Predicting E-Banking Adoption : An Evaluation of Perceptions and Behavioural Intentions of Small and Medium Enterprises in Karnataka

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Abstract

The Indian government supports small and medium enterprises in adopting and using e-banking services as a part of its 'Digital India' campaign. Few studies have focused on the adoption of electronic banking by SMEs in India. Hence, it is imperative to understand the perception of SMEs to adopt e-banking services. The purpose of this paper was to empirically study the direction of relationships between perceived ease of use, perceived usefulness, perceived convenience, perceived self-efficacy, trust, perceived risk, government support, and intention to adopt online banking. A cross-sectional descriptive survey was carried out to gather quantitative data from 132 SMEs in Karnataka. The data were analyzed using the PLS method of structural equation modeling. The results showed that perceived usefulness, perceived risk, and perceived ease of use determined e-banking adoption. Trust was positively related to perceived risk of e-banking transactions. We found that perceived self-efficacy affected perceived ease of use that, in turn, determined perceived usefulness. Hence, the banks should provide training programmes to improve self-efficacy and allocate more resources to create an easy-to-use system and adopt risk reduction measures that inhibit identity theft and fraudulent activities over the Internet to foster trust among prospective SMEs. Unlike existing studies, our model included additional variables namely trust, perceived risk, perceived self-efficacy, and government support. This model could be applied to SMEs in other developing countries that are in the initial phases of adoption of online banking.

Key words : **Adoption, SME, e-banking, perceived usefulness, perceived ease of use, risk**

JEL Classification : G20, G21, M15

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Electronic banking, as a strategic weapon, has been implemented by most of the banks in the world to offer banking services and information on an online platform that overcomes spatial and temporal barriers. The adoption of banking technologies improves financial performance, efficiency, productivity, and competitiveness of small and medium enterprises (SMEs). Identifying the advantages of 'digital economy' and 'cashless India,' the Indian government has implemented strategic policies that strengthen ICT infrastructure and promote digital payments within the government and also among people and businesses. The adoption of the Internet is still at infancy among SMEs; hence, the extensive adoption of e-banking that requires secure transactions with privacy is still small. It is to be noted that only two-thirds of SMEs use the Internet for business applications due to several constraints such as lack of digital literacy, accessibility, and trust (Gnanasambandam, Madgavkar, Kaka, Manyika, Chui, Bughin, & Gomes, 2012). The old tradition of cash - carry banking, no possession of debit or credit cards, and general lack of confidence in the area of financial management might

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inhibit adoption and usage of e-banking. The banking industry would have a strategic benefit if they adopt technology, at least outsource technological operations (Mohapatra, Sahoo, & Kesharwani, 2015), especially in case of public sector banks, it would enhance soundness of business (Shukla, 2016). Expansion of the market into the SME segment would benefit small and large-sized banks through active diversification (Yang, 2009). As such, regulatory compulsions, growth, and cost concerns act as motivators of market penetration (Singh & Singh, 2016). Having recognized the vast potential of SME financing and reluctance of SMEs to adopt e-banking, it is essential to carry out a study on the antecedents of e-banking adoption by SMEs. Various studies on adoption of e-banking have been conducted in the U.S. (Lassar, Manolis, & Lassar, 2005), Europe (Littler & Melanthiou, 2006), and Asia (Yiu, Grant, & Edgar, 2007).

This study differs from other studies because of its focus on SMEs, an engine of growth in developing countries. Moreover, studies that focused on SMEs in Karnataka are very few. Hence, it is imperative to understand the perception of SMEs to adopt e-banking services to predict their intention to use the same in the future. For the bankers who spend an enormous amount of money for designing and promoting e-banking, the results of this study would be useful in identifying the barriers that prevent the adoption of e-banking, and assist them to frame corrective actions to enhance adoption and actual usage of e-banking by SMEs.

Research Model and Hypotheses

This paper derives theoretical grounding from the technology acceptance model (TAM) of Davis (1989) and Davis, Bagozzi, and Warshaw (1989) since a major proportion of the variance in usage intentions can be explained with TAM than other theories (the theory of reasoned action and the theory of planned behaviour) (Venkatesh & Davis, 2000). TAM postulates two particular beliefs - perceived ease of use (PEOU) and perceived usefulness (PU) as determinants of acceptance, adoption, and usage of technology. Davis (1989) defined perceived usefulness as performance enhancement effect of technology that improves productivity and job performance, and perceived ease of use as the extent to which an individual can use technology with less physical and mental effort. The empirical research indicates a significant relationship between perceived usefulness and behavioural intention to adopt e-banking in Turkey (Çelik, 2008), China (Cheng, Lam, & Yeung, 2006), and Vietnam (Chong, Ooi, Lin, & Tan, 2010). If the customers perceive a greater relative advantage, it is more likely that they would adopt e-banking (Amin, 2009). Hence, the study hypothesizes that :

↳ **Ha1 :** Perceived usefulness will have a positive effect on intention to adopt internet banking by SMEs.

