The Impact of E-banking on Service Quality:
(A Case Study of Selected Cities of Punjab)

Dr. Jagdeep Singh,
Professor & Director
IET, Technical Campus,
Bhaddal, Ropar, India.

Ms. Jyotsna Sharma,
Research Scholar
IKGPTU, Kapurthala.

ABSTRACT

To examine the impact of e-banking on service quality five point likert scales have been developed. To achieve this objective, SERVQUAL model was applied on 42 statements. Total 42 statements have been used. Respondents are asked to rate these items from 1 to 5 points based on their experiences of using e-banking services. To check the reliability of scale Cronbach’s alpha have been checked. The Cronbach’s value comes to be .765 which indicates the value scale use is reliable. Factor analysis was used to extract those factors having Eigen value greater than 1. In order to study the impact of e-banking on service quality it is important to study factors which customers choose while using e-banking. It is assumed that all factors are equally important to know the impact of e-banking on the level of customer satisfaction. The identified factors can be called as Service quality dimensions.

Keywords: Service Quality Dimensions, E banking, Internet, Customer Satisfaction, Factor Analysis.

INTRODUCTION:

Nowadays Electronic banking is a very common service that is used by every person in a way or another for making transactions. It can be use of internet banking services, telebanking, mobile banking, ATM services. Banks offers wide range of E banking services. Banking industry has revolutionized the E banking services with the help of technology. In the fight of gaining huge market share every organization focuses on offering best quality service so that the customer can be satisfied and hence retained. So service quality has become an important factor to determine the customer liking and disliking for a particular service. So the main objective of the study therefore is to study the E banking service quality and find out the major factor impacting the service quality.

REVIEW OF LITERATURE:

Fozia(2013) in a study on “A Comparative Study of Customer Perception toward E-banking Services Provided By Selected Private & Public Sector Bank in India” has determined the customer’s perception toward the e-banking services. The result of the study clearly shows that different age group of customer and different occupation group of customers have different perception toward the e-banking services. The results also propose that demographic factors impact significantly internet banking behavior, specifically, occupation and age.

Gaurang Trivedi (2014) in a study on “Internet Banking & Customer Retention- A study on the impact of internet Banking on Customer Retention of HDFC Bank” has find out the impact of internet banking to retain customers in the context of HDFC Bank. His study has indicated that the factors, which are Service Quality, Responsiveness, Security and Privacy, Assurance, and Reliability have impacts on customer retention in terms of Internet Banking.
Dr. Geeta Sharma and Surendra Malviya (2014) in their study titled “Internet Banking Service Quality and Its Impact On Customer Satisfaction In Indore District of Madhya Pradesh” found that there is a positive impact of service quality dimensions on customer satisfaction. The study shows that Website ease of use, comfort, accessibility; confidence and responsiveness are the major integral determinants of internet banking services quality.

Md. Shahidul Islam (2015) in a research on “Analysis of service quality and satisfaction level of customers in banking sector of Bangladesh” has studied the impact of service quality on customer satisfaction in banking sectors. This study investigated the customer satisfaction and service quality relationship in terms of five dimension such as Initial Experience, Delivery service condition, Service Experience, Relationship & Environment and Grievance Handling. The study explained a positive correlation between the dimensions of service quality and customer satisfaction.

Fatemeh Sakhaei & Ahmad J. Afshari (2015) in a study “The Impact of Service Quality on Customer Satisfaction in Internet Banking” has studied the impact of service quality factors of internet Banking on customer satisfaction in Iran. The study shows that the Six service quality dimensions has meaningful relationship with customer satisfaction in Internet Banking and reliability has most relation and website design has least relation to customer satisfaction.

Uday Singh Rajput (2015) in his research Customer Perception on E-Banking Service has studied Customers perception on online banking activities and its impact. It was discovered that customers adapting e banking services very leisurely such as ATM, home banking, use of payment cards etc. Still people of these areas are not using all the E-banking services frequently because they have very little more knowledge about computer and internet so they feel hesitation is using E-banking services.

R. Kavitha and Fatima Razia (2016) in a study “Factor Analysis of Customer Preference Towards E –Banking Services With Special Reference To Coimbatore City” has analyzed the factors encouraging to prefer e – banking services by customers. She picked twenty factors and after performing factor analysis she concluded that all factors can be summarized into six factors named Data Management and Integrity, Trust in e –services, User friendly, Grievance Handling, Easy login, Reputation and Prompt Service which were preferred by customers.

OBJECTIVE OF THE STUDY:

- To examine the impact of e banking on service quality.
- In order to fulfill primary objective we need to study it into two parts. Primary objective is being bifurcated into secondary objectives.
- To find major factors impacting the customer preference for using E-banking services.
- To study the difference amongst various factors impacting use of E-banking services.

