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Factors Affecting Consumer Adoption of Mobile Financial Technology in Nepal

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Abstract: *This paper explores the factors that influence consumer adoption and continued usage of mobile financial technology, focusing on six key areas: individual awareness, perceived usefulness and ease of use, perceived risk, perceived benefits, cost, and government policies. The study addresses a gap in understanding how active users prioritize these factors for sustained usage. The sample includes active users of mobile financial services. The findings show that perceived benefits, cost, and government policies preventing fraud are the most important factors for continued use. While users are aware of risks, these do not impact their usage. Other factors, such as awareness and ease of use (user-friendliness), were found to play no significant role. The results suggest that trial usage of new products is crucial for adoption. If users understand the risks, recognize the benefits, and find the product practical and reliable, they are more likely to adopt and continue using it.*

Keywords: adoption, continued usage, government policies, mobile financial technology, perceived benefits

I. INTRODUCTION

In today's information and technology age, technological innovation and development is happening at a very rapid pace. Some new technological innovations can easily gain consumer acceptance and some fail to gain enough acceptance for it to become a successful business. In general, the average consumer goes through sequence of events that led towards acceptance or rejection of any new technology innovation or new product. First and foremost, for any new product to gain acceptance, it needs to market itself so that the consumer gets aware of the product. This usually happens through mass marketing campaigns. Once the consumer is aware of the product, the interested consumer usually seeks more information regarding its benefits, its usefulness, cost, and risk among other things. The interested consumer then goes through trial usage which can lead to full and regular use of that product. These numerous stages of adoption (awareness, interest and

information search, evaluation/trial and adoption) which a consumer goes through may happen before or even after the actual adoption (Chan & Lu, 2004). Based on how quickly a consumer adopts a product they can be categorized into early adopters or laggards. Early adopters are those who are interested and willing to try out the product as soon as it becomes available in the market and laggards are the ones who will only consider using a product once their preferred choices of product is not available in the market.

Mobile phone is one technology whose growth and adoption around world has been very remarkable. The reach and adaptation of mobile phones has prompted development of financial or non-financial services that can be offered via mobile phone. Banks provide mobile banking services, deposit services, insurance sales services, credit services etc. via mobile phone. Financial technology (fintech) companies are providing bill payment, top up and money transfer services, and e-commerce companies like amazon are providing shopping facility using mobile phone. Due to advancement in manufacturing process of mobile phone, smart phones are becoming cheap and large section of society can afford to carry the phone and get access to various financial and non-financial services provided through mobile phone.

The advent of mobile financial services has enabled people to conduct financial transactions easily at their own convenience. However, the challenge facing mobile financial service provider is consumer adoption, improving customers' perceptions, and encouraging loyalty. Perceived usefulness and perceived ease of use are important factor affecting consumer adoption of new technology (Chung & Kwon 2009). Beside perceived usefulness, consumer acceptance of mobile technology is also influenced by its perceived risk, cost, and compatibility (Wessels & Drennan, 2010). However, lack of awareness of full range of services and capability of mobile financial technology is holding back its adoption (Tobbin, 2013). In most cases and especially in mobile financial services, consumer lack of knowledge on possible range of services available has led to less interest shown in its adoption.

This paper looks at the factors that influence mobile financial technology adoption and proposes a model for Nepal. Very little study has been done in this field in Nepal and the main objective is to assess the factors affecting consumer adoption and determine which factor user value most for continued use of mobile financial services in Nepal. Specifically this research looks as whether individual awareness, perceived usefulness and ease of use, perceived risk, perceived benefits, cost and government policies pertaining to promotion of new technology (in this case Mobile Financial Service) has influence on users adoption of new technology and continued use of the technology. In this paper, Mobile financial service means any kind of financial transaction like payments, mobile recharge, money transfer, bank transfers, and other financial services done through a mobile phone.