Perceived ease of use is another factor that would promote customers to adopt technology (Davis et al., 1989; Venkatesh & Davis, 2000). A complex system would detract any willing customers from adoption ; whereas, an application that is easier to learn and use would be accepted. Gounaris and Koritos (2008) ; Amin (2009) ; Roy, Balaji, Keshaewani, and Sekhon (2015) ; and Zahir and Gharleghi (2015) predicted perceived ease of use to be a significant influence on e-banking adoption. Since SMEs have less experience in using the computer and the Internet, the adoption of e-banking would rely on the extent to which the system is easy to understand and use. Thus, the hypothesis proposed is :

↳ **Ha2 :** Perceived ease of use will have a positive effect on intention to adopt e-banking by SMEs.

If the technology is easy to use, users would expect greater benefits regarding improved performance. Additionally, PEOU directly and significantly affects PU (Cheng et al., 2006). If SMEs find it easy to browse websites, locate information, and carry out monetary transactions, they would perceive better performance and

higher usefulness which, in turn, would increase the adoption of e-banking. Hence, the study hypothesizes that :

↳ **Ha3 :** Perceived ease of use will positively influence perceived usefulness.

In addition to perceived usefulness and ease of use, Amin (2007) found credibility (security and privacy), the amount of information, computer self-efficacy, and normative pressure as determinants of adoption intention. Chong et al. (2010) considered consumers' trust on security and privacy and government support as a part of TAM. Perceived self-efficacy (PSE), a dimension of perceived behavioral control of theory of planned behaviour was added to our model since managers and owners of SMEs in Dakshina Kannada lack education about how to use the web. Venkatesh and Davis (2000) surmised that self-efficacy and PEOU are closely linked when the users' knowledge of information and computer technologies shapes their judgment of usability of a new system such as e-banking. Studies on e-banking (Kesharwani & Tripathy, 2012) and mobile banking (Sripalawat, Thongmak, & Ngramyarn, 2011) have supported self- efficacy as a determinant of adoption. Therefore, the study hypothesis is :

↳ **Ha4 :** Perceived self - efficacy significantly affects perceived ease of use.

Perceived convenience (PC) is one of the primary drivers for customers to opt for online banking. In fact, few studies (Yoon & Kim, 2007) revealed a direct effect of PC on PEOU since users who seek a convenient place to accomplish their banking transactions would find the system easy to use. Thus, it is hypothesized that :

↳ **Ha5 :** Perceived convenience positively affects perceived ease of use.

The TAM was augmented by including trust and perceived risk in the research framework. Trust, defined as belief in secure and private transactions without third party intrusions or cyber-attacks, is vital for e-banking. This finding was supported by Jahangir and Begum (2008) and Hernandez and Mazzon (2007). Several studies showed a lack of trust as the main reason for the reluctance of customers to carry out online financial transactions (Grabner - Krauter & Faullant, 2008). Perceived risk includes the failure of the e-banking system to meet promised benefits and the potential for monetary loss or data loss when third parties hack sensitive personal information and critical files without the knowledge of the user (Featherman & Pavlou, 2003). Thus, this study proposes that :

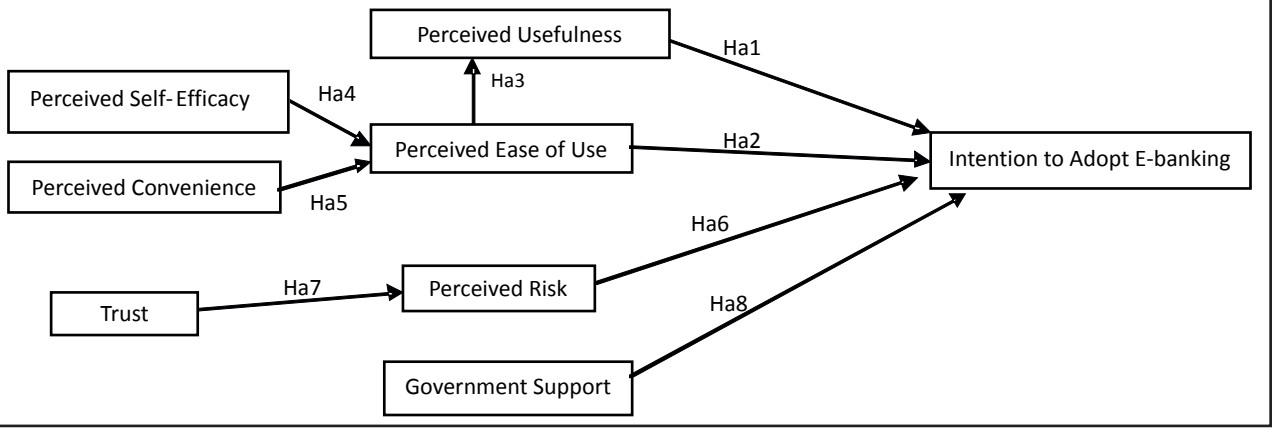
↳ **Ha6 :** Trust (referring to security and privacy) will have a positive effect on the perception of risk by SMEs.