RESEARCH METHODOLOGY:

The Sample area considered for study is Punjab. Members of the universe are chosen based on population as per census 2011. The most populated cities of Punjab have been selected. The random sampling has been used taking into consideration the availability and accessibility of the customers for the purpose of data collection. Descriptive research design is used in the study. Descriptive research is used to obtain information concerning the current status of the phenomena to describe what exists with respect to variables or conditions in a situation. Total 500 internet users have been selected for the study from cities of Ludhiana, Amritsar, Jalandhar, Patiala and Bathinda. The data collected for study is both Primary & Secondary. The data is collected from both urban & rural areas of Punjab. SPSS 20 has been used for analysis purpose. Exploratory Factor analysis (EFA) is used to find the important factors impact the service quality of E banking services. To analyze the impact of E-banking on service quality from customers’ angle, a modified SERVQUAL type questionnaire relevant to the e banking service was prepared.

HYPOTHESIS TO BE TESTED FOR THE STUDY:

Ho: There is no significant difference amongst different factors impacting the use of E-banking services.
Ha: There exists significant difference amongst different factors impacting the use of E-banking services.
ANALYSIS & DISCUSSION:

To achieve this objective, SERVQUAL model was applied on 42 statements. This analysis was conducted using factor analysis, t-test, Cronbach’s alpha and KMO and Bartlett’s test. Factors which are extracted is termed as service quality dimensions. Service quality dimensions are important because it helps to examine the impact of E banking services on customer satisfaction.

Table 1: Reliability Statistics

| Cronbach’s Alpha | N of Items |
|------------------|-----------|
| .765             | 42        |

As a rule the value of 0.70 and above for the Cronbach’s alpha is sufficient. As table 1 indicates, all the variables have an alpha of 0.765 which concludes that reliability of the scale is highly satisfactorily

Table 2: KMO and Bartlett’s Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .755 |
|-----------------------------------------------|------|
| Bartlett's Test of Sphericity                 |      |
| Approx. Chi-Square                            | 8666.167 |
| df                                            | 861  |
| Sig.                                          | 0.000 |

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett’s Test of Sphericity have been applied to test whether the relationship among the variables has been significant or not. The Kaiser Meyer-Olkin Measure of sampling adequacy shows that the value of test statistics is 0.755 which means the factor analysis for the selected variable is found to be appropriate or good to the data. Bartlett’s test of sphericity is used to test whether the data are statistically significant or not with the value of test statistics and the associated significance level. In table II we conclude that p<0.001 shows there exist some relationship among variables. Hence factor analysis is appropriate.

Table 3: Item Statistics

|                                                                 | Mean | Std. Deviation |
|-----------------------------------------------------------------|------|----------------|
| It provides accuracy in billing.                                | 4.24 | .785           |
| It helps in keeping records correctly.                          | 4.38 | .755           |
| It performs the service at designated time.                     | 4.10 | 1.034          |
| E-banking is very necessary for the development of new economy of India. | 3.94 | 1.435          |
| It improves the quality of customer service.                    | 3.96 | .833           |
| Response of service through e-banking is very prompt and quick. | 4.40 | .548           |
| Availability of service is faster in e-banking as compare to manual banking. | 4.44 | .497           |
| Transfer of fund is easier through E-banking.                   | 4.33 | .804           |
| E-Banking provides more punctuality, transparency, accountability. | 4.43 | .610           |
| Transfer of funds is faster as compared to manual banking system. | 4.39 | .585           |
| It is trusted by young generation.                              | 3.35 | 1.344          |
| E-Banking services are accessible via Internet banking, Mobile banking, EFT, ECS, ATM. | 4.61 | .523           |
| It provides convenient location of service facility(location of ATM, POS terminals) | 4.20 | .667           |
| It reduces the waiting time to receive the service.             | 4.17 | 1.032          |
| E-Banking explains the service itself.                          | 3.76 | 1.191          |
| It explains the cost of service being used.                     | 3.78 | 1.169          |
| It assures the customer that problem will be handled.           | 3.12 | 1.379          |
| It explains the trade off between service and cost.             | 2.94 | 1.146          |
| E-banking provides up to date information.                      | 4.31 | .715           |
| It also provides information for well educated customers.       | 3.93 | .906           |
| It helps in reducing the no. of queues in the bank branches     | 3.60 | 1.048          |
| Online purchase of goods and services including online payment is easier. | 4.57 | .597           |
| E-banking provides effective medium of promotion of various schemes. | 4.85 | 7.314          |
E-banking increases the reputation of the banks.  
It increase believability, honesty and trustworthiness of the customers in banks.  
It ensures the ability to fulfill the requirement.  
Degree of reliability involved in Interaction with customer is more in e-banking.  
It provides unlimited network to the banks to approach customers.  
E-banking ensures physical safety of the transaction.  
Password facility provides confidentiality to transaction.  
It also increases the financial security.  
It provides necessary information to the customers and It helps in better customer relationship, attracting and retaining them.  
Privacy can be easily maintained.  
It provides individualized attention to the customers.  
Website of the bank is designed according to the need of the customer.  
It ensures to provide necessary information to the customer.  
E-banking learns the specific requirement of the customer.  
Banks use advanced Computer/IT to serve clients.  
E-banking provides modern looking equipment.  
Physical representation of service through plastic card, credit and debit card is easy.  
E-banking provides more physical facilities to the customers.  
E-banking provides 24 hours, 365 days a year service to customers.

