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## **CHALLENGES IN E- BANKING SERVICES AND ITS IMPACT ON PROFITABILITY OF PUBLIC SECTOR BANK IN ETHIOPIA**

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### **ABSTRACT**

E-banking is the most recent delivery channel of banking services in developing nations. The objectives of the paper is tried to address the challenges in E-banking Services and its impact on the profitability of the Public Sector Bank in Ethiopia particularly Commercial Bank of Ethiopia (CBE) before and after introduction of e-banking services . To meet this objective, a stratified-random sampling design was used. Data were collected both from primary and secondary sources. The primary data were collected from e-banking customers of the seven Dessie town branches and the secondary data were collected from the banks financial statement and analyzed to see the relationship between e-banking service and profitability of CBE. Finally, presentation and appraisal was illustrated in simple descriptive statistics, relative ranking score and t test. This paper highlights that the e-banking services has any impact on the profitability of CBE in terms of three financial performance indicators of ROA, ROE and, NIM.

**JEL classification system:** G21, G41, M31.

**Keywords:** e-banking, customers, profitability, challenges, Financial Indicators.

### **1. INTRODUCTION**

The fast advancing global information infrastructure, information technology and computer networks such as the Internet and Telecommunication systems, enables the development of electronic commerce at a global level. The nearly universal connectivity which the Internet offers has made it an invaluable business tool. These developments have created a new type of economy, which is called the digital economy. (Shah and Clarke, 2009). Burr (1996) described e-banking as an electronic connection between the bank and customer in order to prepare, manage and control financial communication or transactions. Today e-banking starts a new phase in competition because of its characteristics like speed, efficiency, diminishing the expenses, and gaining benefit of the unique opportunities. Obviously, if the bank`s investment rises the profitability, the e-banking usage in banking industry would be beneficial (Torki et al., 2004).

The banking industry in Ethiopia is embarking on capacity building preparations and modernize the banking system by employing the state of the art technology being used anywhere in the world (Gardachew Worku, 2010). Same fashion, now a day Commercial Bank of Ethiopia and other private Commercial Banks are also

implementing different kinds of e-banking services. A few from among are: Internet banking, mobile banking, ATM (Automated Teller Machine) and POS (Point of Sale Terminal) channels.

The emergence of E-banking in Ethiopia goes back to the late 2001, when the largest state owned commercial bank of Ethiopia (CBE) introduced ATM to deliver service to the local users. In addition to eight ATM's located in Addis Ababa at the time, CBE has had Visa membership since November 14, 2005. However, due to lack of suitable infrastructure, it failed to collect the fruit of its membership. Despite being the pioneer in introducing ATM based payment system and acquired visa membership, CBE was challenged by other competitor banks like Dashen Bank, which worked aggressively to maintain its lead in e-payment system (Gardachew Worku, 2010).

### **1.1. Research problem and gap**

In this era, banks are growing using technology for providing services through self-service mode by using different electronic payment channels. The services through these channels recommend numerous advantages both to the banks and their customers (Ho and KO, 2008). The advantages of e-banking services are decreasing in cost of transaction and lessening the burden of load on branches and also for the customers feels easy to accessible as well as convenient , and time saving (Dawed,2004). Nonetheless, e-banking service under developing nations like Ethiopia needs further considerations rather than these pre-requisites. Currently, Commercial Bank of Ethiopia has been deploying large number of ATM and POS machines throughout the country by investing huge amount of money and endeavoring to expand electronic alternative self-service channels (CBE Annual Report, 2015). However, periodic report and customer complaint tells us that the customers are disappointed by ATMs for many reasons. Some of the justifications are: because of problems related to the machine either defective or short of transactions (Hardware fault), network failure, power interruption (CBE ATM periodic performance reports), inconvenient location of ATM, awareness gap and related problems that hinder the service quality and the bank's profitability.

Pertinent to previous studies, different attributes have been reflected on the area of e-banking by various scholars. For example, Karawish and Al-sa'di (2011) made an attempt to assess the impact of e-banking on profitability of the bank sectors, and results have shown that applying the e-banking services through the internet had no significant effect on Return on Equity (ROE), but significant in terms of Return on Assets (ROA). Three years later, a similar study conducted by Mensah Mawutor (2014) clearly elaborated that e-banking has significant impact on profitability of banks both in terms of ROA and ROE. These researchers reached a conclusion by inferring ROA and ROE, but the present research tried to encompass ROA, ROE, and NIM which is more comprehensive than prior researches.

