THE IMPACT OF E-BANKING ON CUSTOMER SATISFACTION IN FINANCIAL SERVICES: AN EMPIRICAL STUDY ON SELECTED FINANCIAL INSTITUTIONS OF KARNATAKA

Mir Mohsin, Prof. H. N Ramesh
Email Id: mirmohsin78@gmail.com, hnrameshku@gmail.com
Institute of Management Studies Kuvempu University, Shankerghatta Shimoga Karanataka (India)

Abstract- The present study is conducted to investigate the effect of e-banking on customers' satisfaction in financial services in Karnataka. In order to carry out the descriptive statistics a structured questionnaire has been framed and a five point Likert scale has been devised. The questionnaire has been administered among 175 respondents selected by using judgmental sampling. To examine and assess the relationship between dependent variable (Customer Satisfaction) and independent variables (Perceived usefulness, Perceived ease of use, Perceived credibility, and Customer attitude) correlation and regression analysis will be applied. The results obtained from descriptive, correlation and regression analysis will be tested using suitable statistical tests at appropriate significance levels.
Key words: Customer satisfaction, Correlation, E-BANKING, Financial services, Regression

1. INTRODUCTION

To govern a country or an organization appropriate communication platform to communicate with the stakeholders efficiently is must. India a country of more than a billion people with enormous social and cultural diversity, communicating with people is a herculean task. Therefore, the proficient way to communicate with the citizens of the world's largest democracy with a population of more than 1.2 billion is only possible via digital platform.

According to CII, "The Digital India initiative" a dream project of the Government to transform India into a digitally empowered society and knowledge economy has three core vision areas:

➢ Digital Infrastructure as a Utility to Every Citizen: The government is determined to provide high- speed internet connectivity to 250,000 Gram Panchayats, which will be a core utility for digital inclusion. The citizens will be offered unique, lifelong, online, and valid digital identity that will be provide easy access to Common Service Centers and a shareable private space for every citizen on a public cloud.

➢ Governance   and Services on Demand: Under this vision, all the government departments will be seamlessly integrated with high-speed optical fibre, which will improve inter operability of these organizations and will result in real-time service delivery from online or mobile platform. Further, the government is planning to make all citizen entitlements portable through cloud for easy and country-wide access and to digitally transform the services for improving ease of doing business in India. The government also plans to use the power of Geographic Information Systems (GIS) for decision support systems & development.

➢ Digital Empowerment of Citizens: This   vision is to empower citizens through digital literacy and universal access to digital resources. e.g. all documents/certificates to be available on cloud and in Indian languages. Government also wants to provide collaborative digital platforms for participatory governance. e.g. MyGov website for crowd sourcing ideas.

The era of information and communications revolution has prompted banks to move towards the introduction of a new type of services based on information technology (IT), offering what is technically known as "electronic banking services", or e-banking, in addition to traditional banking services. The Information and Communication Technology (ICT) has given rise to new concepts and ways promotion and delivery of services to customers based on IT that includes examination of customer satisfaction and profitability. Various combinations of banking services are provided through the Internet that comprises of:

➢ Dissemination of information of different services and products offered by banks to the public in general and their customers in particular,

➢ Possibility of receiving customer inquiries and responding to them through e-mail, offering simple transactions allowing customers to submit their instructions and applications for various services,

➢ Provision of sites allowing customers to make inquiries about their account balances,

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undertake financial transactions and pay various bills;
  ➢ Opportunity to use various other bank products, deal with the purchase and sale of securities.
  ➢ E-banking has had a significant impact on customers' use of bank services.

Electronic services are becoming nerve centre for banking sector of Indian economy because of their swiftness, effective performance and efficient productivity. Online banking is being fully adopted in the in India to provide value-added service for the attainment of customer satisfaction, cost reduction and profit maximization. Banks   are continuously striving to reduce operational costs through the provision of electronic services and gain access   to the largest segment of customers in terms of the geographical reach. Moreover, banks are determined to aid in integration of e-shopping networks.

2. LITERATURE REVIEW

This section sheds light on a brief review of some of the relevant literature available regarding e banking.

Raj (1996) claimed that one of the important one reasons for underperformance of Indian banks is lack of infrastructure needed to speed the process e banking.

Mookerji (1998) opined that sophisticated highly competitive internet banking is essential to develop India banking sector in future.

Ryder (2000) observed that the legal challenges of internet banking in India mainly comprise of information security and regulatory compliance.

Yibin (2003) assessed the status, trends, challenges and implications of e-banking and asserted that ebanking in addition to providing access and financial inclusion also improves the competition through competitive rates.

Parsad (2004) examined the nature, types of credit card frauds and degree of intensity of frauds and their overall impact on banking sector and preventive measures required to reduce the frequency of occurring of these frauds.

Sali (2004) studies customers' satisfaction regarding the use of ATM cards and inferred that to provide quality service, the banks will increasingly need superior customer service along with good quality products and assets.

Shajahan (2005) studied the level of customer's satisfaction vis-a-vis various e-banking services like internet, phone, branch and ATMs in India.

