

## A Study on Internet Banking Portal Service Quality of Indian Public and Private Sector Banks in Gujarat State

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### ABSTRACT

*This study measures the impacts of various internet banking portal service quality dimensions on overall internet banking portal service quality. The research used the dimensions of online service quality, internet banking service quality and web portal service quality to develop a framework that can be used to measure internet banking portal service quality in India. Data for research was collected from 400 bank customers of some selected Indian public and private banks who use internet banking portal. Ten dimensions of internet banking portal service quality are identified, viz. information quality, website design, ease of use, reliability, security and privacy, interactive interrogation, personalization/customization, basic service quality, other financial products' service quality and added values. The results of the research shows that added values, ease of use, website design, interactive interrogation, personalization/customization and other financial products' service quality have significant impact on overall internet banking portal service quality. This indicates that these are significant dimensions for measuring or predicting internet banking portal service quality. Our findings from the study have the potential to help Indian banks in understanding how internet banking portal users assess internet banking portal service quality.*

**Keywords:** Internet Banking Portal; Content Analysis; Service Quality; Scale Validation; CFA.

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### 1.0 Introduction

With the popularity of internet, innovation in technology and changing needs of customers, banking services have undergone tremendous transformation. In banking services new technological innovation is internet banking portal. Internet banking portal means that all stages of the financial transactions can be processed electronically.

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This is achieved by replacing personal interaction and physical facilities with technological solutions. As a consequence, customers are able to carry out different financial transactions at one site including paying bills, booking railway and air tickets, charging mobile phone and TV, donating money, paying tax, filing tax return, viewing bank statements, purchasing stocks and other financial products (e.g. insurance) etc. Thus, internet banking portals transfer the “all in one” principle from the old economy-to the internet (Bauer and Hammerschmidt, 2002; Jun and Cai, 2001).

Service quality is an important determinant in differentiating service offering and building competitive advantage, since the costs of comparing alternatives are relatively low in online environments (Santos, 2003). Because of this, service quality is a crucial issue for internet banking portals.

According to a report by global management consultancy McKinsey & Company, as many as 7% of account holders in India are using the Internet for banking transactions in 2011 and it is 7 fold jump since 2007 (McKinsey & Company Report, 2010). Today most of all Indian public and private sector Banks have internet banking portal and competition between Indian banks are very high. Therefore, Internet banking Portals are required to put more emphasize on service quality due to growing competition in banking industry in India.

The most important step in providing a sophisticated level of service through internet banking portal is to identify and measure the dimensions of portal quality. Based on the understanding of the key service quality dimensions and the perception of customers toward internet banking portal service quality, managers may discover methods to improve customer satisfaction, build customer trust, and create loyal customers. Despite of these, there are very few efforts devoted to the area of service quality of internet banking portal. In view of this, the following research questions and objectives of the study were formulated.

## **2.0 Research Questions**

- (i) What are the key service quality dimensions of internet banking portal service quality?
- (ii) What internet banking portal service quality dimensions create more impact on overall internet banking portal service quality?

## **3.0 Objectives**

The importance of service quality and the challenges facing Internet-based services necessitate insights on the part of managers about what attributes customers use

in their evaluation of internet banking portal service quality. However, a rigorous measurement instrument of Internet banking portal service quality has not been available. In order to improve that condition, the following research objectives were formulated on the basis of research questions:

- 1) To identify the salient internet banking portal service quality dimensions.
- 2) To confirm the identified major service quality dimensions of internet banking portal.
- 3) To determine the relative importance of each identified internet banking portal service quality dimension in measuring or predicting overall internet banking portal service quality.

#### 4.0 Content Analysis

Several content assessment methods have been described in the research methods literature (Nunnally, 1978). One common method which requires experts to categorize or sort items based on their similarity to construct definitions is content analysis. This can be conducted using experts in a content domain. Here, experts are presented with construct definitions without titles and are asked to match items with a corresponding definition. Content analysis is very useful in developing research scale. The following 49 dimensions related to internet banking portal service quality were identified from the literature review in the area of online, internet banking & web portal service quality. Summary of online service quality dimensions is given in Table 1.