There are also other researchers who conducted researches on related issues, but they concentrated on adoption of e-banking and its challenge and opportunities in Ethiopian banking industry (i.e Ayana G, (2010) on adoption of E-banking in Ethiopia; Barriers and Drivers; Gardachew W., (2010) on electronic banking in Ethiopia: practices, opportunities and challenges, Million, (2013) on impact of electronic banking on customer satisfaction). This implies that prior research works did not give an emphasis on e-banking implication on profitability. Besides, most of the empirical evidences made available on e-banking were outside Ethiopia. In other words, the studies were conducted out of contexts where the cultural, geographical, and economic conditions are different from Ethiopia.

In the study area, there has not yet been detail research works made available to e-banking service with its implication on profitability in Ethiopian context. Therefore, the researcher was motivated to fill those aforementioned gaps (i.e Methodological gap, focused area gap and contextual gap) and tried to conduct a research on e-banking services which will help to substantiate the service quality, customer awareness and satisfaction level, along with its impact on profitability of Commercial Bank of Ethiopia.

### **1.2. Objectives of the study**

- a. To identify and prioritize the problems encountered by customers in using e-banking service
- b. To estimate the contribution of e-banking on the profit level of CBE before and after introduction of e-banking services.

### **1.3. Significance of the study**

The results of this research paper will have important contributions to financial institutions, particularly banks to understand the relative benefit of e-banking services and its impact on profitability of CBE. Moreover, banks will obtain valuable information about how customers are satisfied if e-banking service is put in to place in the foreseeable future.

### **1.4. Scope of the study**

Although there are different commercial banks in Ethiopia, this study targeted on the CBE branches found in Dessie Town. Specifically, the research was confined on the 7 branches of CBE, all providing e-banking services through ATM and POS machines, Mobile Banking and Internet Banking channels. Temporarily, the study was delimited to the periods (years) between 2008 and 2015. By that, for ease analysis and explanation, years from 2008 to 2011 were categorized as before introduction of e-banking, while years from 2012 to 2015 were categorized as after implementation of e-banking services.

### **1.5. Limitation of the study**

During the entire study period, there are two constraints were encountered such as lack to access secondary data on revenue generated from e-banking services restricted to one subsidiary account category on database, and 8 questionnaires were not completely and/or appropriately filled by the respondents, all were exempted during data analysis period.

## **2. LITERATURE REVIEW AND CONCLUSION**

Bello and Dogarawa (2005) also examined and assessed the impact of e-banking services on customer satisfaction in the Nigerian Banking industry. Their study found out that many bank customers in Nigeria are fully aware of the positive development of information technology and telecommunication which lead to the introduction of new delivery channels. The study also found services. This is expressed in the number of times customers physically visit banks and length of time spent before such service were received.

Rasaq Koladie (2010) investigated the effect of electronic payment on customer service delivery, as brought about by problem of satisfying customers need of banks, the study concludes that e-payment has significant impact on the service rendered by the banking industry, there by improves customers service delivery, better management efficiency, increased profit and customers satisfaction in the case study area.

In Ethiopia, the majority of other previous researches mainly focused on adoptions and its challenges of e-banking in Ethiopia. Even though these efforts are appreciated, a number of gaps were identified by the researcher. For example, the lack to substantiate both sources (primary or secondary data), and hence finding remained to be one-sided. In addition, those study results lack to explain the actual links between e-banking service and its impact on profitability. Further, efforts in Ethiopia have been limited to number of shortcomings. One is for the reason that few researches have been conducted based on panel data, which is likely unable to explain e-banking problems and prospects in full-fledged manner.

There are also other researchers who conducted researches on related issues, but they concentrated on adoption of e-banking and its challenge and opportunities in Ethiopian banking industry (i.e Ayana G. (2010) on adoption of E-banking in Ethiopia; Barriers and Drivers; Gardachew Worku (2010) on electronic banking in Ethiopia: practices, opportunities and challenges, Million (2013) on impact of electronic banking on customer satisfaction). This implies that prior research works did not give an emphasis on e-banking's implication on profitability. Besides, most of the empirical evidences made available on e-banking were outside Ethiopia.

## **3. METHODOLOGY**

### **3.1, Research Design and Approach**

The researcher adopted a descriptive research design following Kothari's (2004). Equally, descriptive research design is used to describe the states of affairs as it exists at present. Therefore, this similar design was applied in this study, for the reason that most of the specific objectives which are related to demographic factors of e-banking users and problems frequently encountered by CBE customers can best be understood if descriptive research design is followed.

