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AN EMPIRICAL STUDY ON IMPACT OF E-BANKING IN CO-OPERATIVE BANKS WITH REFERENCE TO COASTAL KARNATAKA

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KEYWORDS:
Co-operative Banks, Coastal Karnataka, E-Banking, Mobile Banking, SMS Banking, M-Payments

ABSTRACT

The non-stop growth of Information Technology has led to multifaceted changes in every field. Business and financial segment is one of the largest applicator of Information Technology. The introduction of Electronic Banking has a major impact on banking operations. The barriers like time, location, speed, etc. are overthrown and anytime, anywhere services are provided to its customers. The E-Banking further transformed into Mobile Banking, SMS Banking, E-Payments, M-Payments, Touch Kiosks, etc. The Traditional method of handling banking operations in the branches were also went through multiple evolutions and major process changes came into picture, making customer service as more prominent.

The principal object of this paper is to understand the various components of E-Banking, to list out the benefits and problems faced and to explore the satisfactions at various demographic levels of users.

INTRODUCTION

E-Banking, acronym for Electronic Banking represents all the transactions done through systems, namely computers, mobile devices, tablets, ATMs, PoS machine, etc. using with or without internet. This facilitates bank customers to make payments, transfers, receive money, check passbook, any time without dependency on bank branches. E-Banking includes Internet Banking, Mobile Banking, Mobile Payments, E-Commerce Payments, ATM transactions, Debit & Credit Card Payments, etc.

The advent of E-Banking has improved Bank and Customer relationships. Though Face-to-Face transactions and in-branch transactions got reduced due to E-Banking, it has improved in areas like time required to complete transaction, anywhere and anytime transactions, electronic fund transfers, cashless transactions, etc. The release of new platforms - Unified Payment Interface (UPI), Immediate Payment Service (IMPS), Bharath Bill Payment Service (BBPS), Bharat Interface for Money (BHIM), National Financial Switch (NFS), Aadhar Enabled Payment System (AEPS) , Cheque Truncation System (CTS), RuPay – the new Card payment scheme, National Automated Clearing House (NACH), Aadhar Payment Bridge System (APBS), National Electronic Toll Collection (NETC), Bharat QR – have made Electronic Banking successful. No bank can think of success without embracing the Digital Banking.

The E-Banking has both benefits and problems. However, the volume and velocity of benefits has ousted the arguments on problems. The improvements in decision support system, removal of barriers of branch banking, ease of maintaining accounting books, elimination of large and multi-volume ledger books, easy storing; indexing; and searching of records, movement towards cashless society, linking of every payment resulting in reduction of black money, etc. have triggered a massive expansion of E-Banking.

RESEARCH OBJECTIVES

The core purpose of this study is to understand E-Banking and its impact in Co-operative Banks. This objective is further broken down as below:

- To understand acceptance on components of E-Banking
- To comprehend benefits and problems of E-Banking implementation
- To explore the demographic parameter wise satisfaction level on implementing E-Banking in Co-operative Banks.

RESEARCH METHODOLOGY

The researcher conducted Sample Survey using Questionnaire in the three districts of Coastal Karnataka as detailed below.

- **Sampling Technique**: Random sample method
- **Sample Size**: 200 respondents from three districts
- **Data Validation**: The data was validated in the entry level using technology. Hence, there was no rejection after data collection.
- **Survey Method:** The researcher used online method to collect responses. Google Forms Survey was created and shared among the respondents using WhatsApp, Facebook and Email messages. Participation was restricted to only one response per email address.
- **Statistical Tools used for Data Analysis**: The responses were validated and filtered, and then analysed using SPSS packages with Chi-Square, Kruskal Wallis H Test, Mann-Whitney's U Test with Measures of Central Tendency and Standard Deviation Methods.

RESEARCH HYPOTHESES

After detailed review of literature and objectives, the following hypotheses were formed by the researcher.

H_1: The E-Banking experience is same across categories of marital status

H_2: There is no significant difference in satisfaction level with E-Banking among users of different income groups

H_3: There is no significant change in experience level among different occupation users.

H_4: The satisfaction level on E-Banking is same among user of difference education level.