| Item                                                                 | Mean | Std. Deviation |
|----------------------------------------------------------------------|------|----------------|
| E-banking increases the reputation of the banks.                    | 3.32 | 1.435          |
| It increase believability, honesty and trustworthiness of the customers in banks. | 3.34 | 1.285          |
| It ensures the ability to fulfill the requirement.                  | 3.51 | 1.406          |
| Degree of reliability involved in Interaction with customer is more in e-banking. | 3.36 | 1.545          |
| It provides unlimited network to the banks to approach customers.   | 3.14 | 1.478          |
| E-banking ensures physical safety of the transaction.               | 4.47 | .574           |
| Password facility provides confidentiality to transaction.          | 4.12 | .752           |
| It also increases the financial security.                           | 4.10 | 1.180          |
| It provides necessary information to the customers and It helps in better customer relationship, attracting and retaining them. | 3.38 | 1.212          |
| Privacy can be easily maintained.                                   | 4.31 | .774           |
| It provides individualized attention to the customers.              | 2.31 | 1.298          |
| Website of the bank is designed according to the need of the customer. | 3.07 | 1.309          |
| It ensures to provide necessary information to the customer.        | 3.23 | 1.076          |
| E-banking learns the specific requirement of the customer.          | 3.18 | 1.386          |
| Banks use advanced Computer/IT to serve clients.                    | 3.64 | 1.288          |
| E-banking provides modern looking equipment.                        | 4.22 | .656           |
| Physical representation of service through plastic card, credit and debit card is easy. | 4.22 | .663           |
| E-banking provides more physical facilities to the customers.       | 3.45 | 1.511          |
| E-banking provides 24 hours, 365 days a year service to customers.  | 4.03 | 1.113          |

Table III shows the mean values for the 42 items used in scale. Value above 3 indicates that respondents are comfortable to use E banking services. Value below 3 shoes that customer are not convenient with the particular service. For the variables It explains the tradeoff between service and cost mean value is 2.94 and it provides individualized attention to the customers mean value is 2.31 which indicate that respondents don’t consider these a very good quality variables. For remaining variables, mean value is above 3.0 which indicate respondents are happy using E banking services. Hence overall respondents are satisfied.

Table 4: Communalities

| Item                                                                 | Initial | Extraction |
|----------------------------------------------------------------------|---------|------------|
| It helps in keeping records correctly                                | .769    | .727       |
| It helps in keeping records correctly                               | .745    | .683       |
| It performs the service at designated time.                         | .752    | .559       |
| E-banking is very necessary for the development of new economy of India. | .898    | .847       |
| It improves the quality of customer service                         | .633    | .675       |
| Response of service through e-banking is very prompt and quick.     | .787    | .470       |
| Availability of service is faster in e-banking as compare to manual banking | .694    | .406       |
| Transfer of fund is easier through E-banking.                       | .835    | .818       |
| E-Banking provides more punctuality, transparency, accountability.  | .744    | .587       |
| Transfer of funds is faster as compared to manual banking system.   | .766    | .729       |
| It is trusted by young generation.                                  | .802    | .761       |
| E-Banking services are accessible via Internet banking, Mobile banking, EFT, ECS, ATM. | .698    | .685       |
| It provides convenient location of service facility(location of ATM, POS terminals) | .795    | .724       |
| It reduces the waiting time to receive the service.                 | .860    | .833       |
| E-Banking explains the service itself.                              | .655    | .509       |
| It explains the cost of service being used.                         | .807    | .723       |
| It assures the customer that problem will be handled. | .732 | .631 |
| It explains the trade off between service and cost. | .853 | .833 |
| E-banking provides up to date information. | .910 | .780 |
| It also provides information for well educated customers. | .486 | .419 |
| It helps in reducing the no. of queues in the bank branches. | .902 | .738 |
| Online purchase of goods and services including online payment is easier. | .331 | .255 |
| E-banking provides effective medium of promotion of various schemes. | .882 | .798 |
| E-banking increases the reputation of the banks. | .923 | .860 |
| It increase believability, honesty and trustworthiness of the customers in banks. | .942 | .881 |
| It ensures the ability to fulfill the requirement. | .913 | .871 |
| Degree of reliability involved in Interaction with customer is more in e-banking. | .909 | .883 |
| It provides unlimited network to the banks to approach customers. | .786 | .706 |
| E-banking ensures physical safety of the transaction. | .691 | .593 |
| Password facility provides confidentiality to transaction. | .844 | .784 |
| It also increases the financial security. | .853 | .739 |
| It provides necessary information to the customers and it helps in better customer relationship, attracting and retaining them. | .904 | .857 |
| Privacy can be easily maintained. | .859 | .740 |
| It provides individualized attention to the customers. | .886 | .829 |
| Website of the bank is designed according to the need of the customer. | .886 | .780 |
| It ensures to provide necessary information to the customer. | .909 | .795 |
| E-banking learns the specific requirement of the customer. | .779 | .459 |
| Banks use advanced Computer/IT to serve clients. | .877 | .779 |
| E-banking provides modern looking equipment. | .712 | .631 |
| Physical representation of service through plastic card, credit and debit card is easy. | .739 | .698 |
| E-banking provides more physical facilities to the customers. | .894 | .820 |
| E-banking provides 24 hours, 365 days a year service to customers. | .534 | .399 |

