

# **Exploring the Critical Success Factors (CSFs) and Barriers to Adoption of ICTs in Corporate Financial Services**

**Manish Kumar Rajak**

Research Scholar, School of Management Studies  
Motilal Nehru National Institute of Technology Allahabad, India  
[mkrajak5796@gmail.com](mailto:mkrajak5796@gmail.com)

**Somen Dey**

Assistant Professor, School of Management Studies  
Motilal Nehru National Institute of Technology Allahabad  
[somen@mnnit.ac.in](mailto:somen@mnnit.ac.in)

**G. P. Sahu**

Professor, School of Management Studies  
Motilal Nehru National Institute of Technology Allahabad  
[gsahu@mnnit.ac.in](mailto:gsahu@mnnit.ac.in)

## **Abstract**

Information and Communication Technologies (ICTs) are extensively being incorporated by financial institutions, operating in both the public and private sectors. ICTs refer to a wide range of IT-enabled technologies to manage electronic information quickly and effectively, thus giving a competitive edge to the organizations to compete in the global markets. However, proper implementation of ICTs in corporate financial services is still challenging with different barriers. The paper attempts to develop a theoretical model by identifying the various Critical Success Factors (CSFs) and barriers through an exhaustive and state-of-the-art review of the existing literature to adopt ICTs in corporate financial services successfully. The developed theoretical model is empirically investigated using in-depth interviews with employees working in corporate financial services. The regression results showed that social influence, effort expectancy, risk-taking, and top management support significantly influence the ICT adoption. Alternatively, lack of IT skills, lack of socio-economic conditions with ICT adoption, and the lack of environmental exposures are barriers to successful ICT adoption.

## **Keywords**

ICTs Adoption, Corporate Financial Services, Critical Success Factors (CSFs), Barriers

## **1. Introduction**

ICT encompasses all the digital technologies which facilitate the use of information (storage, retrieval, and transmission) by individuals, businesses, and organizations, enabling greater efficiency, effectiveness, and responsiveness to customers (BAU 2020). Multiple organizations operating in diverse sectors are readily adopting ICT services (Chowdhury 2006). ICT adoption in the corporate finance sector significantly contributes to cost reductions of financial intermediation services and the expansion of business activities (Dewan and Ramaprasad 2014). According to World Bank Report (2019), ICT utilization has brought significant transformation to the Organization for Economic Corporation and Development (OECD) economies. The lack of a proper framework for successful ICT adoption in corporate finance is still a challenge that demands significant research attention (Kulkarni et al. 2019). The paper explores and investigates the different CSFs and barriers to successful ICT adoption by developing a theoretical framework. The results obtained may be helpful for managers, policymakers, business analysts, and IT specialists in dealing with the planning and implementation of ICTs incorporate.

## **1.1 Objectives**

Based on our initial interpretations and evidence from the literature on ICT adoption in corporate financial services, the following research objectives (ROs) are set, which are described as follows:

[RO1] To carry out a state of the art Literature review on the application of ICT in Corporate financial services.

[RO2] To identify the CSFs for effective adoption of ICTs in corporate financial services

[RO3] To identify the barriers affecting the adoption of ICT in corporate financial services

[RO4] To develop the theoretical model for effective adoption of ICTs in corporate financial services based on identified CSFs and barriers

[RO5] To validate the developed theoretical model and propose a set of recommendations for effective adoption of ICTs in corporate financial services based on the obtained results

## **2. Literature Review**

Research on financial services innovation has primarily focused on identifying the factors contributing to creating successful new services (Avlonitis et al. 2009; Cooper and Brentani 1991). Others have since expanded on (Lasch et al. 1994) findings, detailing the impact of ICTs on financial service innovations. In their study, (Chen et al. 2009) emphasized the contribution of ICTs in distinguishing the success of financial services. Very few studies exist about deploying ICTs to provide innovative financial services (Berger and Nakata 2013). Different models such as those proposed by (Themistocleous and Irani 2001; Shung and Seddon 2000; Ward and Griffiths 1997) also exist in the literature, which classifies the barriers to information systems infrastructure development. Performance expectancy is conceptualized as how individuals believe that applying the technology will help them attain job performance gains (Venkatesh et al. 2003). It can also be defined as an individual's perception of additional functional benefits derived from using the relevant technology in the task at hand. Performance expectancy is found to positively impact employees' behavioral intention to adopt technology studies (Saleh et al. 2014). Social influence is how individuals perceive that essential others believe they should apply the new system (Venkatesh et al. 2003).