Sinha (2005) explained the various aspects of debit and credit cards issuance and usage. They concluded that usage rate is very low in India. Hundal and Jain (2006) articulated the stimulating and inhibiting attributes in the adoption of mobile banking and outlined some managerial applications.

Khan et. al. (2009) evaluated the service quality of internet banking services in India from customers' perspectives and concluded that customers are satisfied with service quality of four dimensions such as reliability, accessibility, privacy/security, responsiveness and fulfillment, but are least satisfied with the 'user-friendliness' dimension.

Chavan (2013) pointed out that the e-banking is an Internet portal via which customers can use different types of banking services. In technical terms e banking can be defined as the provision of banking products and services through electronic distribution channels.

Ahmad and Al-Zu'bi (2011) claimed that e-banking is beneficial because of reducing the costs of access; increased convenience and time savings, rapid and continuous access to information; better money management   through speeding up the cycle of the transfer of money and increasing the efficiency of business operations.

Alotaibi (2015) revealed that Saudi Arabia is a financially rich country with well-developed financial services and infrastructure that aided the country's financial sector to adopt technology for enhancement of efficiency and effectiveness.

Al-Somali, Gholami, and Clegg (2009) from the customer perspective, a number of aspects persuade the adoption of e-banking that include ease of use, education, reliability and resistance to change. Likewise, Lakhi and Gul (2012) noted that to attract customers and improve their services, banks must invest in IT and promote the culture of e-banking.

Eid (2011) observed that the quality of the user interface and the quality of information on e-commerce sites positively impact customer satisfaction. Al-Tit (2015) in similar study also revealed positive influence of quality   on customer satisfaction that escorts to customer retention.

Zaim et al. (2010) described that reliability; tangibility and understanding are the key factors in ensuring customer satisfaction whereas Mian (2014) found a statistically strong correlation between customer satisfaction and customer loyalty in the banking sector in Saudi Arabia. Walsh (2005) also substantiated that it is preferable retain existing customers rather than to acquire new customers.

Celik (2008) observed that the individuals perceive technology, easy to learn and use. In particular, there is a strong evidence that the ease of use of e-banking services increases the adoption of these services by customers.

Akbar and Parvez (2009) recommended that banks should consider both the present and the future

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when making decisions concerning appropriate tools for gaining customer confidence. They revealed that 40% of customers believe that these issues are critical aspects affecting the adoption of e-commerce in Saudi Arabia.

Ambhire and Teltumde (2011) described information security as the process of protecting the organization and its confidence in technological systems as well as maintaining essential information regarding the enterprise operations.

3. RESEARCH ELABORATIONS

The main goal of the study is to understand the impact of E-Banking on Customer Satisfaction in Financial Services. For achieving this goal following will be the objectives of the study:

➢ To determine the impact P**erceived Usefulness** of E banking on **Customer Satisfaction**.
➢ To assess the impact of **Perceived ease of use** of E banking on **Customer Satisfaction**.
➢ To examine the impact of **Perceived credibility** of E banking on **Customer Satisfaction**.
➢ To scrutinize the impact of **Customer attitude** towards E banking on **Customer Satisfaction**.

3.1 Hypothesis

To achieve objectives of this study following hypothesis are stated and will be tested:

➢ Ho_1-**Perceived Usefulness** of E banking does not impact **Customer Satisfaction**
➢ Ho_2-There is no substantial effect of **Perceived ease of use** of E banking on **Customer Satisfaction**
➢ Ho_3-There is no substantial effect of **Perceived credibility** of E banking on **Customer Satisfaction**
➢ Ho_4-**Customer Satisfaction** in case of e banking does not depend **Customer attitude**

3.2 Research Design

In order to satisfy the objectives of the research, the study employs both exploratory and descriptive research design. Exploratory research design will be used to generate basic knowledge on Customer Satisfaction whereas Descriptive research design will be used to find out relation/association between relationship between dependent variable (Customer Satisfaction) and independent variables (Perceived usefulness, Perceived ease of use, Perceived credibility, and Customer attitude by using correlation and regression models.

3.3 Data collection

The primary data for carrying out the current research work was collected through structured questionnaire developed after proper consultation with the experts. The questionnaire was administered to 175 respondents by using judgmental sampling and to carry out item analysis a five point Likert scale was applied.

4. RESULTS OR FINDINGS

In order to conduct descriptive analysis and assess the impact of E-Banking on Customer Satisfaction in Financial Services with fair precision a 5 point scale continuum has been developed on the bases of item analysis using following four parameters namely Perceived usefulness, Perceived ease of use, Perceived credibility, and Customer attitude. The detailed account of descriptive analysis is presented in following tables:

Table-4.1 Reliability of Items Used

Variables	Cronbach's Alpha
Customer satisfaction	0.98
Perceived usefulness	0.96
Perceived ease of use	0.96
Perceived credibility	0.97
Customer attitude	0.93
Source: Author's Computation	

This is evident from the above table 4.1 that the items/questionnaires used for measurement are statistically consistent as their reliability values as per Cronbach's Alpha are more than 0.90.