Therefore, trust in an e-banking system would directly influence the perceived risk. While studying barriers to online banking adoption, Cheng et al. (2006) highlighted the role of network security in shaping acceptance of Internet banking in Vietnam. Kesharwani and Tripathy (2012) and Roy et al. (2015) reported a significant influence on inherent risk (computer self-efficacy) and perceived extrinsic risk (privacy, security, social, and performance) on acceptance of online banking in India. SMEs can be expected not to adopt e-banking services if they are averse to security and privacy risks. Therefore, lower risk perception would augment user intention to adopt e-banking. Therefore, the study hypothesizes that :

↳ **Ha7 :** Perceived risk will negatively influence intention to adopt e-banking.

The model of Chong et al. (2010) was adopted because of the Indian government's support to SMEs in adopting and using e-banking services. The government assists as the driving force of e-banking adoption, in particular,

Figure 1. Conceptual Model of the Study



with the investment in IT infrastructure, such as fiber - optic cables, which influences intention to adopt e-banking. The Government of India promotes the adoption of technology by businesses through its investment in ICT and e-governance infrastructure to facilitate end-to-end transactional experience and payment gateway interface for online payments. Since the government is expected to promote digital transactions in India, this study hypothesizes that :

↳ **Ha8 :** Government assistance (GS) has a positive effect on the actual adoption of e-banking by SMEs.

The conceptual framework shows the direction of relationships between perceived usefulness, perceived ease of use, perceived self-efficacy, perceived convenience, trust, perceived risk, and government support (cognitive constructs) and intention to adopt e-banking(behavioral construct) (Figure 1).

Materials and Methods

(1) Measurement Instruments : This descriptive cross - sectional study using a quantitative methodology uses extended TAM for its parsimony and better predictive power than any other model. A household survey was carried out using a structured questionnaire to measure the relationship between exogenous and endogenous constructs in the year 2016. The survey instrument contained items adapted from extant literature on e-banking that tapped the six constructs of the study namely perceived usefulness, perceived ease of use, perceived self-efficacy, perceived convenience, trust, perceived risk, and intention to adopt e-banking. A 5 - point Likert-type scale, ranging from *"strongly disagree"* (1) to *"strongly agree"* (5) were used. A pilot survey was carried out to assess the validity of the survey instrument by asking the experts to validate the contents, and reliability was evaluated by administering the questionnaire to 20 respondents having more than 5 years of experience. A pilot study (20 respondents) was conducted to check the validity and reliability of the survey instrument.

(2) Method of Analysis : The objective of this paper was to understand the complicated relationship between PSE and PC & PEOU; trust and PR; PEOU and PU; government support, PR, PEOU, PU, and IA. The mediating effect of PU on the relationship between PEOU and IA and the mediating effect of PEOU on the relationship between PC and IA and also between PSE and IA was assessed. Hence, this study empirically validates the proposed research model by using the partial least square method of structural equation modeling. It is superior to first generation

regression models on account of accuracy of prediction of the direction of relationships among variables without restrictions on measurement scale, sample size, and residual distributions (Fornell & Robinson, 1983).

(3) Sample and Data Collection : Karnataka has nearly 600,000 small-scale units (of which 350,000 are registered), nearly 75% of these are located in Bangalore, Mysore, Dakshina Kannada, Belgaum, Hubli, and Shimoga districts. This study was carried out in Dakshina Kannada to gain insights into the actual adoption of e-banking by SMEs in Dakshina Kannada district of Karnataka by applying the criterion of Cohen (1988). A sample of 154 SMEs was selected in Dakshina Kannada district of Karnataka state using judgment sampling method. The survey method used a self- administered questionnaire to participants who volunteered for the study. Of 154 responses, only 132 could be used and the rest were discarded due to incomplete answers. The respondents worked as partners or proprietors. Of the total number of those surveyed, 55% were from micro-businesses, 35% were from small businesses, and the remaining were medium enterprises. The data was collected during March to May 2016.

