



Empirical Investigation of Usage of Electronic Finance in the Sectors of Construction Management

***Dr. K.T. Vigneswara Rao**

Assistant Professor Grade-1

National Institute of Construction Management & Research (NICMAR), N.I.A. Post Office, 25/1, Balewadi Road, Ram Nagar, Baner, Pune, Maharashtra 411045, India

(Corresponding author: ktvrao@nicmar.ac.in*)

ABSTRACT

Internet banking is a division of the Electronic Finance (EF). EF is increasing at a quick pace and has emerged as the focal point of money transactions between Construction Organizations (COs) and their customers (Fund's Deliverers). To consumers, EF offers enormous benefits as well as flexibility in terms of facilitating cash transactions without delay while maintaining a high level of security and convenience. As a result, in today's world, EF has become a boon for the Construction Management (CM) industry. The current study focuses on the empirical investigation of consumers' use of EF services for the purpose of transferring funds to cooperative organisations. In order to study this, the techniques of multiple regression and ANOVA are used on a sample size of 120 respondents or clients of COs. The data is collected through 14 questionnaires. After collecting data, the data is classified and tabulated through SPSS. The findings of the study showed that 59 % out of 100% transactions between Construction Organizations (COs) and its customers is supported by EF due to security, trust and risk saving concerns. In this research, it eventually concluded that the factors such as security, trust, risk saving are found with p-value of 0.040, p-value of 0.010 and p-value of 0.027 respectively has significant influence in the adoption of EF by customers for transferring funds to COs.

Keyword: Construction Organizations (COs); Electronic Finance (EF); ANOVA, Trust; questionnaires.

1.Introduction:

The Indian Banking sector is evolving towards electronic finance, and it has become a requirement in many industries today. Traditionally, the company was managed by depositing cash by hand at the bank's central or branch office in order to transfer funds to someone. However, thanks to the Internet of Things (IoT) and technical advancements, customers now prefer to transfer funds via Internet Banking/EF; the funds may be easily moved to other enterprises or people with a high degree of agility, security, and confidence. Banks in the country have now provided consumers with Automated Teller Machines (ATMs) in almost every location, and telebanking has proven to be a godsend in the context of EF service. E-banking (internet banking) is also known as Net banking or electronic finance, and it facilitates rapid fund transfers. This study aims to investigate the utility or evaluate the newly developed banking technology, Internet Banking/EF.

At the global place, it is observed that EF has brought one of the most necessary technological changes in the Industry. EF provision helped the many companies to transfer fund using electronic communication and working out. In practice, EF includes E-payment, E-trading, and E-banking. According to the definitions from the Bank for International Settlement, EF creates considerable efficiency and is superior than traditional paper-based solution. EF is referred as a system that provides electronic order routing, automated trade execution, and electronic spreading of pre-trade and post-trade information between fund receivers to fund's deliverer. With the help of the EF systems, the transactions can be executed at a remote server and information can be conveyed to a remote location. EF means the provision of retail and small value banking products and services through electronic channels. Today, the clients have enjoyed the great convenience of EF and bankers have improved the cost efficiency of banks. It is observed that Construction Management (CM) is found as a major field for managing the construction operations as well as practices for completing the construction task. CM dealt with issues at both levels/spheres such as macro and micro. Today, many construction firms such as L&T Engineering Construction & Contracts Division (ECC), Larsen & Toubro Infrastructure Development Projects Limited (L&T IDPL), Reliance Infrastructure Limited, Tata Projects Limited, AFCONS Infrastructure Limited, NBCC, IRCON International Limited are using the EF service for procuring fund from their customers on infrastructure's contract [Wang et al., \(2017\)](#), [Venkateshand Bala \(2008\)](#). The aim of present study to investigate the familiarity of EF service between COs and their customers and also finding the factors, which make the customer's happy to transfer the fund by EF to COs. The author conducted systematic literature survey to recognize the factors and evaluate and conclude the important factors, which make the customer's happy to transfer the fund by EF. The relevant literature is shown below.