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The Table 4.2 below provides information regarding descriptive statistics of **Customer Satisfaction**

Table-4.2 Descriptive Statistics

Variable/Statement	Strongl disagre (1.0-	Disagree (1.81-2.60)	Neutral (2.61-3.40)	Agree (3.41-4.20)	Strongly Agree (4.21- 5.0)	Mean	S.D*	Level *
Customer Satisfaction	N*(%)	N*(%)	N*(%)	N*(%)	N*(%)			
You feel welcome during your visit to bank website	0	10(5.7)	60(34.3)	**88(50.3)**	17(9.7)	3.64	0.74	High
The information regarding various bank products/services is appropriate	0	17(9.7)	**87(49.7)**	62(35.4)	9(5.1)	3.36	0.73	Moderate
The content regarding the risks involved in various schemes is explained amicably	1(0.01)	14(8)	64(36.6)	**77(44)**	19(10.8)	3.37	0.82	Moderate
The customer care services are efficient	2(1.14)	20(11.4)	69(39.4)	**68(38.9)**	16(9.1)	3.43	0.85	High
The services provided are of standard quality	0	20(11.4)	69(39.4)	63(36)	23(9.7)	3.40	0.86	Moderate
The products/services you were looking for were easy to find completes tasks.	0	30(17.1)	**86(49.1)**	35(20)	24(13.7)	3.30	0.91	Moderate
The e banking website has a wide variety of products/services that cater to my needs	0	30(17.1)	**86(49.1)**	35(20)	24(13.7)	3.20	0.76	Moderate
The e banking website is visually appealing	11(6.3)	40(22.9)	**87(49.7)**	35(20)	2(1.1)	2.869	0.84	Moderate
The transactions and settlements are quick and effective	0	27(15.4)	**92(52.6)**	44(25.1)	12(6.9)	3.235	0.79	Moderate
Overall Level						3.33	0.83	**Moderate**

Source: Author's Computation,   N* = Frequency , S.D* = Standard Deviation **Level * =** Low (1.81-2.60) , Moderate (2.61-3.40), High (3.41- 4.20)

The data in the table 4.2 clearly indicates that the e banking services are satisfying the customer needs moderately. The overall level of level of satisfaction of e banking services is moderate with average value of 3.33 and standard deviation 0.83 respectively. Thus, it can be concluded that customer satisfaction using e banking can be improved by the continuous use of technological innovation in financial institutions of Karanataka region in particular and India in general.

The table 4.3 below provides information regarding descriptive statistics of **Perceived usefulness** with respect to e banking.

Table-4.3 Descriptive Statistics

Variable/Statement	Strong	Disagree (1.81-	Neutral (2.61-3.40)	Agree (3.41 -	Strongly agree (4.21-	Mean	S.D*	Level*
Perceived usefulness	N(%)	N(%)	N(%)	N(%)	N(%)			
My dealings with bank would be difficult to perform without e banking	10 (5.7)	26(14.9)	71(40.6)	66(37.7)	2(1.1)	3.14	0.89	Moderate
Using e banking gives me greater control over my bank account	20(11.4)	32(18.3)	38(21.1)	84(48)	1(0.6)	3.08	1.07	Moderate
The e banking addresses my most of the financial transaction related	6(3.4)	20(11.4)	53(30.03)	90(51.4)	6(3.4)	3.40	0.86	Moderate
Using e banking saves me	4(2.3)	8(4.6)	38(21.7)	109(62.3)	16(9.1)	3.71	0.79	High
e banking enables me to save transaction cost	6(3.4)	10(5.7)	41(23.4)	100(57.1)	18(10.3)	3.65	0.87	High
Overall Level						**3.40**	**0.90**	**Moderate**

Source: Author's Computation,   N* = Frequency , S.D* = Standard Deviation **Level * =** Low (1.81-2.60) , Moderate (2.61-3.40), High (3.41- 4.20)

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From the data in table 4.3 it is apparent that the overall level Perceived usefulness of e banking services is moderate with average value of 3.40 and standard deviation 0.90 respectively. Thus, it can be concluded that Perceived usefulness of e banking can be enhanced by the continuous use of technological and financial innovation in financial institutions of Karanataka region in particular and India in general.