Table 1. Results of Measurement Model : Outer Loadings, Composite Reliability, and AVE

Constructs	Items	Outer Loading	Indicator Reliability	Composite Reliability	AVE
Perceived Use (PU)	PU1 : E-banking provides for the efficient management of finances.	0.857	0.734	0.890	0.802
	PU2 : E-banking increases our productivity.	0.932	0.869		
Perceived Ease of Use (PEOU)	PEOU1 : We find E-banking easy to use.	0.831	0.691	0.883	0.602
	PEOU2 : Learning to use E-banking is easy for us.	0.766	0.587		
	PEOU3 : Our interaction with E-banking is clear and understandable.	0.746	0.557		
	PEOU4 : It is easy to remember how to perform tasks with E-banking.	0.772	0.596		
	PEOU5 : It is easy to get our work done through E-banking.	0.761	0.579		
Perceived Risk (PR)	PR1 : The risk of credit card fraud for online transactions and payments is low.	0.825	0.681	0.846	0.733
	PR2 : I have confidence in the security of the existing online transaction network.	0.886	0.785		
Government Support (GS)	GS1 : The infrastructure of Internet and bandwidth facilities are sufficient for E-banking.	0.825	0.681	0.862	0.676
	GS2 : The government is focused on developing E-banking.	0.760	0.578		
	GS3 : The laws and regulations pertaining to E-banking are efficient.	0.878	0.771		
Perceived Convenience (PC)	PC1 : Easy to login into account.	0.826	0.682	0.860	0.606
	PC2 : Account access when abroad.	0.792	0.627		
	PC3 : I check my transaction details and statement regularly.	0.717	0.514		
	PC4 : I think being computer literate helps me in using e-banking services.	0.775	0.601		
Perceived Self-Efficacy (PSE)	PSE1 : I look forward to using a computer on my job.	0.764	0.584	0.802	0.671
	PSE2 : I feel that I will be able to keep up with the advances happening in the computer field.	0.870	0.757		
Trust (T)	T1 : We trust the payments made through E-banking will be processed securely.	0.756	0.571	0.812	0.752
	T2 : We believe our personal information will be kept confidential.	0.784	0.614		
Intention to Adopt E-Banking (IA)	IA1 : We believe our personal information will be kept confidential.	0.834	0.696	0.861	0.673
	IA2 : In the future, I plan to use Internet banking often.	0.821	0.674		
	IA3 : I intend to increase my use of Internet banking in the future.	0.807	0.651		

Analysis and Results

The analysis was carried out in two stages : the measurement model was assessed first to evaluate the internal consistency, reliability, convergent, and discriminant validity. Later, the structural model was assessed to know the strength and direction of the relationships among the theoretical constructs (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014).

(1) Evaluation of Measurement Model : The questionnaire included nine items on PC ; 12 items on PSE ; five items each on PU, PEOU, and trust ; six items each on PR, government support, and IA. However, many of these indicators had lower outer loadings that had to be removed and Table 1 shows the indicators used to estimate path coefficients and reliability measures of the reflective measurement model. These measures indicate adequate internal consistency since all constructs show composite reliability values above 0.85, much above the threshold value. The indicator reliability shows that all lower order and higher order constructs have loadings above the recommended level of 0.70 (Hair, Ringle, & Sarstedt, 2011).The average variance extracted (AVE) explains more than half of the indicator variances for PEOU (0.602), PU (0.802), PR (0.733), GS (0.676), PC (0.606), PSE (0.671), and IA (0.673) (Table 1).

Table 2. Discriminant Validity : Fornell - Larcker Criterion, Cross - Loadings, and HTMT

	PEOU	GS	IA	PC	PU	PR	PSE	Trust
PEOU1	0.831	0.313	0.596	0.222	0.556	0.604	0.246	0.552
PEOU2	0.766	0.200	0.617	0.159	0.503	0.777	0.198	0.597
PEOU3	0.746	0.222	0.668	0.038	0.385	0.579	0.083	0.492
PEOU4	0.772	0.284	0.453	0.256	0.499	0.453	0.292	0.490
PEOU5	0.761	0.146	0.584	0.006	0.525	0.576	0.015	0.737
GS1	0.276	0.825	0.176	0.102	0.211	0.277	0.181	0.143
GS2	0.078	0.760	0.145	0.009	0.189	0.125	0.105	0.010
GS3	0.326	0.878	0.277	0.032	0.331	0.230	0.067	0.192
IA1	0.676	0.206	0.834	0.000	0.526	0.464	-0.026	0.514
IA2	0.568	0.190	0.821	-0.074	0.460	0.644	-0.084	0.461
IA3	0.609	0.242	0.807	-0.062	0.375	0.553	-0.116	0.425
PC1	0.156	-0.011	-0.010	0.826	0.164	0.113	0.505	0.023
PC2	0.095	0.028	-0.041	0.792	0.112	0.124	0.204	0.083
PC3	0.102	-0.091	0.037	0.717	0.101	0.141	0.182	0.070
PC4	0.168	0.101	-0.123	0.775	0.114	0.112	0.595	0.087
PU1	0.480	0.232	0.378	0.160	0.857	0.332	0.188	0.417
PU2	0.641	0.318	0.586	0.135	0.932	0.436	0.147	0.439
PR1	0.653	0.266	0.505	0.175	0.290	0.825	0.113	0.574
PR2	0.677	0.192	0.638	0.097	0.444	0.886	-0.013	0.677
PSE1	0.146	0.179	-0.160	0.491	0.157	0.037	0.764	0.034
PSE2	0.191	0.055	-0.010	0.398	0.145	0.045	0.870	-0.037
T1	0.740	0.160	0.570	0.082	0.477	0.735	-0.008	0.812
T2	0.168	0.439	0.233	0.659	0.422	0.333	0.546	0.784