### **3.2. Research Population and Sampling**

In this study, the sampling was held after identifying the optimum number of customers currently utilizing e-banking services at branches of CBE in Dessie Town. Apparently, lists of customers from Dessie main, Mugad, Buanbwawuha, Tossa, Dawudo, Gerado and Ayteyef branches were obtained from the bank's database. And then, following proportionality criteria, the total sample size was further distributed representing the seven branches. These branches were chosen, because they provide all types of e-banking services. Sampling units were randomly chosen to fill the questionnaire, by confirming one's own branch. Questionnaires were filled by customers based on their availability when using ATM service in respective branch by confirming where they open their bank book of account. The reason for confirming bank account from customers was that strata proportion was made based on the customer bases of each branch.

#### **3.2.1 Target Population**

Target population was chosen for sampling of e-banking customers of CBE's branches in Dessie Town. Respondents were selected from a total of 7 branches. Sample size was determined based on the number of e-banking customers each branch maintained. It is a common practice in research to use sample in order to generalize about the targeted populations. The study considered a gross total of 23,868 target population, from which 204 were taken as a sample for the study.

#### **3.2.2 Sampling Frame**

This sub-section is expected to address the object within which the information is desired from e-banking customers of CBE in seven branches found in Dessie town. With this, the researcher tried to obtain information regarding: customers' examining the quality of e-banking services and, problems and challenges customers frequently encountered during usage of e-banking services.

#### **3.2.3 Sampling Technique**

The researcher used probability sampling method which was based on proportional stratified sampling technique to select representative samples from e-banking users. Sampling was held in the seven commercial Bank of Ethiopia found in Dessie town branches, all were e-banking customers in the study area. The reason for using proportional stratified sampling technique was that, there were different number of sample units in terms of customer's-base/number at the different independent CBE branches.

#### **3.2.4 Sample Size Determination**

In this study, sample size was determined by adopting Fowler's (1984) method, as cited by Temesgen (2015). In that, for a given population, the level of precision increases steadily up to sample sizes of 150 to 200. In this regard, taking the available resources, time, budget, data, and geographic distances into account, a sample size of 204 were feasible from the 23,868 customers of e-banking users in Dessie town. Thus, the researcher applied the formula as was used by Yamane (1967) assuming the level of precision or sampling error ( $e$ ) to be 7%, and, desired a confidence level of 93%, while expecting a margin of error to be 7%. Based on these the total sample size was 204 customers and applied proportionate sampling to decide the sample size for the 7 branches of CBE.

### **3.3. Sources of Data Collection**

The sources of the primary data for this study were customers of Commercial Bank of Ethiopia in Dessie town branches who were users of e-banking channels. The secondary data was collected from the Annual financial statement of the Commercial Bank of Ethiopia stemming from the year 2008 to 2015, eight years period. Besides, various procedure manuals, strategic documents of CBE and different Bank-related Magazines (CBE) were used. In addition, findings of prior research works, e-banking journals, service marketing books and, the CBE website were highly utilized as reference materials.

#### **3.3.1. Research Instrument/Data Collection Method**

The required data and/or information were obtained through questionnaire, prepared in the form of both closed-and-open-ended types of questionnaire. While, secondary data was collected mainly from annual financial statement of CBE in order to compare the impact e-banking services on profitability of CBE before and after introduction of e-banking. While collecting primary data, questionnaires were distributed to e-banking users while using ATM services based on their availability by confirming their branches through keeping the relative

proportion of each branch. Questionnaires were assigned by respective code numbers. Respondents filled and completed their response for each provided questions. After it, the researcher checked and corrected whether or not questionnaires were properly filled. Then, questionnaires were filtered and organized for further data processing.

### 3.4. Method of Data Analysis

During data analysis period, both descriptive and inferential statistics were used as per the desired objectives of the study. For descriptive statistics, the Statistical Package for Social Sciences (SPSS, Ver. 20) was used. Frequency distribution for each variable was first determined, and result values were expressed in percent. Aggregated variables per unit of inquiries were presented through summary tables. On the other hand, inferential statistics (i.e. mean comparison test and paired sample t-test) were used in order to explain the relationship between e-banking services and profitability of CBE before and after implementation of e-banking.

## 4. RESULTS AND DISCUSSIONS

The sample size was determined as 204 customers to collect data from e-banking users of 7 branches of CBE but the researchers received 196 questionnaires from the customers with full response sheet and the remaining questionnaire did not returned by the respondents due to time constraints.