2.Literature survey:

Karjaluoto et al., (2002) the authors an attempt to determine those factors that influence the formation of consumer attitude toward Electronic Finance (EF). Hutchinson and Warren (2003) the authors studied the EF service for electronic commerce and determine its benefits to the customers. In the study, EF security measures and various techniques for privacy of customers' data have been discussed. Rotchanakitumnuai and Speece (2003) the authors found that corporate customers do not accept electronic form of banking, which can assist banks to implement this self-service technology more efficiently in the various banking transactions. Lymperto and Chaniotakir (2004) the authors evaluated the allusion of EF technology and the existence of different distinct factors, which affect the market. Li and Worington (2004) the authors described the linkage between EF and electronic activities in the construction business and industrial events. Venkatesh (2006) the authors said that individual-level technology adoption is one of the most thoroughly researched streams in terms of the drivers of adoption and adoption decisions. Sum Chau, & Ngai (2010) the authors investigated the perceptions, attitudes and actions of the youth market for EF service (IBS). A survey was carried out to acquire data from 164 respondents. The authors found that young people's (age 16-29) have more positive attitudes and behavioural intentions towards using IBS than other Age groups. It has also been confirmed that there is a positive impact of IBS quality on satisfaction and loyalty. The research focused on an isolated convenience sample of university students in the UK. Zavareh et al., (2012) the authors evaluated the utilization of E-SERVQUAL scale to develop e-Service Quality (e-SQ) for web banking administrations. Arenas Gaitan et al., (2015) the authors investigated the sample of 415 persons over 55 years old. WarpPLS 3.0 was used for analysis of the size and structural model. The consequences showed that the mature people to accept EF due to habit, price value, quick transfer and effort hope. Al-Ajam & Md Nor (2015) the authors investigated the components that impact people's aim to receive web banking in the Republic of Yemen. The investigation is done under an absence of experimental examinations. Only review was utilized to gather information from 1,500 bank clients. Research review showed that auxiliary condition is affecting banking factors. Arenas Gaitán et al., (2015) the authors stated that EF is very convenient and fast, it is mired with several security issues. EF service institutions have taken several measures to ensure safety for their customers while performing various transactions online. Hussein, A. and Saad, M. (2016) the authors perceived the risk and behavioural determinants of using internet banking in Egypt. The research is designed with a model based on using the original postulates of Technology Acceptance Model (TAM) perceived usefulness and perceived ease of use and introducing new factors (such as: security risk, financial risk, privacy risk, awareness, computer self-efficacy (CSE) and resistance to change (RTC) to test EF/online internet banking popularity. Wang & Tang (2017) the authors presented that "saw validity" is an factor that effect the client's security and protection and make peoples worries in the acceptance of Internet banking or EF system.

Yiu, Grant, & Edgar (2017) the authors attempted to comprehend Internet Banking in Hong Kong from three edges: (I) the present selection rate of EF; (ii) the impacts of apparent handiness, saw convenience, saw hazard and individual inventiveness in data innovation and (iii) the potential effects on the vital action of banking associations working in the Hong Kong showcase. It was discovered that elements had a positive association with the selection of Internet Banking/EF system. Shaikh et al. (2017) the authors suggested that countries should be cognizant of the impact timing when carrying out banking reforms. Banking sector reforms should be implemented incrementally to maintain balance between excessive speed and undue delay. Sathye (2018) the author showed that security concerns and lack of care about E-banking and its profit might be obstacles to the adoption of E-banking in the Australia. These actions could help in rapid movement of customers to E-banking, important in considerable investments in operating costs for EF. Khadwal (2019) the author typified banks as public, old-private, new-private and foreign banks, and found that the impact of the reforms on the public sector banks was lower than the others. Singh (2019) the author measured the e-service quality of internet banking and the relationship with customer satisfaction in India. The aim of study is to explore the critical factors of e-service quality of EF service in India and to measure the customers' satisfaction of EF on the identified e-service quality dimensions. A survey method was carried out to acquire data from 650 respondents from India. Exploratory and confirmatory factor analysis was used to identify the dimensions of EF service. Li (2019) the author studied by using data from 22 transition countries mainly in Europe, banks experienced improved financial stability after banking sector reforms. Ye et al. (2019) the authors revealed that the reform in 2002 increased the support of registered banks from 1998 to 2008 for the growth of smaller and younger firms in China. Narayanasamy (2020) the authors found that the ones owned by government had high and unacceptable non-performing assets post-reform. Despite the contradictory outcomes, policy makers in India seem to be happy with reform outcomes and have been found to chunk out positive banking sector. Baganziet al.,(2021) the authors examined the role of environmental, behavioural and technological variables in predicting customer behavioural intentions to adopt the Bank of Uganda Internet Banking System (BBS Connect) by integrating three existing frameworks of Task Technology Fit (TTF), Unified Theory of Acceptance & Use of Technology (UTAUT) and Initial Trust Model (ITM). Bhattacharya and Chatterjee (2022) the authors proposed an integrated framework for digital project-driven supply chains (PDSC) to address multiple objectives in Architecture, Engineering, Construction and, Operations and Maintenance (AECOM) value chain. Additionally, the following sub-objectives were also to be addressed: to assess emerging themes of Fourth Industrial Revolution (4IR) technologies in AECO and to identify lacunae in existing project supply chains. Mukherjee et al (2022) the authors probed the fifteen significant barriers against the adoption of block chain in GSCM by using Integrated Fuzzy-DEMATEL approach. It is determined that lack of management vision and cultural differences among SC partners are the mainly impactable barriers. After conducting the relevant literature, the author concludes the below said research gaps are transformed into research objective:

3.Research Objectives:

- To find the increasing significance of internet banking/EF service among the clients of Construction Organization (Cos).
- To examine the impact of security trust, risk saving etc on internet banking/EF service for client's satisfaction.
- To evaluate the impact of EF service quality on client's satisfaction.

4. Research Methodology:

In the present study, questionnaire-based survey method is employed by Sahu et al., (2017), Sahu et al., (2019a, b), Sahu et al., (2018a, b, c), Sahu et al., (2020). The author attempts to gather information through questions in order to investigate and determine the most critical aspects that influence whether or not a client is satisfied with the transfer of funds via EF to COs. It is the exploratory and descriptive questions that are being used in this investigation. When it comes to research techniques, this is the most popular. It is most generally implemented in research method and is the most beneficial when it comes to analyzing the characteristics of consumer behaviour.

5. Data Collection and analysis:

Data is collected from 120 responders, which are using the EF (online service) system for transferring fund to COs. The data are collected against 14 questions and later the author tried to recognize and conclude the significant factors, which make the client's happy to transfer the fund to COs by using EF. The survey was conducted online by Google form involved below said 14 Questionnaires.

Questionnaires	Responded (using EF service) to transfer fund to COs.
1. Age?	Sample size-120
2. Gender?	Sample size-120
3. Occupation?	Sample size-120
4. What is your monthly income?	Sample size-120
7. For what purpose do you use EF service?	Sample size-120
8. How frequently do you use EF service?	Sample size-120
9. EF service provides the secured payments transfer to COs?	Sample size-120
10. EF service ensures the reliable or risk free or saving bill payments to COs?	Sample size-120
11. Which device do you use to avail EF service?	Sample size-120
12. Average amount of each transaction?	Sample size-120
13. Do you face any inconvenience while transacting through EF service to COs?	Sample size-120
14. Why you are using EF service?	Sample size-120

6. Analysis Part:

6.1. Regression Analysis:

The below **Table.1** represents the Regression statistics of the overall satisfaction derived by the customers of EF system. From the Table.1, it is clearly shown a total number of 120 customers' responses are considered, Apart from that the value of r square is greater than 0.5947 (i.e., 0.595 as of below table) by this we can understand that independent variables such Monthly Income, purpose to use EF, Frequency to use EF, Reliable payments or secured payments to COs, Avail of EF service, Average amount of each transaction and Intension of using the EF service (system) are influencing the overall satisfaction by 0.595 (approx. 59.5%).

Table.1 Regression Analysis:

<i>Regression Statistics</i>	
Multiple R	0.741252
R Square	0.594703
Adjusted R Square	0.124166
Standard Error	1.102252
Observations	120

6.2. ANOVA analysis:

The below-mentioned **Table. 2** represents the ANOVA of overall satisfaction derived. From the below Table.2, we can observe that the differentiation factor is 119 (150-1). Apart from this we mainly consider F value, which is given as 2.760, and the major considers the significant F value, which is less than 0.05 (i.e., 0.00217), from this we can understand that there is significance between dependent and independent variables i.e., there exist a significant relationship between the dependent variable i.e., overall satisfaction derived by EF system and independent variables such Monthly Income, purpose to use EF, Frequency to use EF, Reliable payments or secured payments to COs, Avail of EF service, Average amount of each transaction and Intension of using the EF service (system).