**Extraction Method:** Principal Component Analysis  
**Source:** Primary Data  

The communalities table represents the application of the Factor Extraction Process. Principal Component Analysis method is used to identify the number of factors to be extracted from the data and by specifying the most commonly used Varimax rotation method. In the principal component analysis, total variance in the data is considered. The proportion of the variance is explained by the five factors in each variable. The proportion of variance is explained by the common factors called communalities of the variance. Principal Component Analysis works on initial assumption that all the variance is common. Therefore, before extraction the communalities are all 1.000. Then the most common approach for determining the number of factors to retain i.e. examining Eigen values was done.

**Table 5: Total Variance Explained**

| Factor | Initial Eigenvalues | Extraction Sums of Squared Loadings | Rotation Sums of Squared Loadings* |
|--------|---------------------|-------------------------------------|----------------------------------|
|        | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total |
| 1      | 12.36 | 29.43 | 29.437 | 12.13 | 28.902 | 28.902 | 6.332 |
| 2      | 4.138 | 9.852 | 39.289 | 3.859 | 9.189 | 38.091 | 3.275 |
| 3      | 2.741 | 6.527 | 45.816 | 2.386 | 5.681 | 43.772 | 2.883 |
| 4      | 2.492 | 5.932 | 51.748 | 2.202 | 5.242 | 49.014 | 3.781 |

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Extraction Method: Principal component analysis.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance’s

According to Kaiser Principle, factors which have Eigen value of 1 or more than one are chosen. These nine factors out of forty two have been extracted which represents the total of 72.2% variance.
Table 6: Rotated Component Matrix

| Rotated Component Matrix | Factor | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   |
|--------------------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Response of service through e-banking is very prompt and quick. |        |     |     |     |     |     |     |     |     | 0.549 |
| It helps in keeping records correctly. |        |     |     |     |     |     |     |     |     | 0.549 |
| E-banking provides up to date information. |        | 0.778 |     |     |     |     |     |     |     |     |
| It also provides information for well educated customers. |        | 0.776 |     |     |     |     |     |     |     |     |
| It improves the quality of customer service. |        |     |     |     |     |     |     |     |     | 0.485 |
| It provides accuracy in billing. |        |     |     |     |     |     |     |     |     | 0.431 |
| Availability of service is faster in e-banking as compare to manual banking. |        |     |     |     |     |     |     |     |     | 0.441 |
| Transfer of fund is easier through E-banking. |        |     |     |     |     |     |     |     |     | 0.558 |
| E-Banking provides more punctuality, transparency, accountability. |        |     |     |     |     |     |     |     |     | 0.523 |
| E-Banking services are accessible via Internet banking, Mobile banking, EFT, ECS, ATM. |        |     |     |     |     |     |     |     |     | 0.672 |
| It performs the service at designated time. |        |     |     |     |     |     |     |     |     | 0.511 |
| It explains the cost of service being used. |        |     |     |     |     |     |     |     |     | 0.411 |
| It explains the trade off between service and cost. |        |     |     |     |     |     |     |     |     | 0.503 |
| It reduces the waiting time to receive the service. |        |     |     |     |     |     |     |     |     | 0.668 |
| E-Banking explains the service itself. |        |     |     |     |     |     |     |     |     | 0.711 |
| Transfer of funds is faster as compared to manual banking system |        |     |     |     |     |     |     |     |     | 0.409 |
| Degree of reliability involved in Interaction with customer is more in e-banking. |        |     |     |     |     |     |     |     |     | 0.654 |
| It provides convenient location of service facility(location of ATM, POS terminals) |        |     |     |     |     |     |     |     |     | 0.407 |
| It is trusted by young generation. |        |     |     |     |     |     |     |     |     | 0.423 |
| E-banking is very necessary for the development of new economy of India. |        |     |     |     |     |     |     |     |     | 0.553 |
| It helps in reducing the no. of queues in the bank branches. |        |     |     |     |     |     |     |     |     | 0.7716 |
| Online purchase of goods and services including online payment is easier. |        |     |     |     |     |     |     |     |     | 0.444 |
| It ensures to provide necessary information to the customer |        |     |     |     |     |     |     |     |     | 0.611 |
| It provides individualized attention to the customers |        |     |     |     |     |     |     |     |     | 0.538 |
The above table represents the Rotated Component Matrix. The coefficients are the factor loadings which represent the correlation between the factors and the 42 variables. From the above factor matrix it is found that coefficients for Factor-I have high absolute correlations with variable E-banking provides up to date information(.553), It also provides information for well educated customers(.449), It explains the cost of service being used(.411), It explains the tradeoff between service and cost(.503), E-Banking explains the service itself(.711), It assures the customer that problem will be handled(.841) and E-banking provides effective medium of promotion of various schemes(.605).