H_5: The satisfaction level on E-Banking is same among users of different genders

SIGNIFICANCE OF STUDY

There are various studies conducted on the E-Banking in Commercial Banks. However, a few researchers focused on the Co-operative Banks, to understand the depth with which Co-operative banks accepted the E-Banking. However, there is a very little effort observed on E-Banking and its resultant process level changes and its impact on the service delivery. Further, this study also concentrates on demography wise variations in acceptance level of various facilities provided under E-Banking, benefits and service improvements as well as the problems encountered during and post implementation.

LIMITATIONS

This study focuses only on E-Banking activities of the Co-operative Banks without touching the other aspects of service provided like Human Resource issues, Regulatory requirements, Legal guidelines, which may also have impact on service acceptance level, provided by Co-operative Banks. Though we have taken utmost care in collecting samples and analysing them with proper statistical tools, the study has few limitations as listed below:

a. The E-Banking is one of the fast-growing segment and the parameters considered for study may change drastically by the time.
b. The questionnaires were distributed electronically to sample population. Hence, there may be more leniencies towards technology.
c. The questions were formed keeping Co-operative Banks in mind. Hence, this result may not match with results of other financial institutions / banks only.

REVIEW OF LITERATURE

Shubhara Jindal, 2016 observes that, E-Banking is the opportunity for banks in India to improvise their customer base and thus maximize their profits. However, only such banks will survive who can with stand the changes as per technological advancements and their success depends on the customer satisfaction level.

Vikas Chauhan & Dr. Vipin Choudhary, 2015 opines that the adoption of e-banking is still at the initial stages and facing challenges like security risk, trust factors, privacy risk, etc. The Government of India has initiated various measures to make e-banking more safer, secure and reliable.

Dr. Nitin Gupta & Shivangi Gupta, 2017 suggests that giving an indirect tax rebate for using cashless methods of payment will bring parity between cash and cashless payments. The merchants are to be asked to charge less for digital payments. This will boost the digital payments.

Anand, Oct 2015 mentions that, Electronic Banking transactions created a bundle of opportunities as well as challenges to the existing banks, financial institutions and consumers in India as well as globally, which made them to rapidly introduce the innovative E-Banking solutions.

Basavarajappa, 2015 states that, The Government of India enabled the IT Act, 2000 which provides legal recognition to electronic transactions and other means of electronic commerce. Also, the RBI have facilitated the development of E-Banking in India, acting as a regulator and the supervisor of the technologically dominated financial system, advising all banks to evaluate the risk inherent system and put in place adequate control mechanism to address these risks.

Prerana & Dr. Preeti, 2012 observes that, irrespective of huge efforts by Banks, RBI & Government, the study shows that a large number of customers do not use Mobile Banking for various reasons like Security Concerns, Network Problems, Difficulty in handling mobile phone and cost per transaction. However, banks are spending considerable amount to have E-Banking available to its customers and cut their operations costs.

Dr. Geetha Sharma, 2016 perceives that, the banking today is re-defined and re-engineered with the use of Informaiton Technology and it is sure that the future of the Banking will offer more sophisticated services to customers with the continuous product and process innovations. E-Banking has lead to change the Banker's approach from "conventional banking" to "convenience banking" and "mass banking" to "class banking".

Eric Robins, 2006 in his report opines that, despite increasing adoption of e-banking technologies, bank locaiton still remains a very imprtant factor that consumers consider when choosing a bank. A large percentage of consumers still do not use e-banking technologies or all the features of these services. Also, many consumers still visit their banks frequently.

Varsha Kuchara, 2012 identifies the factors responsible for Internet Banking are Convenience, Security, Easy to maintain banking transaction, Curiosity, better rate and Low service charges. However, Internet Banking is increasingly becoming a "need to have" than a "nice to have" service.