The table 4.4 below provides information regarding descriptive statistics of **Perceived Ease of Use** with respect to e banking:

Table-4.4 Descriptive Statistics

Variable/Statement	Strongly disagree (1.0-	Disagree (1.81-2.60)	Neutral (2.61-3.40)	Agree (3.41-4.20)	Strongly agree (4.21-5.0)	Mean	S.D*	Level*
Perceived Ease of Use	N(%)	N(%)	N(%)	N(%)	N(%)			
I often become confused when I use the e banking system	1(0.6)	9(5.1)	45(25.7)	106(60.6)	14(8)	3.70	0.71	High
I make errors frequently when using e banking	17(9.7)	10(5.7)	42(24)	85(48.6)	21(12)	3.48	1.08	High
I need to consult the user manual often when using e banking	1(0.6)	3(1.7)	29(16.6)	106(60.6)	36(20.6)	3.99	0.70	High
e banking system is not user friendly	2(1.1)	5(2.9)	29(16.6)	104(59.4)	35(20)	3.94	0.76	High
The e banking system is interactive.	10(5.7)	19(10.9)	29(16.6)	94(53.7)	23(13.1)	3.58	1.04	High
Overall Level						3.74	0.86	High
Source: Author's Computation, N* = Frequency , S.D* = Standard Deviation **Level * =** Low (1.81-2.60) , Moderate (2.61-3.40), High (3.41- 4.20)								

From the data in table 4.4 it is apparent that the overall level Perceived Ease of Use of e banking services is 'high' with average value of 3.47 and standard deviation 0.86 respectively. Thus, it can be concluded that Perceived Ease of Use of e banking substantially satisfied the needs of customers of financial institutions of Karanataka region in India.

The table 4.5 below provides information regarding descriptive statistics of **Perceived Credibility** with respect to e banking:

Table- 4.5 Descriptive Statistics

Variable/Statement	Strongly disagree (1.0-	Disagree (1.81-2.60)	Neutral (2.61-3.40)	Agree (3.41-4.20)	Strongly agree (4.21-5.0)	Mean	S.D	Level
Perceived credibility	N(%)	N(%)	N(%)	N(%)	N(%)			
e banking fulfils the commitments and promises it assumes	10(5.7)	19(10.9)	29(16.6)	94(53.7)	23(13.1)	3.58	1.04	High
The information offered e banking is sincere and honest.	1(0.6)	6(3.4)	35(20)	106(60.6)	27(15.4)	3.87	0.73	High

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e banking is characterized by the frankness and transparency of the services that it offers...	1(0.6)	3(1.7)	38(21.7)	100(57.1)	33(18.9)	3.92	0.72	High
e banking is characterized by the clarity of the services that it offers to the...	5(2.9)	15(8.6)	29(16.6)	103(58.9)	23(13.1)	3.71	0.90	High
My personal information is kept confidential while using e banking...	1(0.6)	3(1.7)	23(13.1)	113(64.6)	35(20)	4.02	0.67	High
Overall Level						**3.82**	**0.81**	**High**
Source: Author's Computation, N* = Frequency , S.D* = Standard Deviation **Level * =** Low (1.81-2.60) , Moderate (2.61-3.40), High (3.41- 4.20)								

From the data in table4.5 it is clear that the overall level Perceived Credibility of e banking services is 'high' with average value of 3.82 and standard deviation 0.81 respectively. Thus, it can be concluded that Perceived Credibility especially regarding security issues of e banking considerably satisfied the needs of customers of financial institutions of Karanataka region in India.

The table 4.6 below provides information regarding descriptive statistics of **Customer Attitudes** with respect to e banking:

Table 4.6 Descriptive Statistics

Variable/Statement	Strongly disagree (1.0-1.80)	Disagree (1.81-2.60)	Neutral (2.61-3.40)	Agree (3.41-4.20)	Strongly agree (4.21-5.0)	Mean	S.D	Level
Customer Attitudes	N(%)	N(%)	N(%)	N(%)	N(%)			
I find e banking an easier way to solve my banking needs	1(0.6)	4(2.3)	41(23.4)	106(60.6)	23(13.1)	3.83	0.70	High
e banking requires a lot of knowledge to use	8(4.6)	18(10.3)	45(25.7)	94(53.7)	10(5.7)	3.46	0.92	High
e banking allows me to manage my finance effectively	1(0.6)	8(4.6)	33(18.9)	111(63.4)	22(12.6)	3.83	0.72	High
e banking is a convenient way to manage my finance	1(0.6)	13(7.4)	37(21.1)	105(60)	19(10.9)	3.73	0.77	High
e banking for me is the same as paying by cash	1(0.6)	10(5.7)	38(21.7)	108(61.7)	18(10.3)	3.75	0.74	High
Overall Level						**3.72**	**0.77**	**High**
Source: Author's Computation, N* = Frequency , S.D* = Standard Deviation **Level * =** Low (1.81-2.60) , Moderate (2.61-3.40), High (3.41- 4.20)								

From the data in table 4.6 it is clear that the overall level of Customer Attitude regarding e banking services is 'high' with average value of 3.72 and standard deviation 0.77 respectively. Thus, it can be concluded that Customer Attitude regarding   e banking services are noticeably contented in financial institutions of Karnataka region in India.

The table 4.7 below provides information regarding Pearson Correlation between Customer Satisfaction and Perceived Usefulness, Perceived Ease of use, Perceived Credibility and Customer attitude with respect to e banking.