**Table 1: Summary of Online Service Quality Dimensions**

Sr. NO.	Name of Online Service Quality Dimensions	Sr. NO.	Name of Online Service Quality Dimension
1	Accessibility	26	Interaction
2	Aesthetics	27	Interactive Interrogation
3	Assurance	28	Personalization/Customization
4	Attention	29	Preferential Treatment
5	Banking Service Product Quality	30	Privacy and Security
6	Basic Service Quality	31	Quality of Information
7	Collaboration	32	Quality of Layout
8	Content	33	Relevance
9	Convenience	34	Reliability
10	Core Services	35	Responsiveness

11	Credibility	36	Risk Reduction Benefits
12	Cross Buying Service Quality	37	Sense of Beauty
13	Customer Care	38	Site Design And Content
14	Customization	39	Specialty Information
15	Decision Making	40	Speed
16	Diverse Features	41	Supporting Services
17	Ease of Navigation	42	Timeliness
18	Ease of Use	43	Trust
19	Efficiency	44	Understanding The Customer
20	Enjoyment	45	User Experience
21	Feedback	46	User Friendliness
22	Format	47	User Involvement
23	Graphics Quality	48	Website Design
24	Individualization	49	Website Interface
25	Information Quality		

*Source: Halvadia, N. & Sharma, M. (2017). Internet banking portal service quality. Germany, Saarbrücken: Scholars' Press.*

Content analysis is performed to comprise the selected online service quality dimensions into internet banking portal service quality dimensions. Experts in a content domain categorized dimensions based on their similarity to construct definitions. Here, experts are presented with construct definitions without titles and are asked to match items with a corresponding definition. 49 online service quality dimensions were comprised in 10 internet banking portal service quality dimensions using content analysis. For content analysis, suggestions of experts of services marketing area and operational definition of all dimensions were used. Table 2 shows list of online service quality dimensions with same operational definition.

**Table 2: List of Online Service Quality Dimensions with Same Operational Definition**

<b>Internet Banking Portal Service Quality Dimensions</b>	<b>Author Detail</b>	<b>Other Online Service Quality Dimensions With Same Operational Definition</b>
Information Quality	Ho and Lin (2010), Loonam and O'Loughlin (2008), Kuo et al. (2005), Yang et al. (2005), Rangnathan and Ganapathy (2002).	Content, Information Quality, Quality of Information, Relevance, Timeliness and Decision Making.

Website Design	Ho and Lin (2010), Kim et al. (2009), Tan et al. (2003), Ranganathan and Ganapathy (2002).	Aesthetics, Quality of Layout, Sense of Beauty, Site Design and Content, Website Design, Website Interface, Format, Enjoyment, User Experience, Graphics Quality and User involvement.
Ease of Use	Rod et al. (2009), Loonam and O'Loughlin (2008).	Convenience, Ease of Navigation, Ease of Use and User Friendliness.
Reliability	Rod et al. (2009), Sohail and Shaikh (2008), Loonam and O'Loughlin (2008).	Speed, Reliability, Efficiency and Accessibility.
Security And Privacy	Rod et al. (2009), Sohail and Shaikh (2008), Waite and Harrison (2002), Yoo, B. and Donthu, N. (2001).	Trust, Risk Reduction Benefits, Privacy and Security, Assurance and Credibility.
Interactive Interrogation	Chuang and Hu (2010), Ho and Lin (2010), Kim et al. (2009), Yang et al. (2005), Waite and Harrison (2002).	Interaction, Interactive Interrogation, Feedback, Responsiveness and Customer Care.
Personalization/ Customization	Bauer et al. (2005), Ribbink et al. (2004), Wolfinbarger and Gilly (2003), Tan et al. (2003), Srinivasan et al. (2002).	Specialty Information, Attention, Personalization/Customization, Preferential Treatment, Customization, Individualization and Understanding the Customer.
Basic Service Quality	Chuang and Hu (2010), Bauer et al. (2005), Jun and Cai (2001).	Banking Service Product Quality, Basic Service Quality, Core Services
Other Financial Products' Service Quality	Srinivasan et al. (2002), Bauer et al. (2005).	Cross Buying Service Quality, collaboration
Added Values	Yang et al. (2005), Van Riel et al. (2001), Bauer et al. (2005).	Diverse Features, Supporting Services

**Source:** Halvadia, N. & Sharma, M. (2017). *Internet banking portal service quality. Germany, Saarbrücken: Scholars' Press.*

After grouping 49 dimensions into one group, proper names were given to the group of dimensions after taking help of experts. Definition of all internet banking portal service quality dimensions is given in Table 3.