II. LITERATURE REVIEW

Various theories have tried to explain why some technology are easily accepted and grow up to become a huge industry and some do not make it out of the lab or if they do than they are not very well received by the end users. Various theories have been developed that help to explain factors determining consumer's acceptance and usage of new technology or innovation (Dapp et. al, 2012; Lai & Zainal, 2015; Lai, 2016). Some of the theories that has been developed are the Theory of Diffusion of Innovations (DOI), the Theory of Reasonable Action, the Theory of Task-technology fit (TTF), Theory of Planned Behavior (TPB), Decomposed Theory of Planned Behavior (DTPB), the Technology Acceptance Model (TAM) proposed by Fred Davis in 1989. There have been various additions to the TAM model proposed after it originally appeared in 1989.

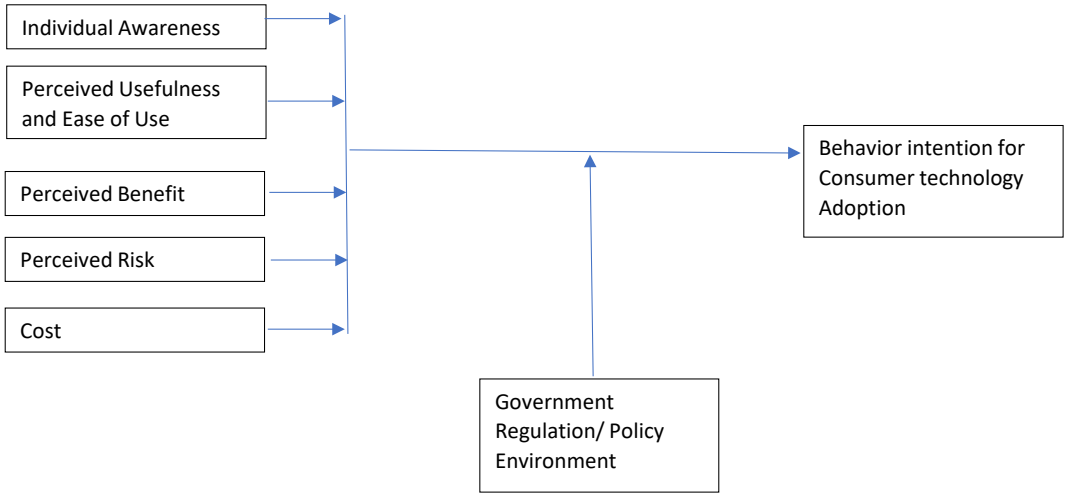
Behavior intention for consumer technology adoption. Technology adoption is the stage in which a new technology or innovation is chosen by an individual or an organization for their regular usage. For an individual to adopt a technology he or she needs to be first aware of the new technology which can happen through various communication medium. The new technology or innovation needs to meet individual needs and be useful and easy to use. These factors help determine the attitude toward the new technology i.e. unfavorable or favorable toward new technology. Attitude helps determine the behavior intention and intention pushes towards full adoption.

Factors affecting technology adoption Factors affecting new technology adoption has been an area of focus in many studies and many theories have been proposed. These theories most of which uses behavior intention (attitude and subjective norm) of the user to predict usages of the technology have determined few common factors like individual awareness, perceived benefits/Risks, cost and social norm that determine the adoption of new technology. TAM model developed by Davis and which is the most used framework in predicting information technology adoption (Paul et al, 2003) and has been cited in most of the research that deals with users' acceptance of technology (Lee et al, 2003) has determined two additional factors besides the ones mentioned above namely perceived usefulness and perceived ease of use that determine the adoption of new technology.

Following is the conceptual framework developed based on the various factors identified using the review of various model proposed by researchers to help explain consumer's acceptance and usage of new technology or innovation. Individual review of the variables in the framework is presented below:

Figure 1

Conceptual framework



Perceived usefulness and perceived ease of use. The technology acceptance model proposed by Davis in 1989 identified perceived usefulness and perceived ease of use as important factors for technology adoption. Perceived usefulness can be defined as the degree to which a consumer believes that using a particular system would enhance his or her job performance and perceived ease of use can be defined as the degree to which a person believes that using a particular system would be easy to learn and operate without much effort (Davis, 1989). Researchers have shown that perceived usefulness and perceived ease of use are important factor in cultivating positive behavioral intention towards adopting mobile banking (Chung & Kwon, 2009; Lee et al, 2003; Wu & Yen, 2014). Of the two factors, perceived ease of use has greater impact than perceived usefulness in consumer willingness to adopt mobile banking (Lee et al, 2003). Beside perceived ease-of-use and perceived usefulness, perceived mobility and personal habit are other factors influencing the use of mobile financial services (Wu & Yen, 2014). Mobile financial services offers mobility in performing transactions which has positive impact on perceived ease-of-use and perceived usefulness, which in turn has positive influence for it usage.