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Table 4.7 Pearson Correlation

Correlation		Perceived Usefuln	Perceived Ease of use	Perceived Credi	Customer Attitu
Customer Satisfaction	Pearson Correlation	.931**	.930**	.917**	.876**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	175	175	175	175
**Correlation is significant @0.01					
Source: Author's Computation					

In the above table 4.7, the value of Pearson Correlation between Customer Satisfaction and Perceived Usefulness, Perceived Ease of use, Perceived Credibility and Customer attitude are 0.93, 0.93, 0.92 and 0.876 respectively with p values = 0 i.e. p-values< α (@significance level of 0.05/0.01). Therefore, it can be inferred that the Customer Satisfaction in case of e banking with respect to Perceived Usefulness, Perceived Ease of use, Perceived Credibility and Customer attitude respectively had significant statistical relation. The result shows a significant and positive strength of relationship of Customer Satisfaction in case of e banking with respect to Perceived Usefulness, Perceived Ease of use, Perceived Credibility and Customer attitude respectively hence, the research rejects the hypotheses which states that in case of E banking there is no significant impact of Perceived Usefulness, Perceived ease of use, Perceived credibility and Customer attitude on Customer Satisfaction. Consequently, $H0_1$, $H0_2$, $H0_3$ and H04 are **rejected.**

In order to ascertain and explore linear relationship between dependent and independent variables regression analysis has been used. The comprehensive and detailed regression analysis is elucidated below:
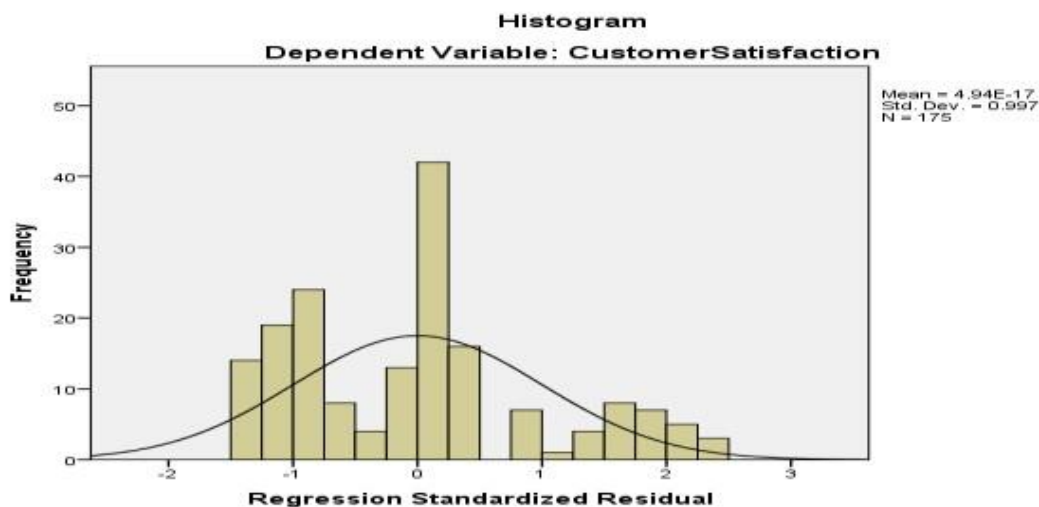
Hypothesis (Ho_1)- Perceived Usefulness of E banking does not impact **Customer Satisfaction**

In order to test the Hypothesis (H01) regression analysis has been conducted. The dependent variable Customer Satisfaction is regressed on predicting variable Perceived Usefulness. The variable Perceived Usefulness significantly predicts Customer Satisfaction (F = 1123.56) and p= 0 which manifests that Perceived Usefulness of e banking services enhance Customer Satisfaction in financial institutions of Karnataka region in India. This factor (Perceived Usefulness) contributes to improved Customer Satisfaction as β = 0.93. Furthermore, the R^2=0.87 depicts that this model explains 87% of variance in the advancement of Customer Satisfaction. The summary of the findings is presented in table 4.8 and graphic representation of regression residual in figure 4.1.

Table 4.8 Relationship between Perceived Usefulness and Customer Satisfaction

Variable	B	SEB	Beta	R^2	Adjusted R^2	T Value	F value	P value	Remarks
Perceived Usefulness	**1.54**	**.05**	0.93	**0.87**	**0.87**	33.52	1123.56	0 .00	**(H01) Rejected**
Constant	4.08	0.80							
Source: Authors Computations									

Fig. 4.1 Diagrammatic representation of rating regression standardized residuals for Perceived Usefulness versus Customer Satisfaction

Keeping in view these findings, it can be concluded that Perceived Usefulness of e banking significantly impacts the Customer Satisfaction of financial institutions of Karnataka in India i.e. there is a statistically significant relationship between Perceived Usefulness and Customer Satisfaction. Thus, Hypothesis **(H0**1**) is rejected.**

Hypothesis (Ho$_2$) -There is no substantial effect of **Perceived ease of use** of E banking on **Customer Satisfaction**

In order to test the Hypothesis (H0$_2$) regression analysis has been conducted. The dependent variable Customer Satisfaction is regressed on predicting variable Perceived Ease of Use. The variable Perceived Ease of Use significantly predicts Customer Satisfaction (F = 1115.43) and p= 0 which manifests that Perceived Ease of Use of e banking services enhance Customer Satisfaction in financial institutions of Karnataka region in India. This factor (Perceived Ease of Use) contributes to improved Customer Satisfaction as β = 0.93. Furthermore, the R^2=0.87 depicts that this model explains 87% of variance in the advancement of Customer Satisfaction. The summary of the findings is presented in table 4.9 and graphic representation of regression residual in figure 4.2.