Social influence is defined as the influence of people important to the user on the adoption behavior (Zhou et al. 2010). User intention is influenced profoundly by social factors such as the values and preferences of society, including family, friends and peers, and other users (Alsheikh and Bojei 2014). The user generally switches to socially recognized technologies from socially unrecognized technologies (Jahya 2004; Baabdullah et al. 2019). Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system (Venkatesh et al. 2003). As an extension of the Unified Theory of Acceptance and Use of Technology (UTAUT) model, it is found that user adoption and usage of information technology are influenced adoption of information technology. Effort Expectancy is conceptualized as the degree of ease associated with the use of the system (Venkatesh et al. 2003). Effort expectancy is the extent of convenience perceived for using the system (Davis et al. 1989; Szajna 1996; Venkatesh 1999). The perceived risk is considered an essential factor influencing customer behavior (Pavlou 2003).

The dimension includes performance, financial, social, psychological, security, privacy, and physical risks (Lim 2003). Risk-Taking Ability is a degree of uncertainty related to using any new technology (Burgucu et al. 2010). Top management support has a vital role in the ICT adoption decision. This support in funding is essential for developing infrastructure and people for ICT adoption within the organization (Peansupap and Walker 2006). Aragaw (2018) indicated that insufficient computer availability, inadequate electric power, and inaccessible internet connection are barriers to implementing ICT in the corporate sector. The adoption of facilities is dependent upon the availability of internal and external technology resources (Premkumar and Ramamurthy 1995; Thong 1999). Several studies have found prior experience necessary for technology adoption decisions (Bandura 1977; Igbaria et al. 1995; Perera and Perera 2021; Lippert and Forman 2005). Lack of management policies hinders the utilization of technology adoption (e-management) (Seresht et al. 2008). Many administrative practices such as insufficient motivation, inappropriate awareness, and the short life cycle of management prevent the effective utilization of new technologies. Lack of organizational structural also hinders the utilization of new technologies. The literature identifies the management of knowledge, employees, and internal communications as instrumental in terms of corporate success and survival (Kitchen 2002). Cost is another crucial issue that guides the adoption and growth of communication technology (Thomas 1987). Developing Countries are often deficient in the funds to make reasonable investments in ICTs. (Barton and Bear 1999) found one of the constraints was the access to capital money for equipment or raw material, a shortage of adequately skilled personnel, and a lack of efficient business management expertise or business model, irrespective of the fact that ICT is in use or not. Lack of environmental exposures hinder the adoption of new IT/IS technologies (Seresht et al. 2008; Berman et al. 2007).

### 3. Theoretical Framework

Based on the set research objectives and exhaustive review of existing literature on ICT adoption in corporate financial services, we selected six CSFs and six barriers that significantly affect the successful adoption of ICTs in corporate finance. The CSFs consists of [1] Performance Expectancy, [2] Social Influence, [3] Facilitating Conditions, [4] Effort Expectancy, [5] Risk-Taking, and [6] Top Management Support. The six barriers which pose a challenge to successful ICT adoption as included in our research model include [1] Inadequate IT Infrastructure, [2] Lack of IT Skill, [3] Lack of Management Policies, [4] Lack of Organizational Structure, [5] Lack of Socio-Economic Conditions, and [6] Lack of Environmental Exposures. The final proposed model is depicted in Figure 1.