**Table 3: Internet Banking Portal Service Quality Dimensions**

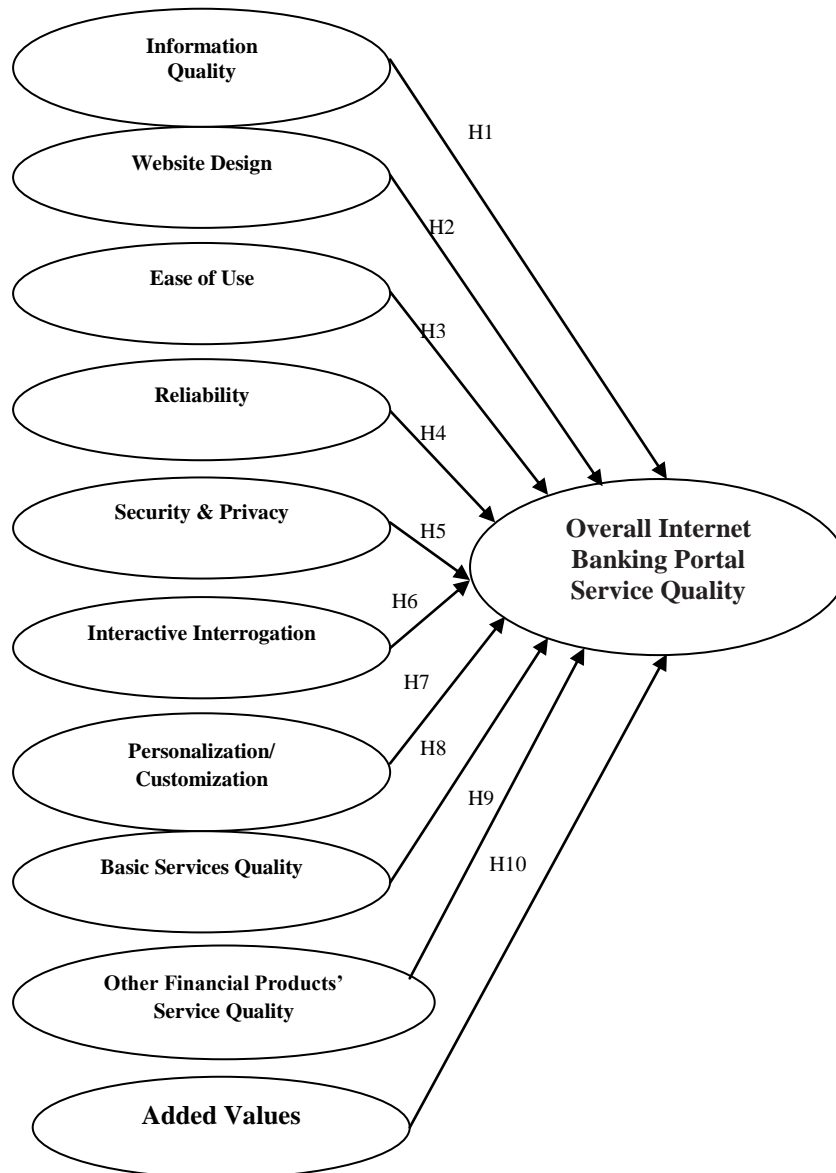
Dimension	Description
Information Quality	Information quality dimension is related to ability of internet banking portal to provide sufficient, real time & accurate information and valid hyperlink for accessing information to users.

Website Design	This dimension includes visually appealing and well-designed web pages, fonts in proper size and color, well labeled hyperlink and easy browsing on internet banking portal.
Ease of Use	This dimension makes search out, navigation and connectivity to other website very easy on internet banking portal for the users.
Reliability	Reliability of internet banking portal means the ability of it to provide services as per commitment. This dimension includes provide correct services at first time to users and accessibility of internet banking portal from anywhere and 24 * 7 hours.
Security And Privacy	Privacy involves the protection of personal information of internet banking portal users and security involves protecting users from the risk of fraud and financial loss from the use of credit cards or other financial information.
Interactive Interrogation	This dimension provides opportunity and ability to share opinions & information on internet banking portal and ask problem or query about products and services on it. This dimension also includes facilities of electronic complaint form on internet banking portal.
Personalization/ Customization	This dimension is related to ability of internet banking portal to provide customized or personalized services to users. It includes recommendation of financial and nonfinancial products to users as per their personal needs and providing personalized investment tips, news and response to customer queries.
Basic Service Quality	This dimension of internet banking portal service quality includes service quality of classic bank products such as payment processing (cash management, transfers, viewing bank statements), online request for credit card, debit card, check book or loan, online stock trading and online fixed deposit facility.
Other Financial Products' Service Quality	This internet banking portal service quality dimension includes availability and performance of financial products like, insurance, mutual fund, gold ETF etc... on it.
Added Values	This dimension is related to entertainment and non-financial products' services of internet banking portal. Entertainment includes connectivity with social networking websites and availability of news room and chat room on internet banking portal. Non-financial products' services of internet banking portal includes services like, railway or airline ticket reservation, hotel reservation, online shopping, donation facilities, paying bills online (e.g. Telephone, credit card, electricity etc...), recharge of mobile phone, TV and data card, paying income tax etc...