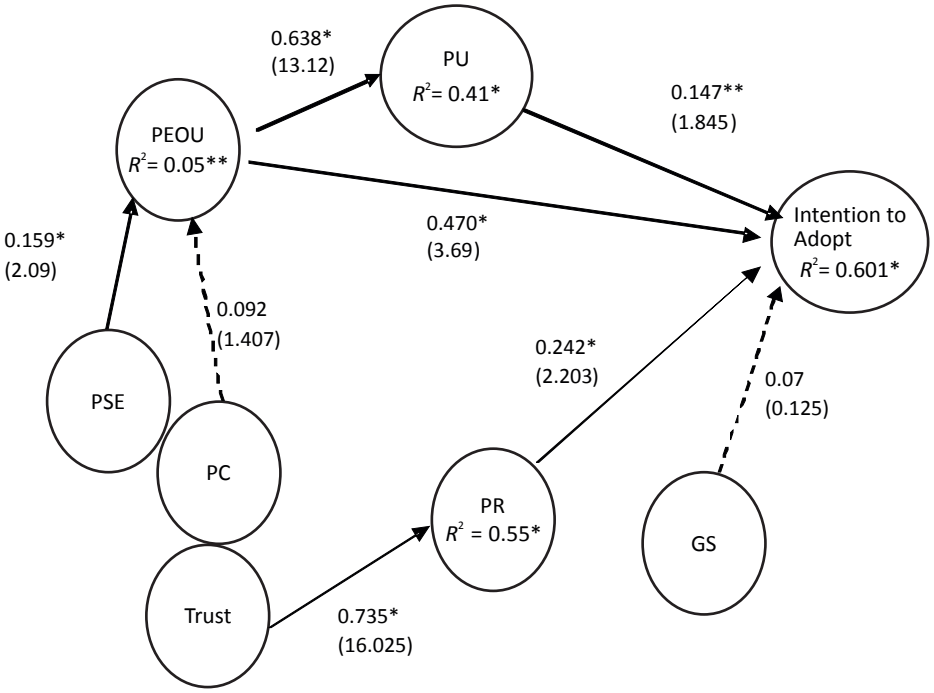
Fornell - Larcker Criterion								
PEOU	0.776							
GS	0.301	0.822						
IA	0.754	0.258	0.820					
PC	0.177	0.021	-0.055	0.778				
PU	0.638	0.313	0.555	0.162	0.895			
PR	0.771	0.262	0.673	0.154	0.436	0.856		
PSE	0.208	0.132	-0.091	0.532	0.182	0.051	0.819	
Trust	0.740	0.160	0.570	0.082	0.477	0.735	-0.008	0.845
Heterotrait - Monotrait Ratio								
PEOU								
GS	0.346							
IA	0.846	0.315						
PC	0.223	0.131	0.108					
PU	0.782	0.372	0.705	0.206				
PR	0.757	0.368	0.761	0.226	0.602			
PSE	0.332	0.243	0.200	0.759	0.302	0.157		
Trust	0.810	0.158	0.654	0.094	0.547	0.714	0.060	

The validity of the measurement model was evaluated by applying the Fornell and Larcker criterion, examination of cross-loadings, and Heterotrait - Monotrait ratio of correlations (HTMT). The results show that the constructs of the model account for more variance in its associated indicators than it shares with other constructs in the structural model (Fornell & Larcker, 1981), suggesting the discriminant validity of the model. The cross-loadings (item level discriminant validity) were examined to corroborate this finding and results confirm discriminating validity since all the indicators have a higher loading on their constructs than other constructs in the structural model. Moreover, the HTMT criteria was applied to check whether indicator loadings were overestimated, a tendency known for PLS - SEM method. As Table 2 shows, all the indicator values are less than 0.85. Hence, discriminant validity is established.