DATA ANALYSIS

Table 1: District wise respondent summary

District	Frequency	Percent
Dakshina Kannada	67	33.5
Udupi	77	38.5
Uttara Kannada	56	28.0
TOTAL	200	100.0

Source: Primary data

Table 2: Education wise respondent summary

Education	Frequency	Percent
Up to Degree	25	12.5
Degree / Diploma	74	37.0
Post Graduate / PhD	101	50.5
TOTAL	200	100.0

Source: Primary data

Table 3: Marital Status wise respondent summary

Marital Status	Frequency	Percent
Married	162	81.0
Unmarried	38	19.025
TOTAL	200	100.0

Source: Primary data

Table 4: Gender wise respondent summary

Gender	Frequency	Percent
Female	70	35.0
Male	130	65.0
TOTAL	200	100.0

Source: Primary data

Table 5: Age wise respondent summary

Age	Frequency	Percent
< 30 years	47	23.5
30 – 40 years	71	35.5
40 – 50 years	19	9.5
50 – 60 years	47	23.5
TOTAL	200	100.0

Source: Primary data

Table 6: Income wise respondent summary

Income per month	Frequency	Percent
< Rs. 10,000	37	18.5
Rs. 10,001 – 20,000	41	20.5
Rs. 20,001 – 30,000	46	23.0
Rs. 30,001 – 50,000	51	25.5
Rs. 50,001 & above	25	12.5
TOTAL	200	100.0

Source: Primary data

Table 7: Occupation wise respondent summary

Occupation	Frequency	Percent
Agriculturist	18	9.0
Business Man	15	7.5
Professional	130	65.0
Self Employed	25	12.5
Unemployed	12	6.0
TOTAL	200	100.0

Source: Primary data

Table 8: Membership duration wise respondent summary

Member since	Frequency	Percent
< 1 year	15	7.5
1 to 2 years	67	33.5
3 to 5 years	57	28.5
5 to 10 years	44	22.0
10 years and above	17	8.5
TOTAL	200	100.0

Source: Primary data

FINDINGS OF THE STUDY

The researcher intended to understand the various components of E-Banking relative to the objectives of the study. Thus, extensive literature review has been undertaken to understand the E-Banking applications and its activities. Following are the outcomes of such a study.

E-BANKING COMPONENTS – ACCEPTANCE ANALYSIS

Table 9: Individual component acceptance summary

Options >>	Yes (3)		May be (2)		No (1)		Mean	SD
Description	**f**	**%**	**f**	**%**	**f**	**%**		
E-Banking Facilities								
• Internet Banking	149	74.5	15	7.5	36	18.0	2.57	0.780
• Mobile Banking	0	0	0	0	200	100.0	1.00	0.000
• SMS Banking	46	23.0	20	10	134	67.0	1.56	0.843
• Mobile Payments	0	0	0	0	200	100.0	1.00	0.000
• Multi City Cheques	17	8.5	35	17.5	148	74.0	1.35	0.631
• ATMs	71	35.5	67	33.5	62	31.0	2.05	0.816
• Currency Deposit Machine	0	0	0	0	200	100.0	1.00	0.000
• Passbook Printing Machine	7	3.5	20	10.0	173	86.5	1.17	0.461
• E-Voting	0	0	0	0	200	100.0	1.00	0.000
• Debit Cards	84	42	31	15.5	85	42.5	2.01	0.913

Source: Primary data

With the above data we can understand that, out of E-Banking facilities: Internet Banking, SMS Banking, Multi-City Cheques, ATMs, Passbook Printing Machines and Debit Cards are provided / accepted by the users. However, Mobile Banking, Mobile Payments, Currency Deposit Machines and E-Voting are either not provided or not accepted by the users.

E-BANKING – BENEFITS AND PROBLEMS

The E-Banking activity is analysed in three different Groups

a. Benefits of E-Banking implementation
b. Service Improvements after implementing the E-Banking
c. Problems encountered after implementing the E-Banking