#### HYPOTHESIS:

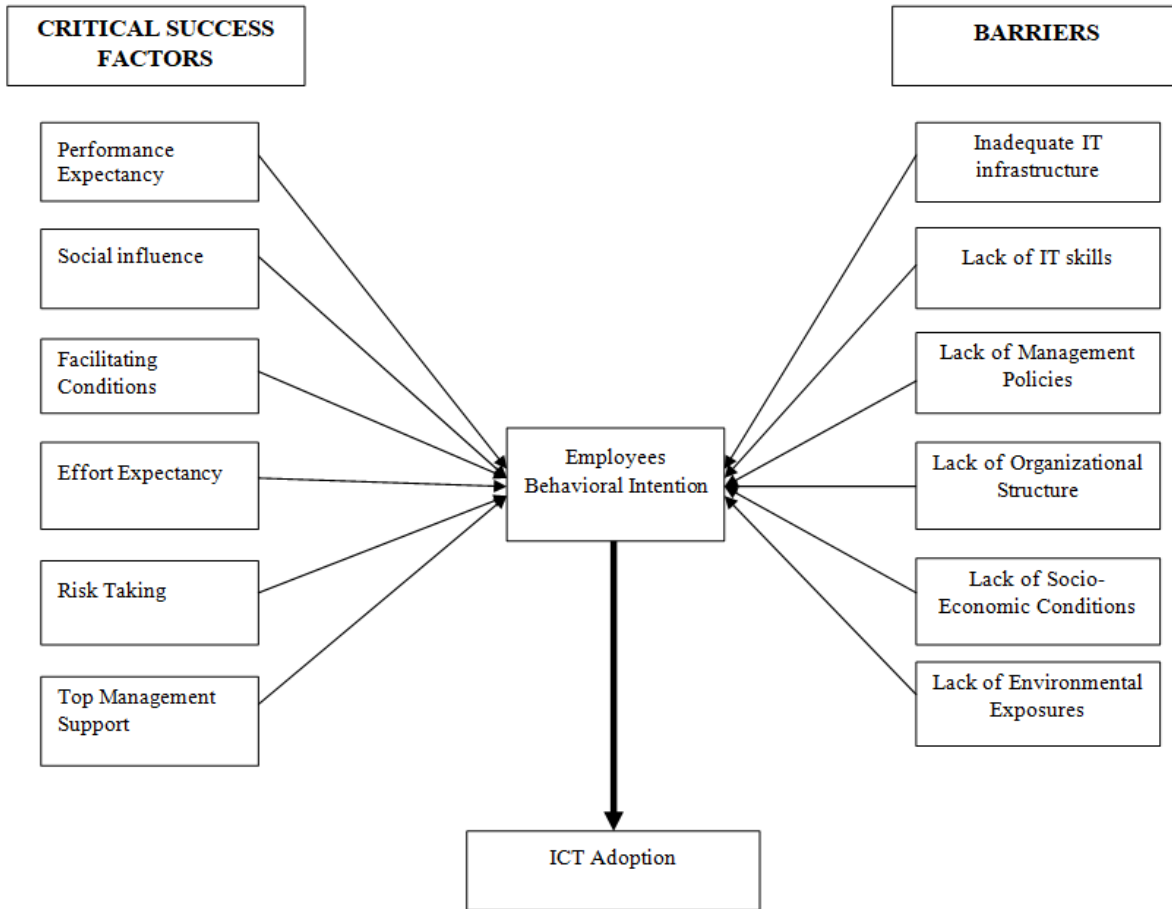


Figure 1 Research Model

- [H1]- Performance Expectancy will significantly influence Employee's Behavioral intention to adopt ICTs in corporate financial services.
- [H2]- Social Influence will significantly influence Employee's Behavioral intention to adopt ICTs in corporate financial services.
- [H3]- Facilitating Conditions will significantly influence Employee's Behavioral intention to adopt ICTs in corporate financial services.
- [H4]- Effort Expectancy will significantly influence Employee's Behavioral intention to adopt ICTs in corporate financial services.
- [H5]- Risk-Taking will significantly influence Employee's Behavioral intention to adopt ICTs in corporate financial services.