(2) Evaluation of the Structural Model : The path coefficients of the structural model were obtained by running the PLS-SEM algorithm, and the implications of the coefficient of determination were assessed. Multicollinearity measured by variance inflation factors (VIF) in our study was found to be below 2.0. Figure 2 shows the path coefficients representing the relationship between the constructs of the study, t - values and R^2 for PEOU, PU, PC, GS, PSE, PR, and IA. Bootstrapping procedure was carried out to assess the path coefficients' significance with 5000 samples and the option of 'no sign changes' (Hair et al., 2014). R^2 of IA is reasonably high at 0.601, suggesting that our structural model has predictive validity. The PLS model estimation depicts significant path coefficients, implying a strong positive relationship between PEOU and intention to adopt ($\beta = 0.470, p < 0.05$) (H2), PR and IA ($\beta = 0.242, p < 0.05$), and PU and IA ($\beta = 0.147, p < 0.1$) (Table 3). Moreover, PEOU has a direct effect on PU (β : 0.638), PSE has a direct effect on PEOU (β : 0.159), and trust has a direct effect on PR (β : 0.735). The path coefficients for PC $\rightarrow$ PEOU and GS $\rightarrow$ IA are insignificant.

The blindfolding procedure shows that the model has good predictive relevance since its Q^2 value is larger than zero (0.369 for IA ; 0.302 for PU ; 0.38 for PR ; 0.169 for PEOU). The F^2 analysis reveals that PU $\rightarrow$ IA has a value

Figure 2. Model of Intention to Adopt Electronic Banking by SMEs



Note : *p < 0.05, **p < 0.1 ; Dashed lines show insignificant path coefficients.

Table 3. Results of the Structural Model Path Coefficients

Path	Direct Effect	Indirect Effect	Total Effect	*t*	*p-value*
PEOU -> IA	0.470*	0.094**	0.564	5.323	0.000
PEOU -> PU	0.638*		0.638	13.118	0.000
GS -> IA	0.07		0.07	0.125	0.901
PC ->PEOU	0.092		0.092	1.407	0.159
PC -> IA		0.052	0.052	1.342	0.180
PC -> PU		0.059	0.059	1.386	0.166
PU -> IA	0.147**		0.147	1.845	0.065
PR -> IA	0.242*		0.242	2.203	0.028
PSE ->PEOU	0.159*		0.159	2.090	0.037
PSE -> IA		0.09*	0.090	2.100	0.036
PSE -> PU		0.102*	0.102	2.037	0.042
Trust -> IA		0.178*	0.178	2.172	0.030
Trust ->PR	0.735*		0.735	16.025	0.000

Note : * Significant at 5%, ** Significant at 10%

of 0.031, PEOU → IA has a value of 0.16, and PR → IA has a value of 0.57, proving that the latter two constructs have large effect size on the endogenous construct of IA. Among other exogenous variables, PSE to PEOU

(0.019), PC to PEOU (0.012), and GS to IA (0.01) show a small effect and PEOU to PU (0.685) and trust to PR (0.74) display substantial effect.

The mediating effect of PEOU on the relationship between PSE and IA, PC and IA; mediation of PU on the relationship between PEOU and IA; mediating effect of PR on the relationship between trust and IA was evaluated (Table 3) using the procedure described by Preacher and Hayes (2008). The results of mediation effect as given in Table 3 reveal the direct, indirect, and total effect of exogenous variables on the endogenous variables. The path coefficients of PC → IA and PC → PU through the mediation of PEOU is 0.052 ($p > 0.05$) and 0.059 ($p > 0.05$), respectively. The mediation effect of PEOU on PSE → IA and PSE → PU shows the β value of 0.09 ($p < 0.05$) and β value of 0.12 ($p < 0.05$), respectively. The effect of PU as a mediating variable between PEOU and IA shows the β value of 0.094 ($p < 0.1$) and the β value of mediating effect of PR on trust → IA is 0.178 ($p < 0.05$). Thus, an insignificant indirect effect indicating no mediating role of PEOU in the relationship between PC and IA, PC and PU is observed. The standard root mean square residual (0.072), root mean squared residual covariance matrix (RMS theta) (0.235), squared Euclidean distance (d_ULS) (1.10), and the geodesic distance (d_G) (0.798) indicate that the model has a good fit (Dijkstra & Henseler, 2015).