Table-4.9 Relationship Between Perceived Ease of Use and Customer Satisfaction

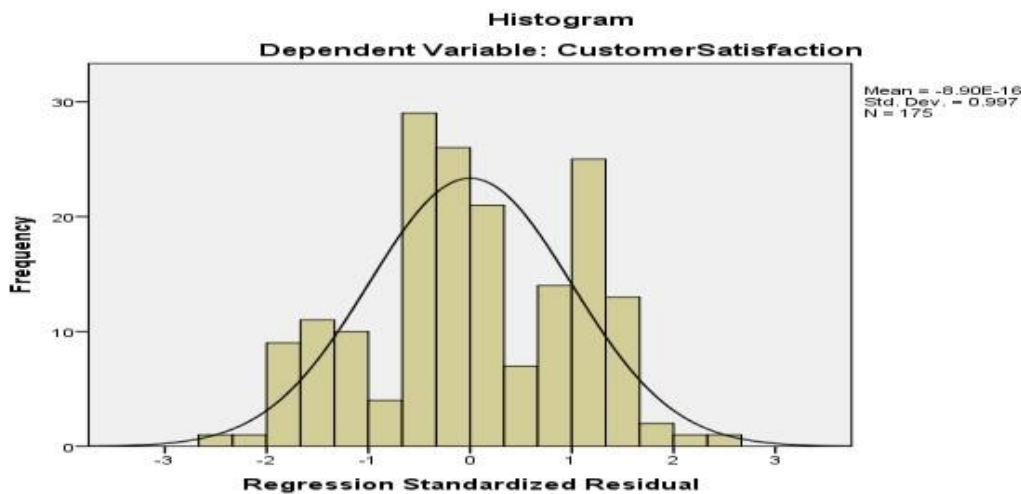| Variable	B	SEB	Beta	R^2	Adjusted R^2	T Value	F value	P value	Remarks
Perceived Ease of Use	**1.57**	**.05**	0.93	**0.87**	**0.87**	33.40	1115.43	0 .00	**(H0**2**) Rejected**
Constant	0.78	0.90							
Source: Authors Computations									

Fig. 4.2 Diagrammatic representation of rating regression standardized residuals for Perceived Ease of Use versus Customer Satisfaction

Keeping in view these findings, it can be concluded that Perceived Ease of Use of e banking services significantly impacts the Customer Satisfaction of financial institutions of Karnataka in India i.e. there is a statistically significant relationship between Perceived Ease of Use and Customer Satisfaction. Thus, Hypothesis **(H0**2**) is rejected.**
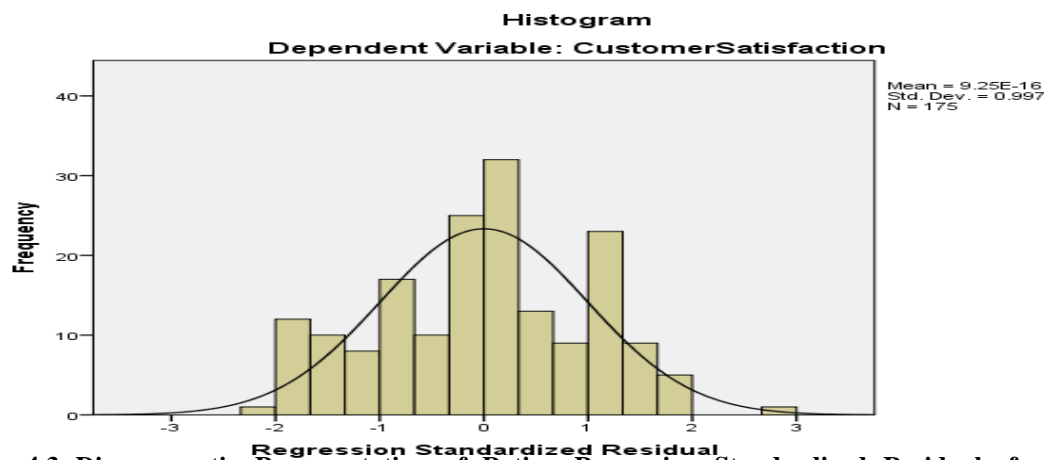
Hypothesis (Ho$_3$) - There is no substantial effect of **Perceived credibility** of E banking on **Customer Satisfaction.**

In order to test the Hypothesis (H0$_3$) regression analysis has been conducted. The dependent variable Customer Satisfaction is regressed on predicting variable Perceived credibility. The variable Perceived credibility significantly predicts Customer Satisfaction (F = 915.15) and p= 0 which manifests that **Perceived credibility** of e banking services augment Customer Satisfaction in financial institutions of Karnataka region in India. This factor (**Perceived credibility**) contributes to improved Customer Satisfaction as β = 0.92. Furthermore, the R^2=0.84 depicts that this model explains 84% of variance in the advancement of Customer Satisfaction. The summary of the findings is presented in table 4.10 and graphic representation of regression residual in figure 4.3.