Table10: Individual component acceptance summary

Options >>	Yes (3)		May be (2)		No (1)		Mean	SD
Description	**f**	**%**	**f**	**%**	**f**	**%**		
Benefits of E-Banking								
• Quick Information	70	35.0	38	19.0	92	56.0	1.89	0.895
• Easy Access to Services	57	26.5	31	15.5	112	56.0	1.73	0.879
• Secured Services	87	43.5	17	8.5	96	48.0	1.96	0.958
• Cost Reduction	67	33.5	19	9.5	114	57.0	1.77	0.924
• Quick Transactions	63	31.5	25	12.5	112	56.0	1.76	0.905
• Reduced Paper usage	66	33.0	35	17.5	99	49.5	1.84	0.895
• Flexibility in Services	59	29.5	16	8.0	125	62.5	1.67	0.903
• Any Time Transactions	71	35.5	21	10.5	108	54.5	1.82	0.930
• Quick Loan Sanctions	57	28.5	29	14.5	114	57.0	1.72	0.882
• Error Reduction	66	33.0	35	17.5	99	49.5	1.84	0.895

Source: Primary data

Table11: E-Banking Service Improvement summary

Options >>	Yes (3)		May be (2)		No (1)		Mean	SD
Description	**f**	**%**	**f**	**%**	**f**	**%**		
Service Improvements								
• Cheque Collection	87	43.5	20	10.0	93	46.5	1.97	0.951
• Passbook Printing	77	38.5	107	53.5	16	8.0	1.85	0.950
• Cash Deposit & Withdrawal	103	51.5	83	41.5	14	7.0	2.10	0.962
• E-Payments	67	33.5	15	7.5	118	59.0	1.75	0.930
• Money Transfers	86	43.0	16	8.0	98	49.0	1.94	0.960
• Account Balance Enquiry	110	55.0	16	8.0	74	37.0	2.18	0.944
• Electronic Payments	50	25.0	18	9.0	132	66.0	1.59	0.863
• E-Commerce Payments	36	18.0	12	6.0	152	76.0	1.42	0.779
• Account Opening	108	54.0	14	7.0	78	39.0	2.15	0.955
• Records Management	77	38.5	29	14.5	94	47.0	1.92	0.923

Source: Primary data

Table12: E-Banking Service Improvement summary

Options >>	Yes (3)		May be (2)		No (1)		Mean	SD
Description	**f**	**%**	**f**	**%**	**f**	**%**		
Problems encountered								
• Network Problems	2	1.0	35	17.5	163	81.5	1.20	0.422
• Limited ATMs	66	33.0	35	17.5	99	49.5	1.84	0.895
• Shortage of Funds in ATMs	7	3.5	20	10.0	173	86.5	1.17	0.461
• Security Threats	22	11	21	10.5	157	78.5	1.33	0.665
• Untrained Staff	2	1.0	31	15.5	167	83.5	1.18	0.406
• Loss of Cards	65	32.5	32	16.0	103	51.5	1.84	0.895
• Power Problems	7	3.5	20	10.0	173	86.5	1.17	0.461
• Shortage of Computers	25	12.5	21	10.5	154	77.0	1.33	0.665
• Reduction in Staff	28	14.0	31	15.5	141	70.5	1.44	0.727
• No enough Training	66	33.0	35	17.5	99	49.5	1.84	0.895

Source: Primary data

GROUP WISE RESULTS

Table13: Individual service demand summary

E-Banking Satisfaction Group	Score Rating by user (1: Lowest, 10: Highest)										M	SD
	1	2	3	4	5	6	7	8	9	10		
Overall Satisfaction Score	0	0	0	30	45	15	40	35	28	7	6.58	1.79
Facility Score	0	0	19	28	49	36	29	19	20	0	5.83	1.75
Benefits Score	0	0	42	35	17	5	30	26	33	12	6.08	2.41
Service Improve Score	0	0	52	18	60	43	13	5	7	2	5.00	1.63
Problem Experience Score	0	0	78	23	57	15	13	7	5	2	4.57	1.67

Source: Primary data

The above table clearly indicates that, there is average satisfaction among customers towards E-Banking in Co-operative Banks. The Overall Satisfaction Score being 6.58, which is above the Mid-point.(M = 6.58, SD = 1.79). The E-Banking Facility Score is not that satisfactory (M = 5.83; SD = 1.75), E-Banking Benefits Score is moderate (M = 6.08; SD = 2.41). The E-Banking Service Improvement indicator is exactly halfway (M=5.00; SD=1.63), which indicates that users are not so happy about the improvements in the E-Banking. However, the E-Banking Problem Experience Score is less than 5 (M = 4.57; SD = 1.67) indicates that, the E-Banking implementation did not impact the regular banking experience of the customers.