Source: Halvadia, N. & Sharma, M. (2017). *Internet banking portal service quality*. Germany, Saarbrücken: Scholars' Press.

On the basis of literature review the following research model was developed for measuring service quality of internet banking portal (Figure 1).

**Figure 1: The Research Model**



**Source:** Halvadia, N. & Sharma, M. (2017). Internet banking portal service quality. Germany, Saarbrücken: Scholars' Press.

## **5.0 Research Methodology**

### **5.1 Scale development and instrument**

This research followed the scale development framework that was established by Menor and Roth (2007).

This study developed a measurement instrument for internet banking portal service quality and that was mainly based on the perceived service quality scales proposed by various researchers in the area of online, internet banking and web portal service quality. Items for measuring customer satisfaction towards the bank were taken and adapted from the studies of Yang et al. (2004), Rod et al. (2009) and Chung & Shin (2010). Items for measuring overall internet banking portal service quality were taken and adapted from the research work of Yang et al. (2004) and Rod et al. (2009).

After completion of literature review, the questionnaire with 73 items and 10 dimensions representing internet banking portal service quality, 2 items representing overall internet banking portal service quality and 4 items representing customers overall satisfaction toward the bank was prepared.

Next, a pretest of the questionnaire was conducted to assess face validity or content validity of measurement scales. Face validity can be evaluated by a group of judges, sometime experts, who read or look at a measuring technique and decide whether in their opinion it measures what its name suggests. Here, continuous-scale agreement exercise used to know correspondence between each item a presumed construct using Likert scale. In the continuous-scale agreement exercise, judges evaluated the correspondence between each item and a presumed construct using Likert scale (Hardesty & Bearden, 2004). After being reviewed by five academics, the questionnaire was revised, and sent to four bank managers who are specialized in internet banking portal. They all provided valuable feedback. Some items were further reworded, added or deleted.

Next, the questionnaire with 63 items and 10 dimensions representing internet banking portal service quality, 2 items representing overall internet banking portal service quality and 4 items representing overall satisfaction towards the bank was filled by 50 internet banking portal users who used internet banking portal in last four weeks to ensure reliability of the scale. Here participants gave answer and critique and made review of the given questionnaire. Several modifications were made based on the feedback of pilot test. The final questionnaire had 63 items and 10 dimensions representing internet banking portal service quality and 2 items representing overall internet banking portal service quality.



## 5.2 Sampling design

This empirical study was conducted in Gujarat State, India in April – August, 2014. The population of the study was bank customers who are using internet banking portal of selected Indian public and private sector banks in four large cities (Ahmedabad, Baroda, Surat and Rajkot) of Gujarat state, India.

This study was included only top five public and private sector banks for measuring and comparing service quality of internet banking portal because of several reason. First, these companies contribute significantly in total revenue and market share of Indian banking sector. And second, these banks have well established internet banking portal. The list of top 5 Indian public and private sector banks is given in Table 4.

**Table 4: Top Five Indian Public and Private Sector Banks**

<b>Top Five Indian Public Sector Banks</b>	<b>Net Profit in Cr. Rupees (Year 2011-12)</b>	<b>Top Five Indian Private Sector Banks</b>	<b>Net Profit in Cr. Rupees (Year 2011-12)</b>
State Bank of India	11707.29	ICICI Bank Ltd.	6466.50
Bank of Baroda	5006.96	HDFC Bank Ltd.	5167.07
Punjab National Bank	4879.95	Axis Bank Ltd.	4229.19
Canara Bank	3281.71	Kotak Mahindra Bank Ltd.	1085.05
Bank of India	2677.50	Yes Bank Ltd.	976.99

*Source: Capitaline-Corporate Database, Retrieved on June 30, 2012.*

In this study total target population is unknown and sampling frame is not available so non-probability sampling technique was used. Judgmental sampling, a form of convenience sampling was used to identify respondents for the study because here a judgment was taken by researcher that maximum number of internet banking portal users of selected banks were easily got at branches of selected banks. To ensure that the Instrument reached the target, a filter question was asked at the beginning of the questionnaire as to whether respondent was using an internet banking portal of the selected Indian public and private sector banks. Respondents were also asked to focus on the internet banking portal they use most often. Only those answering affirmatively proceeded to respond to the remaining questions. Respondents who answered in the negative were not included in the study.