- [H6]- Top Management Support will significantly influence Employee's Behavioral intention to adopt ICTs in corporate financial services.
- [H7]- Inadequate IT Infrastructure significantly affects the Behavioral intention to adopt ICTs in corporate financial services.
- [H8]- Lack of IT Skills significantly affects the Behavioral intention to adopt ICTs in corporate financial services.
- [H9]- Lack of Management Policies significantly affects the Behavioral intention to adopt ICTs in corporate financial services.
- [H10]-Lack of Organizational Structure significantly affects the Behavioral intention to adopt ICTs in corporate financial services.
- [H11]-Lack of Socio-Economic Conditions significantly affects the Behavioral intention to adopt ICTs in corporate financial services.
- [H12]-Lack of Environmental Exposures significantly affects the Behavioral intention to adopt ICTs in corporate financial services.

#### 4. Empirical Investigation and Data Collection

The developed theoretical model is empirically investigated to investigate the CSFs and barriers to ICT adoption in corporate financial services. The target population consists of existing employees of corporate financial services in India. Around 196 employees were surveyed to collect the responses for ICT adoption. SPSS 23.0 software package is utilized for data analysis. The collected responses are examined for consistency and validity. The results of descriptive statistics are depicted in Table 1. Regression is performed to validate and test the different research hypotheses. Tables 2 and 3 show the results of the model summary. The value for *R square* is .705, which means that the model explains 70.5% variance in the model, whereas model 2 shows the value for R square as .629 which means the model 2 explains 62.9% variance in the model 2. The adjusted R square value for model no.1 is .695 which indicates that model 1 explains 69.5% of the variance in the dependent variable. And model no. 2 explains the adjusted R square value is .617 which predictor of 61.7% in the dependent variable. The value of R Square should be close to the r square indicating the fitness of the model.

Table 1: Skewness, Kurtosis, Mean, Standard deviation and Cronbach's alpha

CONSTRUCTS	ITEMS	SKEWNESS	KURTOSIS	MEAN	S.D	CRONBACH'S ALPHA
Performance Expectancy	PE1	-.768	.002	3.183	.949	.697
	PE2	-.726	-.616			
	PE3	.043	-1.285			
	PE4	.190	-1.250			
Social influence	SI1	-.556	-.652	3.557	1.124	.815
	SI2	-.679	-.487			
	SI3	-.690	-.562			
	SI4	-.922	-.232			
Facilitating Conditions	FC1	-.632	-.358	3.443	1.035	.907
	FC2	-.566	-.472			
	FC3	-.464	-.414			
Effort Expectancy	EE1	-.556	-.288	3.551	1.071	.871
	EE2	-.660	-.567			
	EE3	-.893	.046			
Risk Taking	RT1	-.505	-.358	3.374	1.009	.880
	RT2	-.496	-.450			
	RT3	-.510	-.545			
Top Management Support	TMS1	-.542	-.144	3.362	.975	.861
	TMS2	-.412	-.452			
	TMS3	-.579	-.291			
Inadequate IT Infrastructure	IITI1	-1.304	.825	3.783	1.069	.940
	IITI2	-1.031	.247			
	IITI3	-.686	-.594			

	IITI4	-.697	-.481			
Lack of IT Skills	LoITS1	-.556	-.652	3.507	1.125	.890
	LoITS2	-.679	-.487			
	LoITS3	-.690	-.562			
Lack of Management Policies.	LoMP1	-1.040	1.043	3.662	.755	.870
	LoMP2	-.556	-.652			
	LoMP3	-.679	-.487			
	LoMP4	-.649	-.021			
Lack of Organizational Structure	LoOS1	-.470	-.245	3.503	.996	.609
	LoOS2	-.662	-.210			
	LoOS3	-.719	-.244			
Lack of Socio-Economic Conditions	LoSEC1	-.117	-1.102	3.403	1.098	.857
	LoSEC2	-.478	-.923			
	LoSEC3	-.354	-.657			
Lack of Environmental Exposures	LoEE1	-.612	.330	3.505	.915	.882
	LoEE2	-.265	-.575			
	LoEE3	-1.042	.568			
Employees Behavioral Intention	EBI1	-.898	-.217	3.712	1.181	.861
	EBI2	-.855	-.300			
	EBI3	-.919	-.215			
	EBI4	-.826	-.361			

