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Bridging Technology and Human Motivation: A Theoretical Model for Mobile Banking App Adoption

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Abstract*— With the advent of mobile banking apps, the banking services have become easily accessible by the users. Besides banking services, other organizations are also providing such services and creating a huge competition to the banks. Thus, it becomes immensely challenging for the banks to provide updated apps and also provide ease of use to the customers. But the choice of using such apps not only dependent on technological advancements. In spite of providing seamless services, many users of the banks are still not using mobile apps. Thus, the human aspect of the mobile banking apps are also required to be considered for identification of the reasons of mobile banking usages. The present study aims to identify the relevant reasons of mobile banking usage and also tries to provide a theoretical representation of the interrelationships among the technological and human constructs. The reliability of the scale items associated with the constructs has been checked in the study and this present study can be proceeded further to statistically test the validity of the relationships.

I. INTRODUCTION

Internet Banking has led the world into another spectrum of banking by allowing the customers to conduct day to day banking related activities at their own place of convenience. The reduction in the price of internet and the price of the smart phones are two major reasons of this growth. But the banking industry has used this opportunity to boost the usage of mobile banking. Today, almost all the banking facilities are given in the internet banking apps of different banks. Customers, without even going to the branches, can do all the banking activities through the uses of banking apps. The knowledge of the customers has also increased in this field, and banks are also providing free knowledge boosters to enable them to use mobile banking apps. Besides this, the ease of use of the mobile banking apps are one of the primary concerns of the banks and tremendous amount of R&D is invested on this.

The arena of m-banking is comparatively new in India and thus the opportunities associated with this field is very high. Every organization related to banking and associated services have already designed their interface of m-banking and regularly working on the betterment of the facility to provide a better service to their customers. Researchers associated with this field also conducted several research works related to this field and significant finding are identified related to the adoption this new technology by the consumers. Although the findings of the research works related to this field claim recognition, most of the works are related to technology. The human factors such as motivation, perception about the banking or related service providing organization and the development of attitudinal loyalty for m-banking apps are some of the areas which have not received much of the focus of the researchers. The present study tries to bridge this gap. The study aims to identify the relationship between the technological and the consumer's perception related factors with that of Satisfaction and Attitudinal loyalty of the m-banking users. A theoretical model with a validated questionnaire is aimed to be prepared. Findings of the study will be helpful for marketers to stress the relevant consumer related aspects to create a differential position in the market.

II. REVIEW OF LITERATURE

The research area on m-banking is full with contribution of different researchers with the main emphasis on the identification of reasons of using m-banking. The first model was proposed by De Lone et.al. (1992) and that included information and system quality, and the same was modified by the authors by including service quality as well (2004). Jiabao et al (2011) found Perceived Ease of Use and Usefulness taken from Technology Acceptance Model, can influence customer intent to use Mobile Banking. The same study also found system, service and information quality positively affects customer intention through these variables. The study concluded by stating that banks should provide mobile banking users with high information and service quality for encouraging better customer adoption.

Saadilah et al (2020) used Information Systems Success Model and identified quality associated with system and information affects user satisfaction. Chung et.al. (2009) studied effect of the level of trust on satisfaction derived from mobile banking and stated that quality of information and system quality significantly influence customer satisfaction.

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Tam and Oliveira (2016) found that information, system and service quality positively affects user's satisfaction in mobile banking, and that the overall quality of the m-banking system has a significant effect on user satisfaction. Similar findings have been observed by Sharma and Sharma (2019) as well in the Indian context. Singh et al (2014) conducted a study on Factors Influencing the Adoption of Mobile Banking in India and found that security, social influence, perceived ease, cost and compatibility has influence on the customer for using mobile banking. Ramos et al (2016) found that consumers who perceive that the application has a high level of security associated with it have shown greater trust in mobile banking and privacy had a positive effect on consumer trust, innovativeness did not have any significant direct effect on trust.