### 4.1.1 Demographic Characteristics of the Respondents

**Table 4-1: Demographic characteristics of the respondents**

S.No	Item	Category	Freq	Percent
1	Sex	Male	119	60.7%
		Female	77	39.3%
2	Age(years)	18-25	30	15.3%
		26-35	110	56.1%
		36-45	40	20.4%
		46-55	15	7.7%
		56-65	1	0.5%
3	Educational Qualification	Elementary and Junior	1	0.5%
		12 Complete	32	16.3%
		Diploma	21	10.7%
		Under Graduate	97	49.6%
		Post Graduate	42	21.4%
		PHD	3	1.5%
4	Length of Time that the respondent as CBE Customer	Less than one year	11	5.6%
		Between 1 - 5 years	111	56.6%
		Between 6 - 10 years	47	24%
		Above 10 years	27	13.8%
5	Type of account opened in CBE	Current/Demand Account	7	3.6%
		Savings Account	175	89.3%
		Interest Free Banking(IFB)	12	6.1%
		Saving and IFB	1	0.5%
		Saving, Current and IFB	1	0.5%
6	Type of E-banking services used by customers	Automatic Teller machine(ATM)	56	28.6%
		ATM and Mobile Banking	97	49.5%
		ATM, Mobile banking and (POS)	22	11.2%
		ATM, Mobile banking Point of sales(POS) and Internet banking	21	10.7%

[Source::Own Survey Results 2 2017]

As indicated in the above table 4.1, regarding to the sex of the respondents, from total respondents, 60.7% of the respondents are males and 39.3% of them are females. With regard to age of the respondents that 56.1% of them

are in between 26 and 35 years. This implies that the majority of customers who were utilizing e-banking services are relatively young. Concerning educational qualification, the information in the above table reveals that 49.5% are under graduate degree holders and this implies that a majority of the e-banking customers are literate.

With regard to the length of time the respondents have stayed as customers of CBE are 24% indicated that they have been served for 5-10 years and it implies that majority of e-banking customers opened account in CBE after implementation of e-banking services with wide area network (beginning of 2012). Further related to the type of e-banking channels used by customers are 49.5% frequently used ATM and mobile banking services and this implies that all the respondents are using at least one type of e-banking service. However, ATM and Mobile banking services are most dominantly used e-banking services in the study area.

#### 4.1.2 Problems which may be encountered by e-banking customers of CBE

Out of 196 customers, the problems encountered by 192 e-banking users and the Results of the items of the section are presented and analyzed as follows.

**Table 4-2: Respondents’ rank status of the problems of e-banking service**

No	Problems	Frequency of Problems faced by respondents (calculating the relative degree of importance of values, from 1 to 7, where 1 is the most frequent and 7 is the least one)							Sub total	Weight score	Index Value	Rank
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>				
1	Cash Shortage	10	23	33	39	31	22	34	192	700	0.13	4
2	Network	119	37	22	12	2	0	0	192	1219	0.23	1
3	System failure and machine break down	19	44	45	42	19	12	11	192	882	0.17	3
4	Power Failure	26	61	41	36	18	7	3	192	968	0.18	2
5	Non-availability of internet	10	17	33	37	54	33	8	192	721	0.13	4
6	Unable to access on weekend	4	8	14	16	36	79	35	192	511	0.10	6
7	Bank Policy and Procedure on withdrawal limit	4	1	7	11	28	39	102	192	299	0.06	7
Sub total		192	191	195	193	188	192	193		5300	1.00	

[Source: Own Survey Results 2017]



As depicted in table 4-2, network failure takes the lion's share and ranked first as it was agreed by the majority of the respondents as frequent challenge, lack of reliable power supply was ranked 2<sup>nd</sup>, frequent system failure and machine breakdown ranked 3<sup>rd</sup>, and cash shortage in ATM machine and non availability of internet both were equally ranked as 4<sup>th</sup> major problems by a majority of the respondents while using e-banking services. Moreover, inability to access in the weekend and bank policy and procedures on daily withdrawal limit were 5<sup>th</sup> and 6<sup>th</sup> problems by the respondents respectively. This implies that these are less severe problems and challenges for majority of e-banking customers.