H1: Perceived usefulness and perceived ease of use has positive influence to the adoption of mobile financial services.

Individual awareness. Adoption of innovative service or product begins with consumer being aware about the product or services (Sathye, 1999). Studies on mobile banking adoption shows that lack of awareness of the various services available on mobile banking and low knowledge on potential benefits of using mobile banking technology results in low adoption of mobile banking (Cruzet et al., 2010; Sangle & Awasthi, 2011; Devi et.al,

2011; Nicolas et al., 2008). For a consumer to adopt a product or services a consumer goes through the process of obtaining knowledge about the product, persuasion by early users, decision based on reviews from early users and confirmation after own usages (Roger & Shoemaker, 1971; Sathye, 1999). Thus, consumer becoming aware of any product or services is an important first step in technology adoption.

H2: Awareness of mobile financial services has positive influences in adoption of mobile financial services.

Perceived benefits (perceived relative advantage). Perceived benefits can be defined as the degree to which the new technology or innovation is perceived to be better than the idea or technology that it replaces (Karayanni, 2003). Mobile banking or use of mobile technology for making payments or transferring money offers convenient benefits of mobility which is not an option provided by traditional offline banking or brick or mortal payment mechanism. Even with this convenience, the new technology can be resisted by consumer. The major barrier for technology adoption is tradition (Cheminguli & Lallouna, 2013). Tradition has significant negative impact on the consumer's willingness to use mobile financial services but on the other hand option to try the new technology (trialability), compatibility of the technology and the enjoyment obtained from using the technology has a significant positive impact on intention to use such technology (Cheminguli & Lallouna, 2013). Mobile friendly design that leads to a good user experience and number of services available for use promotes customer satisfaction and improves the user's intention to use the services (Thakur, 2014). Mobile financial service provider that prioritized intuitive interface design, provide services valued by customer and provide trial usage opportunity can have positive impact on customers confidence on the product and encourage its adoption.

H3: Perceived benefits has a positive influence in adoption of mobile financial service

Perceived risk. Perceived risk can be defined as subjective risk that individual has regarding the possible negative consequences of performing certain action or behavior. These feeling comes to mind due to inherent uncertainty associated with new technology. Research has shown that consumers are more motivated to avoid bad outcomes as a result of taking risk than think about positive outcomes that could arises from getting involved in risky activity (Mitchell, 1999). Study on mobile banking services adoption has shown that perceived risk is one of the major factors that deter consumer adoption as well as reduces the satisfaction level of the consumer (Mitchell & Greatorex, 1993; Polatoglu & Ekin, 2001). Low risk associated with technology-based services increases consumer willingness to adapt such services (Lovelock et al, 2001) whereas higher perceived risk decreases consumer intention to use technology-based services (Wu & Wang, 2005).

H4: Perceived risk associated with the service has negative influence in adoption of mobile financial services.

Cost effect. Cost of using new technology is one of the factors that affect consumer acceptance of mobile banking (Wessels & Drennan, 2010). Cost along with perceived usefulness, perceived risk, and compatibility impact mobile banking acceptance (Wessels & Drennan, 2010). With this in mind, a mobile financial service provider needs to emphasize on the usefulness and lifestyle compatibility aspect of mobile financial services along with the risk factor and cost associated with using the services while promoting the product (Wessels & Drennan, 2010). Of various obstacles in mobile payment adoption, high cost/ overhead is one of the very prominent reason for lack of adoption (Diniz et.al, 2011). A low-cost alternative to the current technology/service in place can lead to consumer adoption and continued usage.