Responses were sought from 400 respondents. The sample was collected from four highest populated cities of Gujarat state, i.e. Ahmedabad, Vadodara, Surat and

Rajkot in equal size for increasing representativeness of sample. data was collected from 200 internet banking portal users of selected Indian public sector banks and 200 internet banking portal users of selected Indian private sector banks. Data was collected from 10 respondents for each bank in every city to increase sample representativeness.

## 6.0 Data Analysis

Confirmatory factor analysis was used for validating the model. SPSS and AMOS were used for data analysis in this research.

### 6.1 Items deleted

In the internet banking portal service quality model, some indicators were loaded on the constructs that they were not supposed to represent and some residual covariance of the indicators representing different constructs were released in order to improve the model fit. There were 63 items in the questionnaire and retained items in the scale were 40. Details of original items are given in the appendix.

### 6.2 Assessment of reliability

Reliability was gauged via the standardized Cronbach's alpha coefficient (Cronbach, 1951). Hair et al. (2007) recommended that 0.6 Cronbach's alpha value is deemed the lower limit of acceptability. The final Cronbach's alpha coefficients of all items range from 0.601 to 0.752 (see table 5), suggesting good internal consistency among items within each construct and the reliability of the constructs.

**Table 5: Reliability of the Scale**

Sr. No.	Dimension Name	Cronbach's Alpha Scores
1.	Information Quality	0.625
2.	Website Design	0.706
3.	Ease of Use	0.642
4.	Reliability	0.705
5.	Security and Privacy	0.752
6.	Interactive Interrogation	0.601
7.	Personalization/Customization	0.726
8.	Basic Services Quality	0.622
9.	Other Financial Products' Service Quality	0.640
10.	Added Values	0.696
11.	Reliability of Overall Scale	0.880

**Source:** Halvadia, N. & Sharma, M. (2017). *Internet banking portal service quality*. Germany, Saarbrücken: Scholars' Press.

### **6.3 Assessment of validity**

Validity is an extent to which research is accurate. Validity of a scaling procedure implies that the data must be unbiased and related to the construct being measured. Content/face and construct validity were measured for validating the model.

#### **6.3.1 Content validity**

The degree to which the measure spans the domain of the construct's theoretical definition is defined as the construct's content validity (Rungtusanatham, 1998). The internet banking portal service quality dimensions were identified from literature and content validity of the instrument used in the present study is ensured by professionals of banking sector and academicians of marketing area.

#### **6.3.2 Construct validity**

Construct validity is the extent to which a set of measured items actually reflects the theoretical latent construct thus it deals with the accuracy of measurement (Hair et al., 2007). Construct validity is further divided into convergent, discriminant and nomological validity (Churchill, 1979). Construct validity can be established by empirically assessing uni-dimensionality of constructs (O'Leary-Kelly & Vokurka, 1998).

Confirmatory Factor Analysis (CFA) provides better control for assessing uni-dimensionality. In this research study, convergent and discriminant validity were assessed using confirmatory factor analysis.

##### **6.3.2.1 Convergent validity**

The items that are indicators of a specific construct should coverage or share a high proportion of variance in common, known as convergent validity (Hair et al., 2007). In this study convergent validity was measured using analysis of factor loading, average variance extracted and construct reliability.

In the case of high convergent validity, high loading on a factor would indicate that they converge on some common point and factor loading more than 0.5 indicates good convergent validity (Hair et al., 2007). The factor loading of all the items of the internet banking portal service quality scale are given in the table 6. The values of factor loading for all the items are near to or greater than 0.5 and it indicates good convergent validity of the scale. Hair et al. (2007) noted that convergent validity can also be determined by calculating the average variance extracted (AVE) value of the construct. AVE should be near or above 0.5 to indicate convergent validity. Table 6 shows that all AVE values of all internet banking portal service quality factors are near or above 0.5

indicating strong convergent validity. High construct reliability indicates that internal consistency exists, meaning that the measures all consistently represent the same latent construct. The rule of thumb for construct reliability estimate is that 0.7 or higher suggests good construct reliability. Table 6 shows that for all constructs related to internet banking portal service quality value of construct reliability is greater than 0.7 and it indicates good construct reliability.