#### **4.2. Discussion on Secondary Data Analysis**

Secondary data analysis was conducted based on mean comparison results of ROA, ROE and, NIM by comparing their average values before and after introduction of e-banking services by the CBE. Years considered for analysis were between 2008 and 2015, of which from 2008 to 2011 were considered as before and, from 2012 to 2015 were considered as after introduction of e-banking services. In doing so, mean comparison analysis and paired sample T-Test were performed to explain the relationship between e-banking services and profitability.

**Table 4-3: Mean Comparison Statistical Summary**

Financial Indicators	Mean	Std. Deviation	Range	
			Minimum	Maximum
Return on asset before e-banking services(2008-2011)	4.1250	0.44253	3.70	4.60
Return on asset after e-banking services (2012-2015)	5.0500	0.63509	4.40	5.90
Return on equity before e-banking services(2008-2011)	57.5500	8.94185	51.90	70.90
Return on equity after e-banking services(2012-2015)	111.4750	15.70889	98.00	132.60
Net interest margin before e-banking services (2008-2011)	3.4750	0.57373	2.70	4.00
Net interest margin after e-banking services(2012-2015)	4.5250	.17078	4.30	4.70

**[Sources: CBE Annual Financial Report 2008 to 2015]**

In order to address the last objective on testing the statistical significance difference between two different periods on some performance indicators of some CBE variables such as Return on Assets (ROA), Return on equity (ROE) and the Net interest margin(NIM) ratio, data before the introduction of e- banking (2008-2011) with the period in which e-banking was introduced (2012-2015) so as to compare the mean of each performance indicators.

Accordingly, the mean of Return on Assets (ROA) of Commercial Bank of Ethiopia before implementation of e-banking for the year from 2008 to 2011 with a value of 4.13% and also the Return on Assets mean value after the introduction of e-banking 2012-2015 is estimated to be 5.05%. This indicated that there is positive increment registered in the ratio of Return on Assets after implementation of e-banking services.

On the same way the average value of Return on Equity (ROE) before introduction of e-banking four consecutive same period estimated mean value of 57.55% and also the Return on equity mean value after the implementation of e-banking four years period estimated that 111.47%. Thus, a mean difference of 53.93% ROE is registered between the two defined periods.

Regarding the Net interest margin (NIM) ratio, before introduction of e-banking the ratio was a mean of 3.48% and it becomes 4.53% after introduction of e-banking services. Thus a mean difference of 1.05% of NIM ratio has been recorded between the two periods.

**Table 4-4: Paired Samples T-Test**

Particulars		Paired Differences					T	df	P-value
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Return on asset after e-banking services - Return on asset before e-banking services	0.92500	0.87702	0.43851	-0.47054	2.32054	2.109	3	0.125
Pair 2	Return on equity after e-banking services - Return on equity before e-banking services	53.92500	8.36755	4.18377	40.61037	67.23963	12.889	3	0.001
Pair 3	Net interest margin after e-banking services - Net interest margin before e-banking services	1.05000	0.59722	0.29861	0.09970	2.00030	3.516	3	0.039

Based on the result of paired sample T-test stated on table 4-4. The mean difference of ROA before and after e-banking service implementation of CBE is estimated to be 0.925%, indicated that the ROA after the implementation of the service exceeds by 0.925 percent that of before implementation of the service. Since the P value (0.125) is greater than the defined level of significance (0.05) there is no statistically significance difference on ROA between before and after the implementation of e-banking services. In other words a mean difference of 0.925 is not strong enough to make a difference on Return on Assets performance of CBE between two periods.

The mean difference of ROE before and after e-banking services implementation of CBE is estimated to be 53.925 indicted that the ROE after the implementation of the services exceeds by 53.925 percent that of before implementation of the service. Since the P value (0.001) is less than the defined level of significance (0.05) there is statistically significance difference on ROE between before and after the implementation of e-banking services.

The mean difference of NIM before and after e-banking services implementation of CBE is estimated to be 1.05% indicted that the NIM after the implementation of the services exceeds by 1.05% percent that of before implementation of the service. Since the P value (0.039) is less than the defined level of significance (0.05) there is statistically significance difference on NIM between before and after the implementation of e-banking services.



In general, the above computations clearly indicated that the e-banking does have an impact on profitability of Commercial Bank of Ethiopia. Since the introduction of e-banking by the bank through Core banking system in 2012, there have clearly been changes in all the profitability ratios of the bank (ROA, ROE, and NIM).