H5: Cost of mobile money service has negative influence to the adoption of mobile financial services.

Government regulation/ policy environment. For any technology to flourish there needs to be the right polices in place by the government. This research places Government regulation/ policy environment as having moderating influence in the overall model. Government intervention plays a direct role in promoting technological innovation (Utomo & Dodson, 2001). Every new technology innovation act as a challenge to the governments to put forward regulatory oversight that promotes competition and encourages innovation and in the mean while also serve public need (Choudrie & Papazafeiropoulou, 2006; Lee-Kelley & Kolsaker, 2004).

Government plays a vital role in development of long term technology policy that enabled the country to introduce new technology (Freeman, 1998). Public administration plays an important role in the diffusion of new technology (King et al., 1994; Neo et al., 1995; Rapp, 1996). Governments can either be influential or regulatory in diffusion of new technology. They can be instrumental in performing six main institutional actions which are knowledge building, knowledge deployment, subsidy, mobilization, innovation directive and standard setting (King et al., 1994).

Regulatory environment in a country plays a vital role in determining whether mobile financial services especially mobile money succeeds or fails to engage consumer (Evans & Pirchio, 2015). Mobile money have been successful in almost all the countries that have light regulation in place for KYC and agent onboarding requirement (Evans & Pirchio, 2015).

H6: Favorable government policies has positive influence on the adoption of mobile financial services.

III. RESEARCH METHODOLOGY

This study examines the factors that influence the continued usage of mobile financial services in Nepal. The research focuses on active users to ensure the sample aligns with the study's objective. Active users were identified as employees of three organizations—IME Limited, IME Digital, and Swift Technology—where all employees use at least one mobile financial service product, such as a mobile banking app or mobile wallet.

The study employed a quantitative research design, utilizing a cross-sectional survey to collect primary data. Secondary data was sourced from research papers, government data, and policy documents to explore the broader impact of government regulations on the adoption and usage of mobile financial services.

The target population comprised all active users employed in the aforementioned organizations. An online structured questionnaire containing closed-ended questions was distributed to 377 individuals. A response rate of 32% yielded 117 valid responses. While the sample size is relatively small, it was deemed sufficient for the descriptive and inferential statistical methods used in the analysis. Convenience sampling was used due to its practicality in accessing active users within these organizations.

The primary data collection occurred in April 2023 via an anonymous online survey. Participants were not coerced or influenced in their responses, ensuring unbiased data. The survey included questions on demographics, usage patterns, and perceptions of key factors influencing continued usage, including government policies. Secondary data provided contextual insights and supported the interpretation of results.

The responses were checked for consistency, cleaned, and coded for analysis using SPSS software. Descriptive statistics (percentages, means, and standard deviations) were used to summarize the data. Regression analysis was conducted to test the relationship between independent variables (e.g., perceived benefits, cost, government policies) and the dependent variable (continued usage of mobile financial services). Factor analysis was applied to reduce Likert-scale items on government regulation/ policy environment into manageable dimensions, identifying the most significant factors affecting technology adoption.

Of the 117 respondents, 66.6% were male and 33.4% female, with 76.1% aged between 18 and 30 years. No respondents were above 50 years. All participants had an education level of high school or above, with 61% holding bachelor's degrees and 26% holding master's degrees.

The survey was conducted anonymously, with no direct interaction between the researcher and respondents. Data was collected solely for this research and was not used for any other purposes.

IV. RESULTS AND DISCUSSION

This paper proposed 6 hypotheses which were defined in the literature review section. Regression model was used to determine relationship between behavior intention for adoption and influence of individual awareness, perceived usefulness and ease of use, perceived benefit, perceived risk, cost and government regulation/ policy environment (Moderating variable) in mobile financial services adoption and continued usage by consumer.

Following is the model for the equation in this study

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + e$ where Y is behavior intention for adoption of mobile financial services, X_1 is Individual Awareness, X_2 is Perceived Usefulness and Ease of Use, X_3 is Perceived Risk, X_4 is Perceived Benefits X_5 is Cost and X_6 is Government Regulation/ Policy Environment.