Discussion

This study empirically tests the extended TAM on e-banking adoption among SMEs in Dakshina Kannada district by taking perceived ease of use, perceived usefulness, perceived risk, and government support as antecedents of intention to adopt e-banking among SMEs. It also explores the role of trust and perceived risk, including safety and confidentiality as a precursor to user adoption. The present government is promoting the 'Digital India' campaign to encourage the adoption of Internet technology by businesses. Hence, this study also investigates the effect of government support as one of the determinants of SMEs' intention to adopt e-banking.

The results support most of the hypotheses of the study; the model produces six significant direct effects and four significant indirect effects, showing directional linkages between independent and dependent variables except the hypothesized relationship between GS and IA. Perceived usefulness, perceived ease of use, and perceived risk influence the behavioral intention to adopt electronic banking. Therefore, hypotheses Ha1, Ha2, and Ha7 are supported. Moreover, PEOU directly affects PU (Ha3), PSE significantly influences PEOU (Ha4), and trust greatly affects PR (Ha6). So, hypotheses Ha3, Ha4, and Ha6 are supported. The most insignificant result evident from our analysis is that government assistance does not influence intention to adopt e-banking. Thus, we accept the null hypothesis that GS does not affect IA (Ha8). Likewise, PC does not impact PEOU and consequently, Ha5 is rejected.

Few mediating effects are observed : (a) perceived usefulness mediates the relationship between perceived ease of use and intention to adopt e-banking, (b) perceived ease of use mediates the relationship between perceived self-efficacy and intention to adopt e-banking, (c) perceived risk mediates the relationship between trust and intention to adopt, and (d) perceived ease of use mediates the relationship between perceived self-efficacy and perceived usefulness.

The total effect of the constructs on behavioural intention to adopt e-banking is ranked as follows: Perceived ease of use > Perceived usefulness > Perceived risk > trust. Perceived self-efficacy explains 5% of the variance of PEOU; trust explains 55% of the variance of PR, PEOU explains 41% of the variance of PU. PEOU, PU, and PR jointly explain 60.1% of the variance of intention to adopt e-banking by SMEs, indicating that extended TAM model can explain a higher proportion of variation of user intention. The study provides support for the contention that PEOU performs a mediating role in the link between PSE and IA, and PU performs a mediating role between PEOU and IA, and PR between trust and IA. The primary focus should be on PEOU and PR, which are significant antecedents. These findings will be discussed in the following subsections.

(1) Perceived Self - Efficacy : Perceived self-efficacy has a direct effect on PEOU and indirect effect on PU and IA through the mediation of PEOU; hence, PSE enhances PEOU which, in turn, positively influences perceived usefulness and intention to adopt. When SMEs develop confidence that they can carry out banking transactions without difficulty, the apprehension of digital illiteracy would be converted to likeability and there would be a better appreciation of the usefulness of e-banking. SMEs struggle to use online systems due to less competence and knowledge of the functionalities of the e-banking system. Hence, banks should arrange training programmes that focus on improving digital literacy to enhance self-efficacy and marketing interventions that communicate usefulness and ease of use of e-banking.

(2) Perceived Convenience : Perceived convenience (PC) does not have any significant effect on PEOU. Unlike other studies (Tang & Chiang, 2009), this study failed to prove a positive indirect effect of PC on IA. SMEs may not adopt e-banking even if e-banking provides convenient and accessible services without spatial or temporal barriers. Thus, even if the users feel it convenient to operate an e-banking system, it should not be construed as the system is easy to use or operate or provides benefits.

(3) Perceived Ease of Use : PEOU is found to be more influential than PU in explaining user intention. The intention to adopt will be higher if the users find an e-banking system easy to understand, use, and operate. This finding was confirmed by other studies (Amin, 2007 ; Davis et al., 1989 ; Jahangir & Begum, 2008; Venkatesh & Davis, 2000). Cheng et al. (2006) and Lee (2009) supported our results on the indirect effect of PEOU on the link between PU and IA. The lesser the time and effort to learn to use online banking, better would be the adoption by SMEs.

In Karnataka, SMEs are in the initial stages of adopting e-commerce and Internet technology for business operations. They may lack digital literacy required to carry out e-banking transactions including creating or storing passwords, manoeuvring the banks' websites, and they are wary of concluding financial transactions without compromising security and privacy. On account of this, ease of using the system becomes an utmost priority for acceptance of e-banking and it is suggested that PEOU might be a major factor in determining not only perceived usefulness of e-banking, but it may also be a predominant factor affecting user adoption. Most of the SME owners/ managers who responded to this survey were proprietors, or partners, or managers of SMEs, were not well educated, were not computer savvy, and were middle aged (mid-40s). In this age group, people are usually apprehensive of learning new things like using online banking despite these systems being more prevalent and standardized. Therefore, software developers are expected to provide practical easy to use functions.