| Rotated Component Matrix * | Factor |
|---------------------------|--------|
|                           | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      |
| E-banking provides 24 hours, 365 days a year service to customers. |        | 0.672  |        |        |        |        |        |        |        |
| It ensures the ability to fulfill the requirement. |        |        | 0.772  |        |        |        |        |        |        |
| It assures the customer that problem will be handled. | 0.841732 |        |        |        |        |        |        |        |        |
| It increase believability, honesty and trustworthiness of the customers in banks. |        |        |        | 0.766  |        |        |        |        |        |
| Website of the bank is designed according to the need of the customer. |        |        |        |        | 0.65   |        |        |        |        |
| E-banking ensures physical safety of the transaction. |        |        |        |        |        |        |        |        | 0.757  |
| It provides unlimited network to the banks to approach customers. |        |        |        |        |        | 0.606  |        |        |        |
| It also increases the financial security. |        |        |        |        |        |        |        |        | 0.505  |
| It provides necessary information to the customers and It helps in better customer relationship, attracting and retaining them. |        |        |        |        |        |        | 0.614  |        |        |
| Privacy can be easily maintained. |        |        |        |        |        |        |        |        | 0.633  |
| E-banking increases the reputation of the banks. |        |        |        |        |        |        |        |        | 0.514  |
| Physical representation of service through plastic card, credit and debit card is easy. |        |        |        |        |        |        |        | 0.797  |        |
| E-banking provides effective medium of promotion of various schemes. |        |        |        |        |        |        |        | 0.605866 |        |
| E-banking learns the specific requirement of the customer. |        |        |        |        |        |        |        |        | 0.68   |
| Banks use advanced Computer/IT to serve clients. |        |        |        |        |        |        |        | 0.675  |        |
| E-banking provides modern looking equipment. |        |        |        |        |        |        |        | 0.425  |        |
| Password facility provides confidentiality to transaction. |        |        |        |        |        |        |        |        | 0.408  |
| E-banking provides more physical facilities to the customers. |        |        |        |        |        |        |        | 0.593  |        |

Extraction Method: Principal Component Analysis
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 54 iterations.
Similarly factor-II has high absolute correlation with variable It helps in reducing the no. of queues in the bank branches(.772), E-banking provides 24 hours, 365 days a year service to customers(.672), Physical representation of service through plastic card, credit and debit card is easy(.797), Banks use advanced Computer/IT to serve clients(.675), E-banking provides modern looking equipment(.425), E-banking provides more physical facilities to the customers(.593).

Factor III shows correlation with variable It ensures to provide necessary information to the customer (.611), It provides individualized attention to the customers (.538), Website of the bank is designed according to the need of the customer(.65), It provides necessary information to the customers and It helps in better customer relationship, attracting and retaining them(0.614), E-banking learns the specific requirement of the customer(0.688).

Factor-IV represents high absolute correlation with variable Degree of reliability involved in Interaction with customer is more in e-banking (0.654), It ensures the ability to fulfill the requirement (0.772), It increase believability, honesty and trustworthiness of the customers in banks (0.766), It provides unlimited network to the banks to approach customers (.606) and E-banking increases the reputation of the banks (0.514).

Factor V has high correlation with E-banking ensures physical safety of the transaction(0.757), It also increases the financial security(0.505), Privacy can be easily maintained(0.633), Password facility provides confidentiality to transaction(0.408).