Table 1 shows the model has R square value of .628 meaning that the model proposed can explain 62.8% of variance in behavior intention for consumer technology adoption. In social science a model that explains more than 60% of variance is generally seen as very good model fit. The ANOVA analysis shows that model has F value of 23.672 and p value <.001 which indicates that the model is statistically significant.

Table 1

Model summery

R Square value	Durbin-Watson	F value	P value
.628	1.844	23.672	.000

Source: Field study, 2023

Table 2 below shows that there is strong correlation between the dependent and independent variables. Individual awareness, perceived usefulness and ease of use, perceived benefit and government regulation/ policy environment has significant positive correlation with behavior intention to adopt mobile financial technology. Similarly, cost has significant negative correlation and perceived risk also had negative correlation. These findings are in line with the hypothesis proposed in this paper.

Table 2

Correlation between dependent and independent variables

Pearson correlation for	0	1	2	3	4	5	6
Behavior intention for Consumer technology Adoption (0)							
Individual awareness (1)	.433**	1					
Usefulness and Ease of Use (2)	.536**	.577**	1				
Perceived Risk (3)	-.136	-.172	-.030	1			
Perceived Benefit (4)	.694**	.572**	.581**	-.276**	1		
Cost (5)	-.489**	-.377**	-.391**	-.147	-.440**	1	
Government Regulation/ Policy Environment (6)	.727**	.402**	.513**	-.108	.647**	-.361**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field study, 2023

Table 3 shows the beta coefficient values, t value and p value of the proposed regression model. It can be seen that variable perceived benefits, cost and government regulation/ policy environment has signification relationship with dependent variable (behavior intention for consumer adoption). Similarly, Individual awareness, Perceived usefulness and Ease of use and Perceived risk do not show any significant relationship with dependent variable.

Table 3

Model coefficient value

Statement	Beta Coefficients	t value	P value
Constant		2.421	.018
Individual awareness (X1)	0.041	.433	.666
Perceived Usefulness and Ease of Use (X2)	-0.001	-.012	.990
Perceived Risk (X3)	-0.041	-.544	.588
Perceived Benefits (X4)	0.289	2.678	.009
Cost (X5)	-0.212	-2.66	.009
Government Regulation/ Policy Environment (X6)	0.412	4.586	.000

Source: Field study, 2023

Individual awareness has a positive beta value of .041. This implies that the relationship between the two variable is positive and for every unit change in degree of individual awareness there is 0.041 times change in the adoption of mobile financial services in positive direction. Table 3 shows that there is no significant relationship between individual awareness and behavior intention to adopt mobile financial services in the overall model proposed. This is different than the findings done by other researcher around the world. (Tobbin, 2013; Laforet & Li, 2005; Cruzet et.al, 2010; Sangle & Awasthi, 2011; Devi et.al., 2011). Their research has shown that individual awareness has significant influence on adoption of mobile banking / mobile financial services. This papers result could be because individual awareness is highest among the respondent as all of them are active users. Since, all the respondents are aware of the services it is quite possible that the independent variable is not very relevant in this model where the respondents are all active users of mobile financial services.

Perceived usefulness and ease of use has the beta value of -.001. The coefficient is negative but very close to 0. Even though the relationship between dependent and independent variable is negative, the value being so close to 0 can be interpreted as being indifferent. Meaning there is neither positive nor negative relationship between two variables. Table 3 shows that there is no significant relationship between Perceived Usefulness and Ease of Use and behavior intention to adopt mobile financial services in the overall model proposed. This is different than the findings done by other researcher around the world. The main reason for this result could again be the sample selected for this research. The individual selected are all active users of the services and their active usage has resulted in most of them feeling the service provided by mobile financial services useful and easy to use. Thus, it could be that the independent variable is not very relevant in this model where the respondents are all active users of mobile financial services. They have got used to the design and services and don't think much about them. But for a first-time user the usability, user friendliness and intuitiveness of the design plays important role in making decision.