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Table-4.10 Relationship between Perceived Credibility and Customer Satisfaction

Variable	B	SEB	Beta	R^2	Adjusted R^2	T Value	F value	P value	Remarks
Perceived credibility	**1.63**	**.05**	0.92	**0.84**	**0.84**	30.25	915.15	0 .00	(H0₃) Rejected
Constant	-0.90	1.05							
Source: Author's Computations									

Fig. 4.3 Diagrammatic Representation of Rating Regression Standardized Residuals for Perceived Credibility Versus Customer Satisfaction

Keeping in view these findings, it can be concluded that Perceived credibility of e banking services significantly impacts the Customer Satisfaction of financial institutions of Karnataka in India i.e. there is a statistically significant relationship between Perceived Ease of Use and Customer Satisfaction. Thus, Hypothesis (H03) is rejected.

Hypothesis (Ho₄) - Customer Satisfaction in case of e banking does not depend on **Customer attitude**

In order to test the Hypothesis (H0₄) regression analysis has been conducted. The dependent variable Customer Satisfaction is regressed on predicting variable Customer attitude. The variable Customer attitude significantly predicts Customer Satisfaction (F = 571.53) and p= 0 which manifests that Customer attitude of e banking services augment Customer Satisfaction in financial institutions of Karnataka region in India. This factor (Customer attitude) contributes to improved Customer Satisfaction as β = 0.87. Furthermore, the R^2=0.77 depicts that this model explains 77% of variance in the advancement of Customer Satisfaction. The summary of the findings is presented in table 4.11 and graphic representation of regression residual in fig. 4.11.

Table-4.11 Relationship between Customer Attitude and Customer Satisfaction

Variable	B	SEB	Beta	R^2	Adjusted R^2	T Value	F value	P value	Remarks
Customer attitude	**1.74**	**.04**	0.87	**0.77**	**0.76**	23.91	571.53	0 .00	**(H0₄) Rejected**
constant	-2.70	1.40							
Source: Authors Computations									

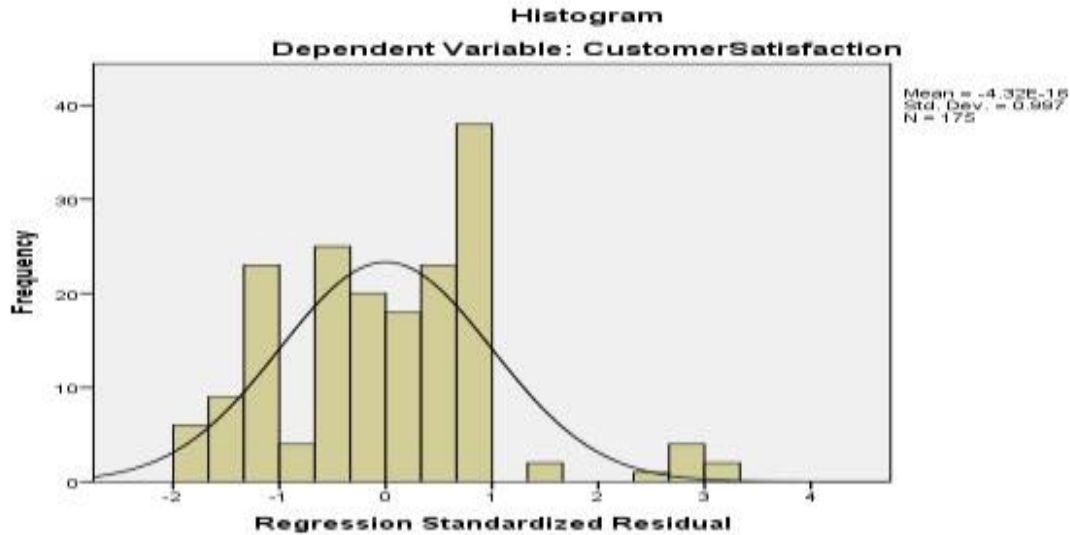International Journal of Technical Research & Science

Fig. 4.4 Diagrammatic Representation of Rating Regression Standardized Residuals for Customer Attitude versus Customer Satisfaction

Keeping in view these findings, it can be concluded that **Customer attitude** towards e banking services significantly impacts the Customer Satisfaction of financial institutions of Karnataka in India i.e. there is a statistically significant relationship between **Customer attitude** and Customer Satisfaction. Thus, Hypothesis **(H0**3**) is rejected.**

To examining collective impact of the various factors (independent variable) on the **Customer Satisfaction** (dependent variable) with respect to e banking services of financial institutions of Karnataka in India a multiple linear regressions has been carried out and following proposed empirical (regression) model has been developed:

Y(Customer Satisfaction with respect to e banking services of financial institutions of Karnataka in India **)**
= b$_0$ + b$_1$x$_1$ + b$_2$x$_2$ + b$_3$x$_3$ + b$_4$x$_4$ + e

Y = Customer Satisfaction with respect to e banking services of Financial Institutions of Karnataka India)

x$_1$ = Perceived usefulness, **x$_2$ =** Perceived ease of use, **x$_3$ =** Perceived credibility, **x$_4$ =** Customer **Attitude**

Multiple regression analysis was used to answer the objectives of this study in order to determine the contribution of independent variables towards variance of Customer Satisfaction with respect to e banking services of financial institutions of Karnataka in India. In addition, the partial regression coefficient (B) and standardised regression coefficients called weights beta were used to examine the linear relationship between certain independent variables. Likewise, the explanation of significance of each independent variable was provided based on dependent variable value obtained. The analysis showed that the **two predictor** variables were found to have a significant impact on Customer Satisfaction with respect to e banking services of financial institutions of Karnataka in India. The two predictors are Perceived Usefulness (X$_1$) and Customer Attitude (X$_4$). The multiple regression-models are presented below:

Table-4.12 Multiple Linear Regressions between the Independent Variables and Management Performance

Model	Unstandardized Coefficients		Standardized Coefficien	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.607	1.127		3.199	.002
Perceived Usefulness	1.006	.174	.609	5.792	.000
Perceived Ease of Use	.530	.326	.313	1.626	.106
Perceived Credibility	.560	.295	.315	1.900	.059
Customer Attitude	-.596	.189	-.295	-3.160	.002
a. Dependent Variable: Customer Satisfaction					
Source: Author's Computation					

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Table 4.12 R Statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.943[a]	0.89	0.886	2.34

Table above shows that the statistics R is the multiple correlation coefficients between all of predictor variables and the Customer Satisfaction, as well as the contributions of each added variable in the model. The un- standardized coefficients b value, Standardized coefficients Beta value, t- value and sig-t are also displayed in the table. In addition to these values, R, R-square and F value of the predictor variables are also depicted in the table. Multiple regression analysis reveals that the overall variance (89%) in Customer Satisfaction with respect to e banking services of financial institutions of Karnataka in India is explained by the independent variables. However, two variables Perceived Usefulness (X_1) and Customer Attitude (X_4) have statistically significant impact on Customer Satisfaction. Besides, these two variables another variable i.e. Perceived Credibility has been found approaching to the significant level viz. $\alpha = 0.05$. Hence, the model is as follows:

Y (Customer Satisfaction) = $3.607 + 1.006x_1 + 0.530x_2 + 0.560x_3 - 0.596x + e$

By examining the normal p-p plot of the regressing standardized residual as shown in figure 5, it could be easily observed that the multiple linear regression analysis was stable. This is indicated by the normality line which is very normal. In total, the residual is normally distributed as most cases fall along the normality line. The model is considered to be a good model.
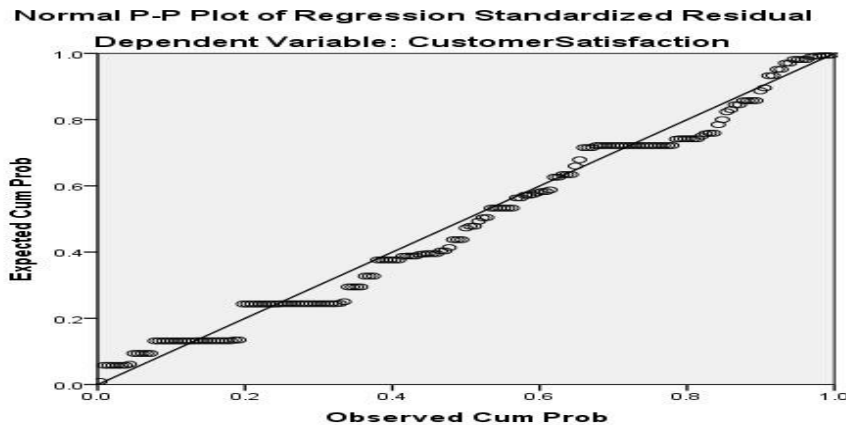
Fig. 4.5 Normal P Plot of Regression Standardized Residuals Customer Satisfaction

CONCLUSION

This study concludes that there is a significant impact on customer satisfaction while using e banking as it is affirmed statistically that e banking services enhance substantially the Perceived usefulness, Perceived ease of use, Perceived credibility, and Customer attitude regarding various services offered by financial institutions or banks of Karnataka in India. Banks or financial institution in Karanataka as well as in India must realize the sensitivity of opportunities and challenges ahead that will aid in developing appropriate strategy to leverage the opportunities offered by e-banking. E-banks need to advance from product centric to customer centric i.e. to design services according to the needs, dreams and expectations of the customers. Further, in order expand their market share financial institutions or banks should operate and offer e banking services to rural areas that are still untapped in India.

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