**Table 6: Factor Loading Values for All Items of Internet Banking Portal Service Quality Scale**

<b>Internet Banking Portal Service Quality Dimensions</b>	<b>Statements</b>	<b>Factor Loading</b>	<b>AVE Values</b>	<b>CR Values</b>
Information Quality	IQ1	0.74	0.54	0.78
	IQ3	0.72		
	IQ6	0.74		
Website Design	WB2	0.77	0.51	0.84
	WB3	0.72		
	WB5	0.72		
	WB6	0.69		
	WB7	0.68		
Ease of Use	EU2	0.79	0.56	0.79
	EU3	0.75		
	EU4	0.70		
Reliability	RE3	0.80	0.60	0.82
	RE4	0.77		
	RE5	0.75		
Security and Privacy	SC1	0.75	0.50	0.86
	SC2	0.73		
	SC3	0.76		
	SC4	0.64		
	SC5	0.69		
	SC6	0.68		
Interactive Interrogation	II1	0.74	0.46	0.71
	II3	0.66		
	II6	0.61		
Personalization/Customization	P1	0.77	0.46	0.81
	P2	0.73		
	P3	0.71		
	P4	0.57		
	P5	0.60		
Basic Services Quality	BSQ2	0.76	0.49	0.79
	BSQ3	0.65		
	BSQ4	0.62		

	BSQ5	0.75		
Other Financial Products' Service Quality	OFQ1	0.82	0.54	0.77
	OFQ2	0.72		
	OFQ3	0.65		
Added Values	AV1	0.77	0.49	0.82
	AV2	0.69		
	AV3	0.70		
	AV4	0.68		
	AV5	0.62		
Overall Internet Banking Portal Service Quality	OSQ1	0.60	0.52	0.71
	OSQ2	0.829		

**Source:** Halvadia, N. & Sharma, M. (2017). *Internet banking portal service quality*. Germany, Saarbrücken: Scholars' Press.

### 6.3.2.2 Discriminant validity

Discriminant validity is the extent to which a construct is truly distinct from other constructs thus, high discriminant validity provides evidence that a construct is unique and captures some phenomena other measures do not (Hair et al., 2007). Accordingly to Fornell and Larcker (1981) discriminant validity is established if the AVE is larger than the squared of correlation coefficient of each constructs. In Table 7 it is shown that the AVE value is larger than the squared of correlation coefficient of each constructs so it can be concluded that all the constructs of internet banking portal service quality scale supported discriminant validity.

**Table 7: Discriminant Validity Analysis**

Internet Banking Portal Service Quality Dimensions	I	II	III	IV	V	VI	VII	VIII	IX	X
Added Values	<b>0.49</b>									
Interactive Interrogation	0.25	<b>0.46</b>								
Website Design	0.21	0.27	<b>0.51</b>							
Ease of Use	0.18	0.08	0.34	<b>0.56</b>						
Other Financial Products' Service Quality	0.12	0.11	0.21	0.13	<b>0.54</b>					
Basic Services Quality	0.25	0.24	0.41	0.14	0.12	<b>0.49</b>				
Personalization/ Customization	0.05	0.13	0.10	0.04	0.05	0.08	<b>0.46</b>			

Security and Privacy	0.27	0.26	0.29	0.24	0.09	0.27	0.03	<b>0.5</b>		
Reliability	0.32	0.21	0.17	0.13	0.07	0.26	0.10	0.10	<b>0.6</b>	
Information Quality	0.33	0.35	0.39	0.21	0.23	0.24	0.06	0.24	0.24	<b>0.54</b>

\*Bold number represents AVE values of the constructs.

**Source:** Halvadia, N. & Sharma, M. (2017). *Internet banking portal service quality. Germany, Saarbrücken: Scholars' Press.*

#### 6.4 Model fit

To check model fit of internet banking portal service quality model Chi Square/df statistic, Tucker Lewis Index (TLI) value, Comparative Fit Index value (CFI), root mean square error of approximation (RMSEA) value and expected cross- validation index (ECVI) were used (Table 8).