Factor VI is correlated with E-Banking services are accessible via Internet banking, Mobile banking, EFT, ECS, ATM(0.672), It reduces the waiting time to receive the service(0.688), It provides convenient location of service facility(location of ATM, POS terminals)(0.407), Online purchase of goods and services including online payment is easier(0.444).

Factor VII represents the correlation with variables Response of service through e-banking is very prompt and quick(0.549), It improves the quality of customer service(0.485), Availability of service is faster in e-banking as compare to manual banking(0.441), E-banking is very necessary for the development of new economy of India(0.553).

Factor VIII shows the high correlation with variables Transfer of fund is easier through E-banking(0.558), E-Banking provides more punctuality, transparency, accountability(0.523), Transfer of funds is faster as compared to manual banking system(0.409), It is trusted by young generation(0.423).

Factor IX has high correlation with variables It helps in keeping records correctly (0.549), It provides accuracy in billing (0.431) and It performs the service at designated time (0.511).

Each factor is named on basis of the correlation of variables with each other. Factor 1 is Communication second is tangibility, third is understanding, fourth is credibility, fifth is security, sixth is access, seventh is responsiveness, eighth is competence and last ninth factor is reliability.

### Table 7: Factor 1 Communication

| E-banking provides up to date information. | .778 |
| It also provides information for well educated customers. | .776 |
| It explains the cost of service being used. | .411 |
| It explains the trade off between service and cost. | .503 |
| E-Banking explains the service itself. | .711 |
| It assures the customer that problem will be handled. | .841 |
| E-banking provides effective medium of promotion of various schemes. | .605 |

| % Variance | 29.437 |
| Cumulative % | 29.437% |

It can be termed as communication. It explains maximum variance 29.437%.

### Table 8: Factor 2 Tangibility

| It helps in reducing the no. of queues in the bank branches. | .772 |
| E-banking provides 24 hours, 365 days a year service to customers. | .672 |
| Physical representation of service through plastic card, credit and debit card is easy. | .797 |
| Banks use advanced Computer/IT to serve clients. | .675 |
| E-banking provides modern looking equipment. | .425 |
E-banking provides more physical facilities to the customers. 0.593
% Variance 9.852
Cumulative % 39.289

Factor II explains 9.852% variance and cumulative 39.289%. It is named as tangibility.

Table 9: Factor 3 Understanding

|                                                                                     |        |
|-------------------------------------------------------------------------------------|--------|
| It ensures to provide necessary information to the customer                         | 0.611  |
| It provides individualized attention to the customers                               | 0.538  |
| Website of the bank is designed according to the need of the customer.              | 0.65   |
| It provides necessary information to the customers and It helps in better customer  | 0.614  |
| relationship, attracting and retaining them.                                       |        |
| E-banking learns the specific requirement of the customer.                          | 0.688  |
| % Variance                                                                          | 6.527  |
| Cumulative %                                                                        | 45.816%|

Factor III explains 6.527% variance and cumulative 45.816%. It can be named as understanding. It indicates E banking services understand needs of customers and provide necessary information to the customer.

Table 10: Factor 4 Credibility

|                                                                                     |        |
|-------------------------------------------------------------------------------------|--------|
| Degree of reliability involved in Interaction with customer is more in e-banking.   | 0.654  |
| It ensures the ability to fulfill the requirement.                                 | 0.772  |
| It increase believability, honesty and trustworthiness of the customers in banks.  | 0.766  |
| It provides unlimited network to the banks to approach customers.                  | 0.606  |
| E-banking increases the reputation of the banks.                                   | 0.514  |
| % Variance                                                                          | 5.932  |
| Cumulative %                                                                        | 51.748%|

Factor IV is named as credibility. It explains 5.932% variance and cumulative 51.748 %. It expresses Believability, honesty and trustworthiness of the customers with E banking services offered by banks.

Table 12: Factor 5 Security

|                                                                                     |        |
|-------------------------------------------------------------------------------------|--------|
| E-banking ensures physical safety of the transaction.                              | 0.757  |
| It also increases the financial security.                                          | 0.505  |
| Privacy can be easily maintained.                                                  | 0.633  |
| Password facility provides confidentiality to transaction.                         | 0.408  |
| % Variance                                                                          | 5.24   |
| Cumulative %                                                                        | 56.988%|

Factor V explains 5.24% variance and cumulative 56.988%. It is named as security. It represents the concern of customer towards the physical and financial safety of transaction.