(4) Perceived Usefulness : The results of our model suggest a direct and positive influence of PU on IA (Amin, 2009 ; Lee, 2009). If SMEs perceive e-banking as beneficial, they are more likely to adopt e-banking services. The banks should create awareness among SME customers and communicate the advantages of e-banking such as lower transaction cost and high speed of transactions, and lower risk of carrying cash to branches compared to traditional brick-mortar banking.

(5) Trust and Perceived Risk : Another significant factor that influences e-banking adoption is Internet trust measured by the security of online banking system and privacy of transactions. Trust significantly affects the perceived risk of banking operations and intention to adopt is negatively affected by perceived risk. If SMEs are wary of security and privacy of financial data transmission over an impersonal medium such as online banking portals, the apparent distrust would heighten the risk perception and lower the intention to adopt the e-banking alternative for business transactions.

Our finding was also echoed by other researchers (Grabner- Krauter & Faullant, 2008) who found that Austrian consumers had little trust in e-banking, especially the website and the underlying Internet infrastructure. SMEs may not only lack knowledge of Internet technology but may also be skeptical about the security and privacy of business transactions, especially if stringent laws and regulations governing online transactions are inadequate. In the absence of the involvement of bank staff in concluding financial transactions of the firm as evident in traditional banking, e-banking adoption requires multi-layer authentication methods and encryption of data to ensure the security of operations and prevent fraudulent activities, including identity theft. Therefore, banks should take measures to prevent fraudulent activities, including phishing attacks through encryption and foolproof authentication procedures, reduce breakdown of websites, and include assurance by staff for rectifying erroneous transactions.

(6) Government Support : Government support was not a significant determinant of e-banking, and this result surprisingly contradicts the prior studies (Chong et al., 2010). Despite the efforts of the government to encourage IT adoption, SMEs still lag behind and restrict their transactions to checking account, balance information, and in rare cases, use it for NEFT transfers. It is imperative for the government to strengthen Internet infrastructure and bandwidth for greater adoption of e-banking.

Research and Managerial Implications

The findings of our study have several research and managerial implications. In any effort to augment e-banking adoption, self-efficacy and convenience should be given priority through motivating potential SME customers to learn computer and acquire the skill to use the Internet, which would not only increase self- efficacy, but also instill confidence in using the e-banking system. SME managers and owners may lack digital literacy required to carry out e-banking transactions, including creating or storing passwords, manoeuvring the banks' website, and being wary of concluding financial transactions without compromising security and privacy.

Banks should create awareness among SME customers and communicate the advantages of e-banking such as lower transaction cost and provide high speed of transactions, quick processing of credit applications, account information at the fingertip, and lower risk of carrying cash to branches compared to traditional brick-mortar banking to SMEs to lure them towards online banking. The banks can build trust by posting security seals and using pamphlets or posters at branches of banks that inform public about safety and privacy features of e-banking and redressal of grievances for erroneous transactions or any other issues related to online banking. Such publicity efforts would change non-adopters' misperceptions of trustworthiness of e-banking and reduce the perceived risk. The government should frame clear and comprehensive cyber laws governing online monetary transactions before promoting Digital India in general and e-banking in particular.

Conclusion

In India, SMEs lag behind in the adoption of technology for enhancing business performance compared to large companies. This study investigated on what prevents the adoption of online banking by SMEs and finds perceived ease of use, trust, and perceived risk as the most important antecedents to adopt e-banking. If SMEs find e-banking system easy to understand and use, the perception of its usefulness will be higher, and intention to adopt would be greater. Therefore, confidence in carrying out the online financial transactions through the e-banking system with a user-friendly and attractive interface and inbuilt impermeable security features enhances the perception of usefulness and thereby increases the likelihood of adoption. The banks should allocate more resources to create an

easy-to-use system and adopt risk reduction measures that inhibit identity theft, fraud, or intrusion, and thereby foster trust in prospective SMEs. The banks should also acquire and advertise security features to enhance trust in e-banking; for this purpose, posting, privacy, and trust seal on the website ; endorsing via online testimonials ; disseminating privacy policies ; and highlighting security features is warranted.

Limitations of the Study and Directions for Future Research

This study has been carried out in Karnataka, hence the findings are not generalizable to entire India. We have considered older version of TAM model and excluded certain variables that might be important in explaining technology adoption such as social influence, perceived credibility, system and information quality, switching cost, and actual usage. The limitations of SEM are applicable to this study too.

Newer models like UTAIT can be conceptualized in the Indian context by including certain culture specific factors to enhance our understanding of the process and inhibitors of technology adoption. The future studies should take a larger sample by including SMEs from other parts of India where technology penetration is poor and the politico - social environment inhibits adoption of digital finance.

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