Perceived risk has the beta value of -.041. This implies that the relationship between the two variable is negative and for every unit change in degree of perceived risk there is -0.041 times change in the adoption of mobile financial services in negative direction. In other word an increase in the degree of perceived risk will result in the decrease in the adoption of mobile financial services. Table 3 shows that there is no significant relationship between perceived risk and behavior intention to adopt mobile financial services in the overall model proposed. This result is different than various previous research done around the world. (Laforet & Li, 2005; Chen, 2013) have shown perception of risk as barrier for online banking adoption. Similarly, research by (Mitchell, 1999; Mitchell & Greatorex, 1993; Mitchell & Greatorex 1990; Polatoglu & Ekin, 2001) have determined perceived risk as one of the major factors that discourages consumer to adopt or provide satisfaction in their mobile banking services. The result in this study again could be result of the sample

selected as the active users who are also employee of the organization that provide mobile financial services. They are not very concerned about technical risk or risk of losing the money (Financial risk) of failed transactions. The users are aware of the internal workings of the service provider and the risk prevention measure in place by the service provider. This could have resulted in them not showing any concern. It is quite possible that the result could have been different if the surveyed individual were non users and did not have idea about the service and internal workings of mobile financial service provider. Further research can be done in this regard. Going from this it can be ascertained that the service provider needs to think about assuring the customer that there is very little financial risk or technical risk associated with using their services.

Perceived benefit has the beta value of .289 and there is significant relationship between perceived benefit and behavior intention to adopt mobile financial services in the overall model proposed at 10% level of significant. It shows that for every unit increase in degree of perceived benefit there is .289 times increase in the adoption of mobile financial in positive direction. In other word an increase in the degree of perceived benefits will result in the increase in the adoption of mobile financial services. This finding is in line with other research done around the world. (Cheminguli & Lallouna 2013; Karayanni, 2003) have shown that consumer's perception of benefits associated with new technology has a significantly positive impact on consumers intention to adopt new technology. The respondent of the survey are active users and they understand benefits that mobile financial services offer in terms of ease of payment, convenience it offers. They have had the opportunity to try the product, test its compatibility and make their conclusion based on their experience using the service. The result could have been different if the respondents were non users of mobile financial services as they might have answered differently because they would not have a chance to try the product and make up their mind. Service provider should lunch campaign that encourages potential customer to try their product and make decision of regular adoption after their trail. Service provider should also focus on communicating the mobility and lifestyle benefit aspect to the consumer for them to be willing to adopt their services. They should focus on ease of payment from anywhere and anytime as well as focus on time saving aspect of payment especially the cumbersome payments like payments that has to be done to the government e.g. electricity, taxes etc.

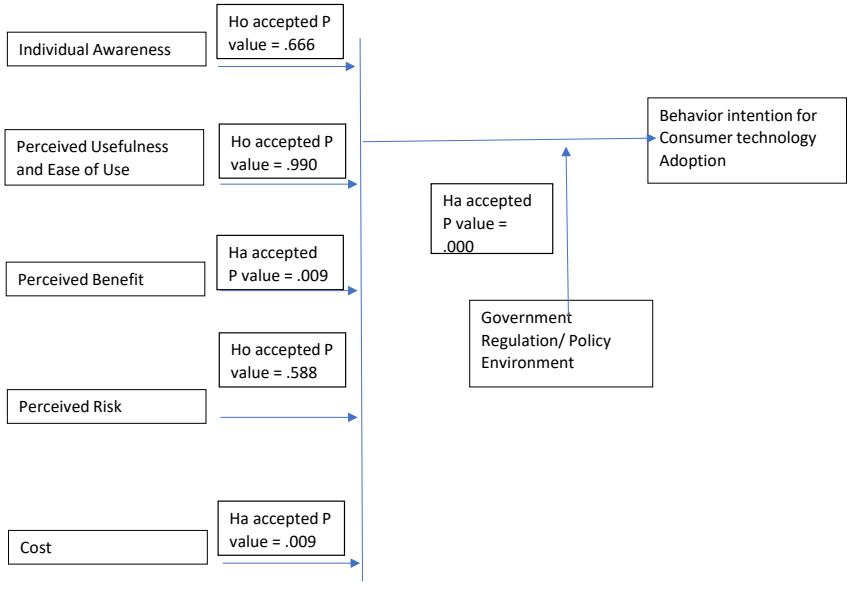
Cost has the beta value of -0.212. This implies that the relationship between the two variable is negative and for every unit change in cost of using the services there is - 0.212 times change in the adoption of mobile financial services in negative direction. In other word an increase in the cost of using the services will result in the decrease in the adoption of mobile financial services. Table 3 shows that there is a significant relationship between cost and behavior intention to adopt mobile financial services in the overall model proposed at 10% level of significance. This is in line with research done around world. (Wessels & Drennan, 2010; Diniz et.al, 2011) have shown in their research that cost plays a significant role in