Table 2: Model 1 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.839 <sup>a</sup>	.705	.695	.65180
a. Predictors: (Constant), TMS, SI, RT, PE, FC, EE				

Table 3: Model 2 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.793 <sup>a</sup>	.629	.617	.73111
a. Predictors: (Constant), LoEE, LoOS, LoITS, LoSEC, IITI, LoMP				

The results of ANOVA analysis is shown in Tables 4 and 5. It is found that in model 1 (Table 4), the value of  $F$  is 75.190, and in model 2 (Table 3), the value of  $F$  is 53.30 is significant ( $p < 0.05$ ). Since the value of  $F$  is much greater than 1, it is concluded that such a high value cannot happen by chance alone. It can be inferred that Social Influence, Effort Expectancy, Risk-Taking, and Top Management Support significantly affect Employee's Behavioral Intention. And Lack of IT Skills, Lack of Socio-Economic Conditions, and Lack of Environmental Exposures significantly affect Employee's Behavioural Intention in the Corporate Financial Service.

Table 4: ANOVA (Model 1)

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	191.666	6	31.944	75.190
	Residual	80.297	189	.425	

	Total	271.963	195		
a. Dependent Variable: EBI					
b. Predictors: (Constant), TMS, SI, RT, PE, FC, EE					

Table 5: ANOVA (Model 2)

Model	Sum of Squares	df	Mean Square	F	Sig.
2	Regression	170.939	6	28.490	53.300
	Residual	101.024	189	.535	
	Total	271.963	195		
a. Dependent Variable: EBI					
b. Predictors: (Constant), LoEE, LoOS, LoITS, LoSEC, IITI, LoMP					

The beta value as indicated for model 1 (Table 6) shows the individual contribution of each predictor to the model the absolute values of beta are obtained for (0.654) for Social Influence, (0.172) for Effort Expectancy, (-0.103) for Risk Taking and (0.163) for Top Management Support. And model 2 (Table 7) Lack of IT Skills beta value is (0.784), Lack of Socio-Economic Conditions (-0.147), and Lack of Environmental Exposures (0.191). The corresponding t-values for all the predictors are significant at ( $p < 0.05$ ) as per the recommendations of (Field 2009).

Table 6: Coefficients (Model 1)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.209	.211		.988	.325
	PE	-.027	.062	-.022	-.435	.664
	SI	.687	.049	.654	13.996	.000
	FC	.061	.076	.054	.808	.420
	EE	.190	.078	.172	2.431	.016
	RT	-.120	.058	-.103	-2.054	.041
	TMS	.198	.075	.163	2.634	.009
a. Dependent Variable: EBI						

Table 7: Coefficients (Model 2)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.101	.353		3.123	.002
	IITI	-.067	.081	-.060	-.821	.413
	LoITS	.823	.094	.784	8.776	.000
	LoMP	-.098	.155	-.062	-.631	.529
	LoOS	.002	.087	.002	.029	.977
	LoSEC	-.158	.054	-.147	-2.917	.004
	LoEE	.246	.070	.191	3.518	.001
a. Dependent Variable: EBI						

## 5. Results and Discussion

Findings indicate that four major factors influence the adoption of ICTs in Corporate financial services, i.e., social influence, Effort Expectancy, Risk-taking, and Top Management Support. Social influence is how an employee perceives that others believe they should apply the new system. Effort Expectancy defines how employees themselves are connected to a service if that is appropriate and fits into the work style. Risk-Taking means how employees feel secure in adopting ICTs regarding financial risk, Performance risk, and social risk. Top management Support develops the set of employees' minds to use ICT to fulfill potential requirements needs. The three barriers

majorly affect the ICT adoption, i.e., Lack of IT Skills, Lack of socioeconomic conditions, and Lack of Environmental Exposures Lack of IT Skills explains the Lack of IT training programs in the corporate sector, the Shortage of well-trained IT staff in the market, and the lack of employees with integration skills. Shortage of salaries and IT specialist staff. All are Lack of IT Skills variables components to barriers to ICT adoption in corporate financial services. Second, Lack of Socio-Economic Conditions includes cost, which is one of the essential barriers that decides or guides the adoption and growth of Information and Communication Technology in corporate financial services. And last Lack of Environmental Exposure includes an integrated IT network in the organization. It is a barrier to adopting ICTs to affect the corporate financial services at the decision-making in their organization. The summary of hypotheses testing are shown in Table 8.