Tarawneh et al (2023) conducted research on determinants of M-Banking Usage and Adoption among millennials. The findings of the research indicated that the overall perceived risk is negatively affecting mobile usage intention. The study also found that facilitating conditions, social influence, effort expectancy, habit, hedonic motivation and performance expectancy are significant antecedents mobile banking usage intention. Mortimer et.al. (2014) empirically examined the motivators that influence a consumer's intentions to use mobile banking and found perceived risk, perceived usefulness and perceived ease of use and social influence were the primary determinants of mobile banking adoption. Tan et.al. (2010) did a study on evaluating e-banking and m-banking adoption factors and found that perceived ease of use, perceived usefulness, computer efficacy, convenience and device features and security as the most important determinants in the adoption of e-banking and m-banking. Zhou et.al. (2013) found that for mobile payment services, system quality has significant effects on trust and satisfaction and information quality and service quality affect trust and both trust and satisfaction predict intention.

Wang et. al. (2008) identified the reasons which the consumers consider as a relative advantage of the mobile banking. His research includes variables associated with vast array of relative advantages ranging from technological advantages to promotions offered through banking apps. Sharma and Sharma (2019) and Baabdullah et. al. (2019) identified different variables associated with the quality of the technology and services provided by the mobile banking apps. Besides that, both the authors also have provided variables associated with the intention to try the mobile banking apps and also the related satisfaction. Alalwan et. al. (2017) highlighted the satisfaction related issues associated with the mobile banking apps. Irfan et. al. (2015) has studied the trust associated with the users of mobile banking apps. Abdul et. al. (2019) also studied in the same field on the mobile users of Ghana and identified variables associated with the trust and mobile banking uses. Although the research works discussed so far claims recognition, there are certain research gaps which are still to be addressed.

Research Gaps:

RG1: The identification of the relevant variables associated with the theoretical constructs incorporating both technological and human aspects are not done.

RG2: Identification of the human factors responsible for the usage of mobile banking apps, although done by several researchers, are scattered and not structured.

RG3: Although there has been discussion related to the development of a theoretical model incorporating both technological and human aspects of the mobile uses, no theoretical model has been developed incorporating the same.

Research Objectives:

RO1: To identify the relevant variables associated with the theoretical constructs of the reasons of usage of mobile banking incorporating both technological and human aspects.

RO2: To identify the relevant human factors responsible for the usage of mobile banking apps.

RO3: To develop a theoretical model incorporating both technological and human aspects of the mobile uses.

III. RESEARCH METHODOLOGY

To identify the relevant variables associated with the technological and human reasons of usage of mobile banking apps are done through a survey of literature. Once the relevant variables are identified, data were planned to be collected from 150 respondents who are users of mobile banking apps. A five-point Likert scale has been used to collect the data. A reliability analysis has been administered on the collected data and the value of the Chronbach's alpha is considered to identify the reliable constructs. If the value of Chronbach's alpha > 0.7, the item is stated to be reliable. A graphical model of the interrelationship has been designed to provide the representation of the interrelationship among the different attributes.

IV. FINDINGS AND INTERPRETATIONS

As discussed earlier, scale items are collected from the research works of Sharma and Sharma (2019) and Baabdullah et. al. Alalwan et. al. (2017) Irfan et. al. (2015) Abdul et. al. (2019). A five-point Likert scale has been used to collect the data. A reliability analysis were administered on the collected data and the findings are as follows:

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Constructs	Survey items	Chronbach's Alpha
Relative Advantage	M-banking is relatively easier for transactions	0.734
	m-banking is relatively quicker for banking activities	0.772
	m-banking provides better promotion than other banking services	0.718
	Adopting mobile banking is useful for managing my finances	0.735
Brand Perception	My m-banking service provider has a good reputation.	0.766
	My m-banking service provider is recognized widely	0.754
	My m-banking service provider offers good services	0.776
	My m-banking service provider provides instant and secured service	0.872
Information Quality	The information provided by mobile banking is up-to-date and complete	0.700
	The information provided by m-banking is easy to understand	0.736
	Mobile banking provides me with information relevant to my needs and accurate	0.826
	Mobile banking provides me with sufficient information	0.946
Service quality	The call centre representatives always help me when I need support with m-banking	0.831
	The call centre representatives always pay personal attention when I experience problems with m-banking	0.858
	The call centre representatives have adequate knowledge to answer my queries related to m-banking	0.746
	The level of service quality I receive from Mobile banking is high.	0.825
System quality	The mobile banking app is easy to navigate	0.843
	The mobile banking app is well structured	0.859
	The mobile banking app is easy to use	0.707
	Mobile banking is user friendly	0.829
	Mobile banking is visually attractive	0.933
	I would find Mobile banking secure enough to conduct my banking transactions	0.834
Actual usage	I use m-banking multiple times in a week	0.941
	I use m-banking frequently	0.859
	I have many weekly requirements of m-banking	0.724
Mobile banking adoption	I will adopt mobile banking as soon as possible	0.736
	I intend to use mobile banking in the future	0.940
	I will regularly use mobile banking in the future	0.776
	I would like to use for many purposes (viz. paying bills, fund transfer, and so on)	0.884
Satisfaction	I am satisfied with m-banking effectiveness	0.807
	I am satisfied with m-banking efficiency	0.866
	I am very satisfied with Mobile banking services	0.889
	I am satisfied with the way that Mobile banking has carried out transactions	0.868
	Overall, I was satisfied with Mobile banking	0.862