Table 13: Access

|                                                                                     |        |
|-------------------------------------------------------------------------------------|--------|
| E-Banking services are accessible via Internet banking, Mobile banking, EFT, ECS,   | 0.672  |
| ATM.                                                                                |        |
| It reduces the waiting time to receive the service.                                | 0.668  |
| It provides convenient location of service facility(location of ATM, POS terminals) | 0.407  |
| Online purchase of goods and services including online payment is easier.          | 0.444  |
| % Variance                                                                          | 4.591  |
| Cumulative %.                                                                       | 61.579%|

Factor VI explains 4.591% variance and cumulative 61.579%. It is named as access. It expresses the customer concern about accessibility of E-banking services. Customer feels that E banking services should be provided at convenient location.
Table 14: Factor 7 Responsiveness

| Response of service through e-banking is very prompt and quick. | 0.549 |
| It improves the quality of customer service. | 0.485 |
| Availability of service is faster in e-banking as compare to manual banking. | 0.441 |
| E-banking is very necessary for the development of new economy of India. | 0.553 |
| %Variance | 3.72 |
| Cumulative % | 65.299% |

Factor VII explains 3.72% variance and cumulative 65.299%. It is named as responsiveness. Response of service through e-banking is very prompt and quick. It improves the quality of customer service.

Table 15: Factor 8 Competence

| Transfer of fund is easier through E-banking. | 0.558 |
| E-Banking provides more punctuality, transparency, accountability. | 0.523 |
| Transfer of funds is faster as compared to manual banking system | 0.409 |
| It is trusted by young generation. | .423 |
| %Variance | 3.658 |
| Cumulative % | 68.957% |

Factor VIII explains 3.658% variance and cumulative 68.957%. It is named as competence. It shows E-Banking provides more punctuality, transparency, accountability for transactions.

Table 16: Factor 9 Reliability

| It helps in keeping records correctly. | 0.549 |
| It provides accuracy in billing. | 0.431 |
| It performs the service at designated time. | 0.511 |
| %Variance | 3.243 |
| Cumulative % | 72.200% |

Factor IX explains 3.243% variance and cumulative 72.200%. It is named as reliability. This factor explains the accuracy in keeping the records correctly.

Table 17: Group Statistics

| Location    | N  | Mean   | Std. Deviation | Std. Error Mean |
|-------------|----|--------|----------------|-----------------|
| Tangibilitys| Urban | 328 | 4.2114 | .53061 | .02930 |
|             | Rural | 176 | 4.0947 | .58025 | .04374 |
| Understanding| Urban | 328 | 4.1951 | .49236 | .02719 |
|             | Rural | 176 | 4.1784 | .45681 | .03443 |
| Security    | Urban | 328 | 4.2759 | .51105 | .02822 |
|             | Rural | 176 | 4.2088 | .48559 | .03660 |
| Communication| Urban | 328 | 3.6372 | .56359 | .03112 |
|             | Rural | 176 | 3.6331 | .55140 | .04156 |
| Competence  | Urban | 325 | 3.8769 | .64836 | .03596 |
|             | Rural | 176 | 3.8835 | .68133 | .05136 |
| Reliability | Urban | 328 | 3.2907 | 1.26489 | .06984 |
|             | Rural | 176 | 3.4186 | 1.32221 | .09967 |
| Responsiveness | Urban | 328 | 3.9985 | .61734 | .03409 |
|               | Rural | 176 | 4.0540 | .54896 | .04138 |
| Access       | Urban | 328 | 3.2096 | .70256 | .03879 |
|             | Rural | 176 | 3.2713 | .76432 | .05761 |
| Credibility  | Urban | 328 | 3.7549 | .71859 | .03968 |
|             | Rural | 176 | 3.7193 | .77950 | .05876 |
Table XVII indicates that for the tangibility, understanding, and security the mean value are above 4.0 which represents that respondents are happy with these service quality factors. Since mean value for Communication is 3.6, competence 3.8, relaibilty is 3.2, responsiveness 3.9, access is 3.2 and credibility is 3.7 which indicate respondents are happy and satisfied with these service quality dimensions too.

As all dimensions (factors) of service quality are equally important. Hence, all service quality factors are supposed to have similar impact on customers. So to check the significance of the factors we use Independent Samples Test. It will explain whether there is significant difference amongst factors for using E banking services in rural and urban areas. So we frame the null hypothesis that there is no significant difference amongst different factors impacting for using E-banking services.

H0: There is no significant difference amongst different factors impacting for using E-banking services.

Ha: There is significant difference amongst different factors impacting for using E-banking services.