Table 8: Summary of Hypotheses Testing

Hypothesis	Predictor/Independent variable	Direction of relationship	Dependent variable	Regression analysis
H1	Performance Expectancy	—————>	Employees Behavioral Intention	Not Supported
H2	Social influence	—————>	Employees Behavioral Intention	Supported
H3	Facilitating Conditions	—————>	Employees Behavioral Intention	Not Supported
H4	Effort Expectancy	—————>	Employees Behavioral Intention	Supported
H5	Risk Taking	—————>	Employees Behavioral Intention	Supported
H6	Top Management Support	—————>	Employees Behavioral Intention	Supported
H7	Inadequate IT Infrastructure	—————>	Employees Behavioral Intention	Not Supported
H8	Lack of IT Skills	—————>	Employees Behavioral Intention	Supported
H9	Lack of Management Policies.	—————>	Employees Behavioral Intention	Not Supported
H10	Lack of Organizational Structure	—————>	Employees Behavioral Intention	Not supported
H11	Lack of Socio-Economic Conditions	—————>	Employees Behavioral Intention	Supported
H12	Lack of Environmental Exposures	—————>	Employees Behavioral Intention	Supported

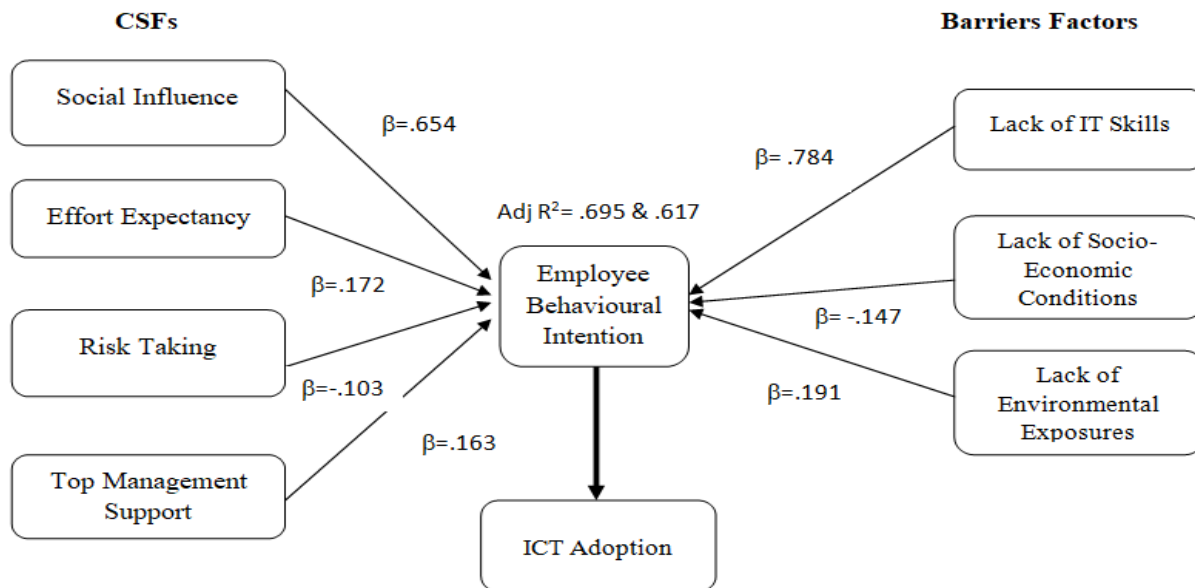


FIGURE 2: VALIDATED REGRESSION MODEL

## 6. Conclusion

The goal of this research was to assist corporate IT practitioners in understanding how to use and manage information and communications technology to revitalise business processes, improve business decision-making, and achieve a competitive advantage through ICT adoption. The identifying of four important CSFs that influence ICT adoption in corporate finance services is the main finding of the above-mentioned study. Social Influence, Facilitating Conditions, Risk-Taking, and Top Management Support are the four components. And there are three major barriers to ICT adoption in corporate financial services. Lack of IT skills, Lack of Socio-Economic Conditions, and Lack of Environmental Exposure are the three variables. This implies that adequate information technology planning, as well as suitable staff and team management competence, are required. The findings of this research demonstrated that the maturity process produces more consistent and predictable outcomes. By 69.5 percent of the variation in the Employee's Behavioural Intention to the adoption of ICTs in corporate financial services, the major statistical results supported the predictive validity of the conceptual model 1. Throughout the study, it was determined that Social Influence, Effort Expectancy, Risk-Taking, and Top Management Support all had a good impact on ICT adoption in corporate financial services, with the remainder of the factors having a little impact. In the variance of the Employee's Behavioural intention to affect the adoption of ICT in corporate financial services, model 2 outperformed model 1 by 61.7 percent. Throughout the research, it was discovered that a lack of IT skills, Lack of socioeconomic conditions, and Lack of environmental exposures all had favorable impacts on the adoption of ICT in corporate financial services, while the rest of the factors had little effect.