**Table 8: Model Fit Indices**

Type of Model Fit Index	Model Fit Index	Values
Absolute Fit Index	Chi-square/df	1.584
Relative Measure Indices	Comparative Fit Index (CFI)	0.892
	Tucker Lewis Index (TLI)	0.902
Residual Matrix Based Indices	Root Mean Square Error of Approximation (RMSEA)	0.038
	Expected Cross- Validation Index (ECVI)	3.586

**Source:** Halvadia, N. & Sharma, M. (2017). *Internet banking portal service quality. Germany, Saarbrücken: Scholars' Press.*

In this research, Chi-square/df was used as an absolute fit index. As per Hu and Bentler (1999), value of Chi-square/df less than 2 indicate good model fit. For the model of internet banking portal service quality Chi-square/df value was 1.584 and it indicates good model fit.

#### 6.5 Important internet banking portal service quality dimensions

AMOS provides estimated coefficients and calculated t-values for each path from the ten dimensions of internet banking portal service quality to overall internet banking portal service quality. A hypothesis is confirmed if the estimated path coefficient is significant. Table 9 summarized the hypotheses testing results, reflected by the standardized path coefficients, t-values, and p-values.

**Table 9: Order of Internet Banking Portal Service Quality Dimension As Per Standerdized Regression Weight**

Sr. No.	Internet Banking Portal Service Quality Dimensions	Standerdized Regression Weight	T value	P value
1.	H1:Added Values →Overall Internet Banking Portal Service Quality	0.310	3.50	0.000
2.	H2:Website Design →Overall Internet Banking Portal Service Quality	0.294	2.56	0.011
3.	H3:Ease of Use →Overall Internet Banking Portal Service Quality	0.276	3.35	0.000
4.	H4:Interactive Interrogation →Overall Internet Banking Portal Service Quality	0.261	2.5	0.013
5.	H5:Other Financial Products' Service Quality →Overall Internet Banking Portal Service Quality	0.152	2.15	0.031
6.	H6:Personalization/Customization →Overall Internet Banking Portal Service Quality	0.148	2.7	0.007
7.	H7:Reliability →Overall Internet Banking Portal Service Quality	0.030	0.41	0.68
8.	H8:Information Quality→Overall Internet Banking Portal Service Quality	0.029	0.26	0.80
9.	H9:Basic Services Quality →Overall Internet Banking Portal Service Quality	0.025	0.23	0.815
10.	H10:Security and Privacy →Overall Internet Banking Portal Service Quality	0.009	0.11	0.91

**Source:** Halvadia, N. & Sharma, M. (2017). *Internet banking portal service quality*. Germany, Saarbrücken: Scholars' Press.

P values for added values ease of use, and personalization/customization dimensions of internet banking portal service quality were less than 0.01 and it was concluded that added values, ease of use, and personalization/customization make strong impact on overall internet banking portal service quality. P values for website design, interactive interrogation and other financial products' service quality dimension of internet banking portal service quality were less than 0.05 and it was concluded that website design, interactive interrogation and other financial products' service quality make moderate impact on overall internet banking portal service quality.

Standardized regression weights of all internet banking portal service quality dimensions were also given in the table 10. Internet banking portal service quality dimension has more standardized regression weight means that dimension create more impact on overall internet banking portal service quality and it is also important factor for prediction of overall internet banking portal service quality. So using standardized regression coefficient values in table 10, it was also concluded that added values, website design, ease of use, interactive interrogation, other financial products' service quality and personalization/customization create more impact on internet banking portal service quality.

Using Table 9, it was concluded that added values, ease of use, personalization/customization, website design, interactive interrogation and other financial products' service quality are important dimensions for measuring or predicting internet banking portal service quality.

## **7.0 Conclusions of the Study**

This empirical research provides reliable and valid scale to measure internet banking portal service quality. The facets of internet banking portal service quality were measured and validated using confirmatory factor analysis. Ten dimensions of internet banking portal service quality were identified and these dimensions were: (1) Information quality, (2) Website design, (3) Ease of use, (4) Reliability, (5) Security and privacy, (6) Interactive interrogation, (7) Personalization/Customization, (8) Basic service quality, (9) Other financial products' service quality and (10) Added values. Path analysis was used to identify internet banking portal service quality dimensions which make impact on overall internet banking portal service quality and it was concluded that added values, ease of use, personalization/customization, website design, interactive interrogation and other financial products' service quality make significant impact on overall internet banking portal service quality so they are important dimensions for measuring or predicting internet banking portal service quality.