## **5. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS**

### **5.1.2. Problems encountered by customers in the use of e-banking services**

Concerning to problems encountered by customers while using e-services, majority of the respondents faced problems when using e-banking services. Further, regarding to the severity and frequency of the challenges, the customers ranked network failure as the 1<sup>st</sup> problem and takes the lion share, power failure as the 2<sup>nd</sup> problem, system failure and machine breakdown as the 3<sup>rd</sup> and cash shortage in ATM machine and non availability of internet both were ranked the 4<sup>th</sup> severe problems.

The results revealed that a majority of the respondents indicated that, when they notified their complaints to the bank officials, they got response in a delayed time (a week and more) which indicates that the bank fails to provide immediate response for its customer complaints regarding e-banking challenge. This implied that Commercial Bank of Ethiopia lacks a fast compliant handling system to solve customers' problems.

The other finding obtained from suggestions of the respondents indicated that there is a presence of language barrier to perform the operations of mobile banking and internet banking channels in an easy and understandable manner.

### **5.1.2. Contribution of e-banking on the profit level of CBE**

The quantative analysis of the secondary data on the basis of mean comparison analysis revealed that there was a positive increment registered in the ratio of Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) after implementation of e-banking services with a mean difference of 0.92%, 53.93% and 1.05% respectively compared with the time before introduction of e-banking .

On the other hand based on the finding of Paired sample t-test, the mean difference of ROA before and after e-banking service implementation of CBE is estimated to be 0.925%, indicated that the ROA after the implementation of the service exceeds by 0.925 percent that of before implementation of the service. Since the P value (0.125) is greater than the defined level of significance (0.05) there is no statistically significant difference on ROA between before and after the implementation of e-banking services. The reason for the statistical insignificance is that there is a significance increment in deposit portfolio of the bank. In the same way the mean difference of ROE 53.925 indicated that the ROE after the implementation of the services exceeds by 53.925 percent that of before implementation of the service. Since the P value (0.001) is less than the defined level of significance (0.05), there is statistically significant difference on ROE between before and after the implementation of e-banking services. Furthermore, the mean difference of NIM 1.05% indicated that the NIM after the implementation of the services exceeds by 1.05% that of before implementation of the service. Since the P value (0.039) is less than the defined level of significance (0.05), there is statistically significant difference on NIM between before and after the implementation of e-banking services.

In general, the above computations clearly indicated that e-banking does have an impact on profitability of Commercial Bank of Ethiopia. Since the introduction of e-banking by the bank through Core banking system in 2012, there have clearly been changes in all the profitability ratios of the bank (ROA, ROE, and NIM).

## **5.2. Conclusion**

Based on the finding of the study, the following conclusions are forwarded;

- Majority of the CBE customers were satisfied by the e-banking services provided to them. However, customers faced different problems associated with e-banking service. Some of the problems that customers indicated were the network failure, power failure, system failure and machine break down, cash shortage in ATMs and unavailability of internet.
- In addition, suggestions of the respondents indicated that there is a presence of language barrier to perform the operations of mobile banking and internet banking channels in an easy and understandable manner. This indicated that it hinders the utilization rate as well as attraction of more customers.

- Majority of the respondents indicated that they recommended their family and friends to use e-banking services which served as a referral market or for CBE. Further, majority of them got many benefits by using e-banking services that e-banking creates good image in the mind of the customers.
- Based on the finding of the study customers complaints were solved with a delayed time (a week and more) which indicates that the bank fails to provide immediate response for its customer complaints regarding e-banking challenge.

Based on the findings of secondary data sources, e-banking does have an impact on profitability of Commercial Bank of Ethiopia. Since the introduction of e-banking by the bank through Core banking system in 2012, there have clearly been changes in all the profitability ratios of the bank interms of (ROA, ROE, and NIM).

### **5.3. Recommendation**

Based on the findings of the study, the following recommendations were forwarded;

- The respondent rank the major problem that encountered while using e-banking services. Therefore, the bank should improve the service quality by reducing problem of network failure, power failure, system failure and shortage of cash in ATM machines using different mitigation mechanisms (upgrading network system, availing power UPS, periodic Maintenance of machine and close follow up on cash availability in ATM) to resolve customer problems and ultimately increases customers satisfaction on e-banking services in general and banks profitability in particular.
- Based on qualitative findings, the mobile and internet banking channels should be performed in local languages like Amharic to increase the number of e- banking users. Therefore, the bank should use a multi- language channels which reduces the language barriers of the customers.
- The finding of the study indicated that CBE had lacked fast and effective compliant handling system. And therefore, the bank should establish efficient and effective compliant handling system in the future in order to retain the existing e-banking customers and to attract new customers (e-banking users).

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