## Limitation

Even though this study represents a fruitful attempt in the area of adoption of ICT in corporate financial services, it is restricted by limitations. Because this research data was gathered from a small sample of corporate sector employees from a few states, people respond differently backed on the different education levels. This study was conducted in the Indian context; however, if it was conducted in the global context, the results would be different. Because India is a developing country, respondents in India are more accurate than in other developing countries. The majority of the respondents in this survey were young, educated, and well versed with computers and the internet; the findings apply to other segments of the present population with varying characteristics. This research solely covers only one type of financial service i.e. the business sector.

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## **Bibliography**

**Manish Kumar Rajak** is a Ph.D. student at the Department of School of Management Studies at Motilal Nehru National Institute of Technology Allahabad in Prayagraj, Uttar Pradesh. He completed his graduation from Patna University, Patna, and post-graduation from Banaras Hindu University, Varanasi, specializing in Financial Management. His current research interests include the application of Information and Communication Technologies (ICTs) in finance. and I am pursuing my Ph.D. under the supervision of Prof. G. P. Sahu and Assistant Prof. Somen Dey.

**Dr. Somen Dey** is currently Assistant Professor in the School of Management Studies, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, Uttar Pradesh, India. He obtained his B. Tech (Hons) degree in Production and Industrial Engineering from National Institute of Technology, Jamshedpur, India, and Master of Engineering (ME) degree in Production Engineering with a specialization in Production Management from the Department of Production Engineering, Jadavpur University, Kolkata, India. He earned his doctorate (Ph.D.) in Operations Management and Manufacturing Strategy from the Department of Industrial and Management Engineering, Indian Institute of Technology Kanpur, India. His primary research interests include operations management, supply chain management, organization, and manufacturing strategy, strategic information systems (IS), production planning and control, operations research, and optimization techniques. He also has secondary research interests in data mining, machine learning algorithms, and knowledge discovery (KDD) applications in manufacturing and production planning and control. He received the Best Track Paper Award in Operations Management at the 7th Annual Conference on Industrial Engineering and Operations Management, IEOM, April (11th–13th) 2017, Rabat, Morocco.

**Prof. G. P. Sahu** is currently Professor in the School of Management Studies, Motilal Nehru National Institute of Technology Allahabad, India. He obtained his B.E. degree in Metallurgical Engineering from National Institute of Technology, Jamshedpur, India, and Master of Management Studies (MMS) in Systems Management from Motilal Nehru National Institute of Technology Allahabad, India. He earned his doctorate (Ph.D.) in Information Systems from Indian Institute of Technology Delhi, India and completed his Post Doctoral Fellowship (PDF) from California State University Monterey Bay, USA. His primary research interests include Management Information Systems, E-Government, IS/IT Planning, E-Business, Digital Marketing, Supply Chain Management, Relationship marketing, Green IT.