TESTING OF HYPOTHESIS

A. E-Banking Experience level by Marital Status

H_1: The E-Banking experience is same across categories of marital status

H_0: The E-Banking experience is not same across categories of marital status

Table14: E-Banking experience by marital status

Service Group	Marital Status	N	Mean Rank	Mann-Whitney U	t & p value
Overall Satisfaction Score	Married	162	100.25	3037.50	t = 0.128
	Unmarried	38	101.57		p > 0.05 (0.128)
Facility Score	Married	162	100.67	3050.00	t = 0.088
	Unmarried	38	99.76		p > 0.05 (0.929)
Benefits Score	Married	162	100.85	3021.00	t = 0.180
	Unmarried	38	99.00		p > 0.05 (0.857)
Service Improvement Score	Married	162	100.88	3017.00	t = 0.195
	Unmarried	38	98.89		p > 0.05 (0.845)
Problem Experience Score	Married	162	102.72	2718.00	t = 1.172
	Unmarried	38	91.03		p > 0.05 (0.241)

Source: Primary data

The Independent Sample Mann-Whitney U Test shows that, E-Banking Experience is different among the married and unmarried. In all the cases, the p value is above the significance level of 0.05. Hence, the null hypothesis is accepted.

B.E-Banking experience level by income group

H_1: There is no significant difference in satisfaction level with E-Banking among users of different income groups

H_0: There is significant difference in satisfaction level with E-Banking among users of different income groups

Table15: Satisfaction level by Income Group

Income Group	N	Mean Rank				
		Overall	Facility	Benefits	Service	Problem
Below Rs. 10,000	37	110.86	102.00	110.68	100.45	92.70
Rs. 10,001 – Rs. 20,000	41	98.78	108.00	99.63	97.99	106.22
Rs. 20,001 – Rs. 30,000	46	104.84	102.16	100.95	104.14	101.58
Rs. 30,001 – Rs. 50,000	51	98.30	92.54	98.14	94.55	93.13
Rs. 50,001 & above	25	84.48	99.16	90.86	110.16	115.72
DF		4	4	4	4	4
t value		3.582	1.781	1.985	1.582	3.981
p value		0.466	0.776	0.739	0.812	0.409

Source: Primary data

The Kruskal-Wallis H test showed that there is a statistically significant difference in satisfaction level between the different income groups. The Statistical analysis resulted in the Overall E-banking Satisfaction score [X^2 (2) = 3.582, p > 0.05], E-Banking Facility Score [X^2 (2) = 1.781, p > 0.05], E-Banking Benefits Score [X^2 (2) = 1.985, p > 0.05], E-Banking Service Improvement Score [X^2 (2) = 1.582, p > 0.05] and E-Banking problem experience score [X^2 (2) = 3.981, p > 0.05]. Thus, the null hypothesis is retained and alternate hypothesis is rejected.

C.Satisfaction level by occupation

H_1: There is no significant change in experience level among different Occupation users

H_0: There is significant change in experience level among different Occupation users

Table16: Satisfaction level by Income Group

Occupation	N	Mean Rank				
		Overall	Facility	Benefits	Service	Problem
Agriculturist	18	134.11	133.19	130.39	134.22	134.50
Business Man	15	87.5	88.17	97.03	92.03	84.40
Professional	130	104.79	104.8	104.2	103.42	101.93
Self Employed	25	79.72	78.20	79.32	82.82	91.86
Unemployed	12	63.13	66.79	64.04	65.71	72.08
DF		4	4	4	4	4
t value		16.278	15.368	13.847	14.221	11.911
p value		< 0.01	< 0.01	< 0.01	< 0.01	0.018

Source: Primary data

The Kruskal-Wallis H test showed that there is no statistically significant change in satisfaction level between the different occupation groups. The Statistical analysis resulted in the Overall E-banking Satisfaction score [X^2 (2) = 16.278, p =0.003], E-Banking Facility Score [X^2 (2) = 15.368, p = 0.004], E-Banking Benefits Score [X^2 (2) = 13.847, p = 0.008], E-Banking Service Improvement Score [X^2 (2) = 14.221, p =007] and E-Banking problem experience score [X^2 (2) = 11.911, p =0.018]. Thus, the null hypothesis is rejected and alternate hypothesis is accepted.