Table 18: Independent Samples Test

| Service Quality | Levene's Test for Equality of Variances | t-test for Equality of Means |
|-----------------|----------------------------------------|-------------------------------|
|                 | F          | Sig.   | T    | Df  | Sig. (2-tailed) | Mean Differe | Std. Error | 95% Confidence Interval of the Difference |
|                 |            |        |      |     |                | nce         |            | Lower        | Upper        |
| Tangibility     | .383       | .537   | 2.277| 502 | .023           | .11669      | .05124     | .01601       | .21736       |
|                 | 2.216      | 331.554| .027 | .11669 | .05264     | .01313      | .22024     |                           |              |
| Understanding   | 1.403      | .237   | .372 | 502 | .710           | .01671      | .04488     | -.07145      | .10488       |
|                 | .381       | 381.785| .703 | .01671 | .04387     | -.06955     | .10297     |                           |              |
| Security        | .230       | .632   | 1.430| 502 | .153           | .06711      | .04694     | -.02511      | .15932       |
|                 | 1.452      | 374.115| .147 | .06711 | .04622     | -.02377     | .15799     |                           |              |
| Communication   | .031       | .860   | .078 | 502 | .938           | .00408      | .05227     | -.09861      | .10677       |
|                 | .079       | 364.837| .937 | .00408 | .05192     | -.09803     | .10618     |                           |              |
| Competence      | 1.335      | .249   | -.107| 499 | .915           | -.00660     | .06178     | -.12798      | .11478       |
|                 | -.105      | 344.037| .916 | -.00660 | .06270     | -.12992     | .11672     |                           |              |
| Reliability     | 2.640      | .105   | -1.065| 502  | .287           | -.12791     | .12008     | -.36384      | .10802       |
|                 | -1.051     | 344.601| .294 | -.12791 | .12170     | -.36728     | .11146     |                           |              |
| Responsiveness  | 3.660      | .056   | -.999| 502 | .318           | -.05550     | .05554     | -.16462      | .05362       |

Vol. V, Issue –2(2), April 2018 [125]
Levene’s Test for Equality of Variances

|          | F        | Sig. | T       | Df      | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |
|----------|----------|------|---------|---------|-----------------|-----------------|------------------------|------------------------------------------|
|          | assumed  |       |         |         |                 |                 |                        | folw                                |
| Equal variances not assumed |          |       |         |         |                 |                 |                        | folw                                |
| Access   |          |       |         |         |                 |                 |                        | folw                                |
| Equal variances assumed | 2.420    | .120 | -.911   | 502     | .363            | -.06170         | .06771                 | -.19474 to .07133                   |
| Equal variances not assumed | -.888    | 333.016| .375    | -.06170 | .06946         | -.19833         | .07492                 |                                      |
| Credibility |          |       |         |         |                 |                 |                        | folw                                |
| Equal variances assumed | 2.390    | .122 | .514    | 502     | .607            | 0.0355          | .06918                | -.10035 to .1714                   |
| Equal variances not assumed | 0.501    | 333.83| .616    | .0355   | .0708           | -.1039          | .1750                 |                                      |

From the above table it can be concluded that at confidence level 5%, the sig value for tangibility factor is 0.023 which less than 0.05. Hence null hypothesis is rejected and alternate hypothesis is accepted. It is concluded that there exist a significant difference amongst different factors impacting for using e-banking services. All factors do not have same impact. Factor impact varies. No two factors have similar impact on customer choice of E banking services. For a customer reliability can be priority, for other tangibility or so.

FINDINGS OF STUDY:

- According to Kaiser Principle nine factors out of forty two have been extracted which represents the total of 72.2% variance.
- Factor I can be termed as communication. It explains maximum variance 29.437%
- Factor II explains 9.852% variance and cumulative 39.289%. It is named as tangibility
- Factor III explains 6.527% variance and cumulative 45.816%. It can be named as understanding
- Factor IV is named as credibility. It explains 5.932% variance and cumulative 51.748
- Factor V explains 5.24% variance and cumulative 56.988%. It is named as security.
- Factor VI explains 4.591% variance and cumulative 61.579%. It is named as Access.
- Factor VII explains 3.72% variance and cumulative 65.299%. It is named as responsiveness.
- Factor VIII explains 3.658% variance and cumulative 68.957%. It is named as competence.
- Factor IX explains 3.243% variance and cumulative 72.200%. It is named as reliability.
- The factors tangibility, understanding, and security have the mean value above 4.0 (both urban & rural) which represents that respondents are happy with these e banking factors to use with.
- Mean value for Communication is 3.6, competence 3.8, reliability is 3.2, responsiveness 3.9, access is 3.2 and credibility is 3.7 which indicate respondents feel all factors are equally important for using e banking services. Respondents are happy and satisfied with these service quality dimensions.
- There exists a significant difference amongst different factors impacting for using e-banking services. Hence all factors are not equally important. All factors do not have same impact. Factor Impact varies.

CONCLUSION:

In order to examine the impact of E banking on service quality we have finally come up with nine factors communication, tangibility, understanding, credibility, security, access, responsiveness, competence reliability which impact service quality to great extent. It is clear from the research that there is a significant difference amongst different factors impacting for using e-banking. The E banking service providers should pay attention to these factors in order to make their banking services quality full for their customers.
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