other variables. The results were illustrated in Table 1.3.

**Table 3**  
**Relationship of individual internet banking factor with other internet banking factors using Linear Regression**

<i>Dependent Variables</i>	<i>Independent Variables</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>T</i>	<i>Sig.</i>
		<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
Physical Ability	Technology Accessibility	0.148	0.014	0.930	10.520	0.000
	Alternate Channel Choice	-0.091	0.013	-0.611	-6.908	0.000
Computer Fundamental Knowledge	Ease of Use	0.054	0.067	0.071	0.814	0.416
	Inherent Belief	0.317	0.068	0.410	4.633	0.000
Knowledge Source	Alternate Channel Choice	0.340	0.030	0.489	11.460	0.000
	Demonstration Effort	1.104	0.031	0.878	35.838	0.000
Technology Accessibility	Ease of Use	-0.050	0.112	-0.049	-0.445	0.656
	Demonstration Effort	-0.199	0.072	-0.169	-2.746	0.006
	Inherent Belief	1.037	0.110	0.998	9.404	0.000
	Alternate Channel Choice	0.135	0.054	0.145	2.497	0.013
Ease of Use	Inherent Belief	0.904	0.025	0.887	36.475	0.000
	Alternate Channel Choice	0.094	0.022	0.103	4.236	0.000
Demonstration Effort	Inherent Belief	0.334	0.043	0.378	7.692	0.000
	Alternate Channel Choice	0.311	0.039	0.392	7.888	0.000
	Computer Fundamental Knowledge	0.230	0.060	0.201	3.855	0.000
Inherent Belief	Alternate Channel Choice	.830	0.017	0.925	47.650	0.000

#### (a) Physical ability to technology accessibility and alternate channel choice

**H<sub>0</sub>1:** Physical ability has no significant relationship with technology accessibility and alternate channel choice

From the above Table 1.3, it was observed that technology accessibility and alternate channel choice had significant relationship with physical ability. H<sub>0</sub>1 was rejected. It was inferred that old age is contained with apprehensions about physical ability to do tasks. Such apprehensions influence senior citizens to opt for internet banking.

(b) **Computer fundamental knowledge to ease of use, inherent belief and alternate channel choice**

**H<sub>0</sub>2:** Computer fundamental knowledge has no significant relationship with ease of use, inherent belief and alternate channel choice

From the above Table 1.3, it was observed that apart from ease of use ( $p > 0.05$ ), other variables had significant relationship with computer fundamental knowledge. H<sub>0</sub>1 was partially accepted and rejected. It was inferred that in order to gain ease of using a computer, a computer fundamental knowledge was not necessary and it states that technology could be learnt at any age. But, computer fundamental knowledge was found to ward off inherent belief and increase chances of opting for internet banking.

(c) **Knowledge source to demonstration effort**

**H<sub>0</sub>3:** Knowledge source had no significant relationship with demonstration effort

From the above Table 1.3, it was observed that knowledge source had significant relationship with demonstration effect. H<sub>0</sub>3 was rejected. It was inferred that demonstration effort is a part of knowledge source and it is helpful in significantly gaining knowledge about internet banking. While other knowledge sources insisted on the theoretical side of exposing internet banking to the senior citizens, demonstration effort relies on the practical side of it.

(d) **Technology accessibility to ease of use, demonstration effort, inherent beliefs and alternate channel choice**

**H<sub>0</sub>4:** Technology Accessibility has no significant relationship with ease of use, demonstration effort, inherent beliefs and alternate channel choice

From the above Table 1.3, it was observed that apart from ease of use and alternate channel choice ( $p > 0.05$ ), other variables had significant relationship with technology accessibility. H<sub>0</sub>4 was partially rejected and accepted. It was inferred that technology accessibility did not aid ease of use and alternate channel choice, whereas it aided demonstration effort and inherent belief. Technology accessibility was opined to be a means and not an end to carry out internet banking transactions.

(e) **Ease of use to inherent beliefs and alternate channel choice**

**H<sub>0</sub>5:** Ease of use has no significant relationship with inherent beliefs and alternate channel choice

From the above Table 1.3, it was observed that, inherent beliefs and alternate channel choice had significant relationship with ease of use. H<sub>0</sub>5 was rejected. It was inferred that if senior citizens were trained to gain ease of using a computer, then inherent belief would be rid off and alternate channel choice would be improvised.

(f) **Demonstration effort to computer fundamental knowledge, inherent beliefs and alternate channel choice**

**H<sub>0</sub>6:** Demonstration effort has no significant relationship with computer fundamental knowledge, inherent beliefs and alternate channel choice

From the above Table 1.3, it was observed that, computer fundamental knowledge, inherent beliefs and alternate channel had significant relationship with demonstration effort since  $p < 0.05$ .  $H_06$  was rejected. It was inferred that a strong effort from the bank to demonstrate internet banking will erase wrong inherent belief, and increase chances of opting Internet Banking as well as enrich knowledge about it.

(g) **Inherent beliefs to alternate channel choice**

**H<sub>07</sub>:** Inherent belief had no significant relationship with alternate channel choice

From the above Table 1.3, it was observed that, inherent belief had significant relationship with alternate channel choice since  $p < 0.05$ .  $H_07$  was rejected. It was inferred that senior citizen's inherent belief was a reason for non adoption of internet banking.

## 6. CONCLUSION

From the lights of the results, it is concluded that senior citizens are found to migrate toward embracing technology once it is seen that they are no longer physically able to carry out their daily activity. It may also be because of the independence that they wish to achieve from leaning on others for banking transaction help. Computer fundamental knowledge is one thing that senior citizens agree they do not possess, but they do cherish if they had since they believe that it would have eased their inherent beliefs and would have totally change the attitude towards using alternate channel. Knowledge source is found to be an important factor in imparting knowledge to senior citizens and they do believe that demonstration effect needs such a backing from the knowledge source. Technology accessibility was not seen as an end towards achieving digital inclusion for senior citizens. A diversion to technology was seen not only because of inherent beliefs that they had but also due to other factors.

## 7. IMPLICATIONS OF THE RESEARCH

Policy makers could make use of this effect and the left out elderly population into the fold of Indians who know how to use internet banking, as India awakens to the dawn of her Digital India Dream in the year 2020. Banks could turn branch helpdesks into representatives who can help senior citizens, who have bought an internet banking access from banks. These representatives could go to the homes of these elders and teach these senior citizens at their pace in a special way that would help the technology averse senior citizens to embrace technology and thereby could ease their life.

## 8. LIMITATIONS OF THE RESEARCH

Not much research has been done on use of Demonstration effect on Internet Banking amongst senior citizens in Banks, by other authors. This paper has not used any particular model. The area where the study was conducted was miniscule, but it consisted the maximum proportion of senior citizens from India. The time period taken to conduct the study and the sample size are very small. As per 2011 Census, 89% of the total population in Pathanamthitta lives in rural area and only 11% live in urban areas and hence the opinion of senior citizens in other places might differ. A future study could add more variables or use a particular model or could expand the area of study. Private sector banks could also be analysed or compared with public sector banks to see the extent of such an effect.



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