D.E-Banking experience by education level

H_1: The satisfaction level on E-Banking is same among user of difference Education level.

H_0: The satisfaction level on E-Banking is different among user of difference Education level.

Table 17: Demand for services by Education Level

Education	N	Mean Rank				
		Overall	Facility	Benefits	Service	Problem
Upto Degree	25	126.06	116.44	130.00	124.82	121.38
Degree / Diploma	74	88.03	90.57	84.47	90.01	95.35
Post Graduate / PhD	101	103.31	103.83	104.94	102.16	99.10
DF		4	4	4	4	4
t value		8.822	4.538	13.097	7.334	4.259
p value		0.012	> 0.05	< 0.01	0.026	> 0.05

Source: Primary data

The Kruskal-Wallis H test showed that, there is difference of opinion among the users of different education about E-Banking Experience. Statistically significant difference is observed in case of E-Banking Facility Score [X^2 (2) = 4.538 with p > 0.05] and E-Banking Problem Experience Score [X^2 (2) = 4.259 with p > 0.05] while all other scores depict no difference between the education i.e. Overall E-Banking satisfaction score [X^2 (2) = 8.822 with p = 0.012], E-Banking Benefits Scores [X^2 (2) = 13.097 with p < 0.01] and E-Banking

Service improvement score [X^2 (2) = 7.334 with p = 0.026]

With the above details, we understand that, the E-Banking Facility and E-Banking Problem Experience has statistically significand difference in experience, while the Other services – E-Banking Satisfaction, E-Banking Overall Experience and E-Banking Benefits has no statistically significant difference in experience.

E. Service Group wise acceptance level by Gender

H_1: The satisfaction level on E-Banking is same among users of different genders

H_0: The satisfaction level on E-Banking is different among users of different genders

Table18: Demand for Services among Gender

Gender	N	Mean Rank				
		Overall	Facility	Benefits	Service	Problem
Male	130	110.18	106.98	111.55	112.42	109.03
Female	70	82.52	88.46	79.98	78.37	84.65
DF		1	1	1	1	1
t value		3.275	2.190	3.727	4.083	2.970
p value		< 0.01	0.029	< 0.01	< 0.01	< 0.01

Source: Primary data

The Independent Sample Mann-Whitney U Test shows that, the satisfaction level on E-Banking is same among all genders. The statistical results indicate – Overall Satisfaction score [X^2 (2) = 3.275 with p = 0.001], The E-Banking Facility Score [X^2 (2) = 2.190 with p = 0.029], E-banking Benefits Score [X^2 (2) = 3.727 with p < 0.001], E-Banking Service Improvement Score [X^2 (2) = 4.083 with p < 0.001] and E-Banking Problem Experience Score [X^2 (2) = 2.970 with p = 0.003].

The above results indicate that, the E-Banking Satisfaction levels is same across different Genders. Hence, the null hypothesis is rejected.

DIRECTIONS FOR FUTURE RESEARCH

With the experience we received during the survey and data analysis, following suggestions are made to help next researchers.

a. The co-operative segment is very large segment and most important in terms of rural economy. Hence, there are many areas to be researched to understand the nerves of rural economy.
b. E-Banking is just gearing up in the Co-operative Banks and NABARD & RBI together have initiated Core Banking Solution implementation in all the Co-operative Banks.
c. The Co-operative Banks will also cover larger chunk of financial inclusion activity and take the banking to unbanked area.

CONCLUSION

The growth of Co-operative Bank in Coastal Karnataka is emerging as competitive to Commercial Banks. The extension of Core Banking Solution, inclusion of Mobile Banking, Mobile Payments and other e-banking components, will bring more customers to the banking net of Co-operative Banks. The impact of E-Banking should also reflect in Cost Reduction and facilitate Any-where and Any-time Banking in real terms. Strengthening of three tiers of Co-operative Banking will boost the Indian Banking and in turn solidify the Economy.

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