Table. 2 ANOVA analyses

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	12	40.24382	3.353652	2.760298	0.002172
Residual	107	166.4495	1.21496		
Total	119	206.6933			

6.3 P value analysis:

From the below **Table.3**, we can clearly understand the values of coefficients, standard error, 't' value and 'P' values. From the below Table.3, we know that the independent variables are Age (0.041), Purpose to use EF (0.0358), Secured payments (0.040), Reliable or risk free Bill Payments to COs (0.010), Inconvenience (0.027) are influencing dependent variables overall satisfaction. This shows that there exist significant relation between Independent and dependent variables.

Table. 3. P Values analysis

<i>Questionnaires</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
	2.46107	0.601601	4.0908	0.4878
1. Age?	0.33441	0.162219	2.0614	0.0411
2. Gender?	0.08505	0.203709	0.4175	0.6769
3. Occupation?	0.09338	0.147155	0.6346	0.5267
4. What is your monthly income?	-0.1027	0.093877	-1.094	0.3581
7. For what purpose do you use EF service?	-0.1167	0.121702	-0.959	0.339
8. How frequently do you use EF service?	0.14495	0.131057	1.1060	0.2706
9. EF service provides the secured payments transfer to COs?	-0.1988	0.140983	-1.410	0.0406
10. EF service ensures the reliable or risk free or saving bill payments to COs?	0.25858	0.0993	2.6040	0.0102
11. Which device do you use to avail EF service?	0.12261	0.146053	0.8395	0.4026
12. Average amount of each transaction?	-0.1596	0.258895	-0.616	0.5385
13. Do you face any inconvenience while transacting through EF service to COs?	0.18344	0.082597	2.2209	0.0279
14. Why you are using EF service?	-0.3229	0.194936	-1.656	0.0999

7. Conclusion:

This study tries to find the key quality attributes of EF services by analyzing the clients and their explanations on transferring funds to COs using EF banking experience. As a part of conclusion, the methodology i.e., multiple regression accompanied with ANOVA is implemented upon the sample size of 120 respondents or (EF) users, is employed to collect data. The data is collected via 14 significant empirical questionnaires, catered to client of Cos in the terms of Google form using internet server. On the collecting data, the data is simulated through SPSS software. The findings of the study showed that 59 % out of 100% transactions between Construction Organizations (COs) and its customers is supported by EF online service (system). In this study, it came to know that the factors such as security, trust, risk saving are found with p-value of 0.040, p-value of 0.010 and p- value of 0.027 respectively has significant impact or influence in the adoption of EF by clients of COs for transferring funds.

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Appendix:*EF service system questionnaire (Google form):*

- 1) **Age.**
 - a) Below 20
 - b) 21-30
 - c) 31-40
 - d) Above 40
- 2) **Gender.**
 - a) Male
 - b) Female
- 3) **Occupation.**
 - a) Employee
 - b) Student
 - c) Business
 - d) Others
- 4) **Monthly Income.**
 - a) 0-10000
 - b) 10001-20000
 - c) 20001-40000
 - d) Above 40000
- 5) **Do you have account in EF system.**
 - a) Yes
 - b) No
- 6) **Are you aware of EF service provided by EF system**
 - a) Yes
 - b) No
- 7) **For what purpose do you use EF system.**
 - a) Balance Enquiry
 - b) Bill payments
 - c) Money transfer
 - d) All of the above
- 8) **How frequently do you use EF system.**
 - a) Daily
 - b) Weekly
 - c) Monthly
 - d) Yearly
- 9) **EF system provides secured payments.**
 - a) Strongly Disagree
 - b) Disagree
 - c) Neutral
 - d) Agree
 - e) Strongly agree
- 10) **EF system ensures reliable or risk free or saving bill payments to COs.**
 - a) Strongly Disagree
 - b) Disagree
 - c) Neutral
 - d) Agree
 - e) Strongly agree
- 11) **Which device do you use to avail EF service.**
 - a) Mobile
 - b) Laptop
 - c) Personal Computer
 - d) Others
- 12) **Average amount of each transaction.**
 - a) Below 10000
 - b) 10001-20000
 - c) 20001-40000
 - d) Above 40000
- 13) **Do you face any inconvenience while transacting through internet service.**
 - a) Frequently
 - b) Sometimes
 - c) Never
- 14) **Why you are using EF service.**
 - a) To save time
 - b) Offers
 - c) 24 * 7 availability
 - d) Others