## **8.0 Implications of the Research**

This study finds out added values, ease of use, personalization/customization, website design, interactive interrogation and other financial products' service quality as important dimensions for measuring internet banking portal service quality and it will helpful to Indian public and private sector banks in assessing service quality of their internet banking portals. The knowledge of these important internet banking portal



service quality dimensions is also useful for making advertisement on internet banking portal and to attract more bank customers to use internet banking portal of Indian public and private sector banks.

The interpretation of the research model developed in the study has potential to help Indian public and private sector banks in understanding how internet banking portal users assesses the internet banking portal service quality. A pool of indicators for the antecedent factors of internet banking portal service quality stood out, acting as a guide for Indian public and private sector banks to improve their internet banking portal service quality.

### **9.0 Scope for Future Research**

The subject of the survey is individual internet banking portal user. The differences between individual customers and business customers may not be enormous. However, given the huge amount of business-to-business (B2B) online transactions, it would be interesting and beneficial to investigate what business customers perceive about internet banking portal service quality. The comparison between business customers and individual customers' perception for internet banking portal service quality dimensions may provide new insights. Future research may apply the scale developed in this study to area of digital bank, multi-social payment solution and mobile banking on smart phones.

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#### Appendix: Scale for Measuring Service Quality of Internet Banking Portal

Internet Banking Portal Service Quality Dimensions	Statements
Information Quality	IQ1: This internet banking portal provides sufficient and real time financial information (e.g. interest rate, foreign exchange rate, stock market, bank charges etc...).
	IQ3: All information on this internet banking portal is accurate.
	IQ6: This internet banking portal has all valid hyperlinks.
Website Design	WB2: This internet banking portal is visually appealing.
	WB3: Fonts on this internet banking portal are in proper size and color.

	WB5: All the hyperlinks are well labeled on this internet banking portal.
	WB6: Design of this internet banking portal enables me to complete my online transaction quickly.
	WB7: It is fun to browse and see what can be found on this internet banking portal.
Ease of Use	EU2: This internet banking portal allows searching out something very easily in it.
	EU3: It is very easy to navigate from one page to other page in this internet banking portal.
	EU4: This internet banking portal provides easy connectivity with website of other service providers.
Reliability	RE3: This internet banking portal performs the service correctly at the first time.
	RE4: This internet banking portal offers its services on 7 days and 24 hours.
	RE5: This internet banking portal allows accessing it from anywhere.
Security and Privacy	SC1: This internet banking portal gives feeling of security in providing sensitive information (e.g. credit card number) for online transaction on it.
	SC2: This internet banking portal provides the information of privacy policy and security mechanism.
	SC3: The privacy policy and security mechanism of this internet banking portal are good.
	SC4: This internet banking portal informs customer when any online transaction is finished.
	SC5: This internet banking portal has easy options for cancelling any online transactions.
	SC6: This internet banking portal protects online transaction data and bank information.
Interactive Interrogation	II1: When problem occurs, this internet banking portal gives guidance.
	II3: This internet banking portal allows exchanging opinion regarding services provided by it with other customers using discussion forum available on it.
	II6: This internet banking portal provides electronic complain form.
Personalization/Customization	P1: This internet banking portal makes purchase recommendations of financial and nonfinancial products that match individual needs.

	P2: This internet banking portal sends personalized investment tips according to customer's financial portfolio.
	P3: This internet banking portal provides regular news regarding customer's investment.
	P4: This internet banking portal gives personalized response to queries.
	P5: This internet banking portal gives feeling of unique customer.
Basic Services Quality	BSQ2: This internet banking portal allows online money transfer.
	BSQ3: This internet banking portal provides stock trading services.
	BSQ4: This internet banking portal allows putting online request for debit card, passing book, cheque book etc....
	BSQ5: This internet banking portal allows investing money in bank fixed deposit.
Other Financial Products' Service Quality	OFQ1: This internet banking portal allows investing money in financial products like, insurance, mutual funds, gold ETF etc...
	OFQ2: Reputed companies' financial products (mutual fund shames, insurance plans, Gold ETF etc...) are available on this internet banking portal.
	OFQ3: Financial products (e.g. Mutual funds, insurance plans, Gold ETF etc..) available on this internet banking portal gives good return on investment.
Added Values	AV1: This internet banking portal allows paying bills online (e.g. mobile phone, credit card, electricity etc...).
	AV2: This internet banking portal allows recharging mobile phone, TV and data card online.
	AV3: This internet banking portal allows booking hotels and travelling tickets online.
	AV4: This internet banking portal allows doing online shopping.
	AV5: This internet banking portal allows paying income tax online.