determining the adoption of mobile financial services. (Luarn & Lin, 2005) in their paper have shown that cost associated with new technology has negative effect on intention to use that technology. This is especially true in using mobile banking. The higher cost associated with mobile banking deter consumer from using the services (Cruzet et.al, 2010). Higher cost usually deters consumer from using new service so the service provider should think of pricing model that ensures mobile financial services is less costly than predominant medium being used by the individual currently. But people are willing to pay higher if it provides convenience and fits the lifestyle of the user.

Government regulation/ policy environment has a beta value of 0.412 and there is significant relationship between government Regulation/ Policy Environment and behavior intention to adopt mobile financial services in the overall model proposed at 10% level of significant. It shows that for every unit increase in favorable government regulation/ policy environment there is .412 times increase in the adoption of mobile financial in positive direction. In other words, an increase in favorable government regulation/ policy environment will result in creating environment for increasing the adoption of mobile financial services for consumer. This is in line with various literature discussing about the role public administration in diffusion of new technology (King et al., 1994; Neo et al., 1995; Rapp, 1996). Favorable environment created by the government helps to create an environment where mobile financial services provider can provide services freely and easily. Their regular monitoring and necessary action help to create an environment of trust among the users which in turn increases the likelihood of consumers to adopt mobile financial services.

Figure 2.

Below figure shows the overall fit of the model proposed in this research.



V. CONCLUSION AND IMPLICATIONS

For active users of mobile financial services, the most important factors for continuous usage of the services are the benefits, cost and government regulation/ policy environment in place. The individual active users of mobile financial services are using the services because it provides easy and effortless payment solution, possibility of making payments to their internet, TV, water, electricity bill from anywhere any time. The individual users are using the services because they feel that the cost per transaction is lower than other methods of performing financial transaction. Similarly, active intervention of the government in regulating the mobile financial service provider is creating an environment of trust in the individual and making them feel that the financial services provided by the mobile financial services providers are genuine and if any fraudulent transaction happen then they can expect government intervention. Thus, the user is using the services because they find it convenient and they trust the platform provided by the service providers.

The active users do not see risk associated with mobile financial services as a major hindrance for regular usage because they are well aware that technical and financial risk that they might face can be solved easily by the service provider over a phone call. This shows that trial usage of any new product is very important for encouraging any individual for full adoption of any new product including financial product. If user is confident in the product, its services and likes its possible benefits then he or she will most likely adopt the product. Mobile financial service provider should devise a scheme to encourage potential customer to try the product in limited edition before pushing for full adoption while also educating consumer about steps that consumer can take to minimizing risk.

As for the overall conceptual framework this paper suggests future researchers to not keep individual awareness and Perceived Usefulness and Ease of Use in their model. For active users of mobile financial services awareness of the product is very high so keeping it in the conceptual framework is not recommended. Similarly active users are using the services provided by mobile financial services because they find it useful and easy to use so keeping this variable in the conceptual framework is also not recommended.

Limitation of the study: This study focuses only on the users of mobile financial services and the sample is taken from the employees of mobile financial service provider namely IME Digital, Swift Technology and IME Limited. These three company in combination have been providing mobile financial services through Agent as well as mobile app.

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