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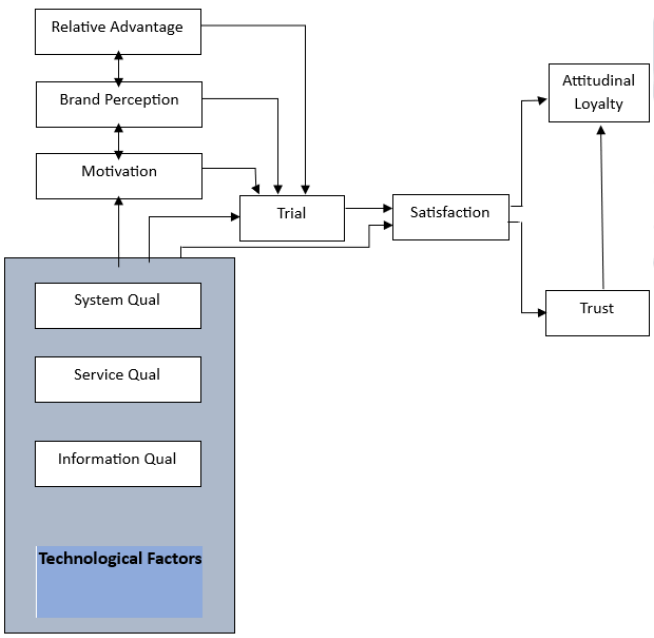
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Constructs	Survey items	Chronbach's Alpha
Loyalty	I will recommend using Mobile banking to other people	0.925
	I intend to continue using Mobile banking	0.952
	I prefer using Mobile banking above other banking channels	0.951
Trust	I find m-banking is secure in conducting all kind of transactions	0.926
	I feel assured that legal and technological structures adequately protect me from problems on Mobile banking	0.788
	I believe that mobile banking is trustworthy	0.822
	I believe that data send through mobile banking is confidential	0.773
	I get an immediate confirmation message of the transaction	0.741
	I am confident that my transaction through m-banking will always be transparent because of the regulator, RBI	0.834
	I trust that mobile money service providers will safeguard my money and my personal information	0.879

Thus, from the findings, it has been observed that the Chronbach's alpha value associated with all the variables are > 0.7. Thus, this could be inferred that all the scale items are reliable. From the findings this could also be inferred that the constructs associated with the variables, such as Relative Advantage, Motivation, Trust, Quality and so on are also relevant. Based on the findings the following representation of the model is developed:

V. PROPOSED MODEL



From the above model, the interrelationship among the different constructs have been demonstrated. The model also incorporates all the different constructs of the mobile banking uses, both technological and human aspects of them.

VI. CONCLUSION

The study was targeted to identify relevant technological and human aspects which are responsible for mobile banking app uses. From the research works of different researchers, the relevant scale items have been identified. The collected data were tested with reliability analysis which shows the scale items are reliable. Moreover, the theoretical construct of the research is also represented through a model indicating the interrelationship among the variables and constructing components. Findings of this research will be helpful for further research in exploring the mentioned interrelationships among the constructs and the variables. Besides this, the validity of the model also could be empirically studied to identify the interrelationships.

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