

# A Conceptual Framework on Review of E-Service Quality in Banking Industry

Vivek Agrawal, Vikas Tripathi, Nitin Seth

**Abstract**—E-service quality plays a significant role to achieve success or failure in any organization, offering services online. It will increase the competition among the organizations, to attract the customers on the basis of the quality of service provided by the organization. Better e-service quality will enhance the relationship with customers and their satisfaction. So the measurement of e-service quality is very important but it is a complex process due to the complex nature of services. Literature predicts that there is a lack of universal definition of e-service quality. The e-service quality measures in banking have great importance in achieving high customer base. This paper proposes a conceptual model for measuring e-service quality in Indian Banking Industry. Nine dimensions reliability, ease of use, personalization, security and trust, website aesthetic, responsiveness, contact and fulfillment had been identified. The results of this paper may help to develop a proper scale to measure the e-service quality in Indian Banking Industry, which may assist to maintain and improve the performance and effectiveness of e-service quality to retain customers.

**Keywords**—Banking, Service Quality, e-service quality, Dimensions.

## I. INTRODUCTION

GLOBALIZATION, privatization and liberalization have motivated for increased use of information technology, owing to its potential benefits like responsiveness, cost saving and better serviceability. Banks have realized that they can attract and gain customers by providing high quality of e-services [14]. E-service quality is becoming very vital in success or failure of any business enterprise.

Now banks are shifting their focus to e-service quality in place of traditional service quality in their complete transaction process.

In this era of information technology, customers are also quite concerned about the e-service quality provided by the respective banks. They have started maximizing and minimizing the transactions from the concerned banks based on e-service quality provided by them.

With the increasing number of banks offering online banking, this is quite difficult for the customers to select the most appropriate bank for the online transactions because the needs of the e-customers are diverse in nature; high quality of e-service has been increasingly recognized as one of the most

critical factor contributing to the success of any business based on e-transactions [50]. This paper proposes a conceptual model for measuring e-service quality (e-SQ) in Indian banking industry.

## II. LITERATURE REVIEW

Many researchers in the field of service quality have done numerous researches. As a result the literature is very rich in terms of model [11], [30]-[32], etc. and measurement [28], [9], [15], [23], [8], [51] etc. But the subject matter of e-service quality is relatively new; efforts had been made for compilation of the various measures of e-service quality.

### A. E-Service Quality and Definitions

Based on the traditional service definition of [13], [29] defines e-service as “deeds, effort or performances whose delivery is mediated by information technology (including the web, information kiosk and mobile devices). Such e-service includes the service element of e-tailing, customer support and service, and service delivery”. According to [52], e-service quality is “*the extent to which a website facilitates efficient and effective shopping, purchasing and delivery of products and services*”. This definition involves a complete service experience by customer during all the stages of the online shopping process and it consists of pre-website, on-website and post-website service aspects [52]. Another definition by [31] is “consumers’ overall judgment and evaluation of the excellence and quality of e-service offerings in the virtual marketplace”.

### B. E-Service Quality and Measures

There are number of methods that allow for the measurement of a company’s e-service profile as perceived by its customers. The best-known methods are: WEBQUAL, developed by [40], E-SERVQUAL, developed by [50], E-TailQ developed by [41] and E-S-QUAL developed by [28] and Other measurement instruments use the commercial performance of a website, measured by the number of clicks, or purchases generated by the website [19].

As we are concerned with only e-service quality, so emphasis is made only on e-service quality scales. E-SERVQUAL is a method for measuring website e-service quality that is based on the same principle as the original SERVQUAL method and includes some dimensions similar to those of SERVQUAL. The E-SERVQUAL scale contains a core and a recovery scale, measured and represented by four and three dimensions respectively. E-S-QUAL or core scale is used to measure the quality delivered by website. E-RecS-QUAL refers to specific situations, when a customer has a

Vivek Agrawal is with Management Department of GLA University, Mathura, India (Corresponding author phone: +91-8979949444; e-mail: vivekicfaira@gmail.com).

Vikas Tripathi is with Management Department of GLA University, Mathura, India. (e-mail: vikas.tripathi@gla.ac.in)

Nitin Seth is with Indian Institute of Foreign Trade New Delhi, India (e-mail: nitinseth@yahoo.com)

question pertaining to a problem, in which the three dimensions of the recovery scale become silent [28]. Some of the measures have been shown in Table I.

TABLE I  
E-SERVICE QUALITY MEASURES

Authors (year)	Country	Measures
[1]	USA	Technical adequacy, specific content, content quality, web appearance
[3]	UK	Usability, design, information, trust, empathy
[10]	Australia	Web store functionality, product attribute description, ownership condition, delivered products,
[16]	USA	Performance, access, security, sensation, information,
[43]	USA	Reliability, access, ease of use, personalization, security, credibility
[5]	USA	Web site design, trustworthiness, reliable service, Communication
[18]	USA	Reliable, attentiveness, ease of use, access, security, Credibility
[4]	Germany	Design, enjoyment, process, reliability, responsiveness
[6]	Taiwan	Website design, Reliability, Security/Privacy, Customer service, Customer perceived – value, Customer satisfaction,
[35]	Indonesia	Reliability, Responsiveness, Competence, Accessibility, Courtesy, Communication, Credibility, Security, Understanding, Tangibility
[51]	China	Convenience, Information accuracy, Security, Functionality, Accuracy, Product completeness, Failure prevention, Failure recovery, Service guarantee

### C. E-Service Quality in Banking

Review on Internet banking e-service quality dimensions that were used to measure e-service quality at the country level shows that besides the dimensions used in E-SERVQUAL, some researchers found site aesthetics, assurance and personalization also to be of importance. The study of [17], on Internet banking e-service quality in USA indicated that three dimensions constituted the e-service quality; namely Efficiency, Contact and Customization. Efficiency also was found to be a major component of Internet banking e-service quality in Hong Kong [26], Sweden [20], and Taiwan [42]. The study also revealed that usefulness, ease of use, reliability, responsiveness, security and privacy emerged as dimension of Internet banking in Hong Kong. The study of [42] on Internet banking in Taiwan indicated that dimensions that constitute Internet banking e-service quality were Efficiency, Fulfillment, System Availability, Privacy, Contact, Compensation, Site Aesthetics, and Customization.

Since, few studies have been done on e-service quality within banking especially in India, so this study is needed to find out the dimensions for measuring the e-service quality.

### III. CONCEPTUAL MODEL

Literature indicates the lack of dimensions for measurement of e-service quality. Researchers used various dimensions for e-SQ based on the field of their study. Moreover, some

researchers identified different dimensions for the same field. Furthermore, the dimensions of the common measures are subject to change based on researchers study. It has been indicated that e-service quality dimensions tend to be dependent on various industries and different service types within the same industry [46].

Based on reviewing the literature, and the selected measures for e-service quality mentioned in Table I, a conceptual model for measuring e-SQ in Indian Banking Industry is formulated after the focus group discussion with the bank managers, as shown in Fig. 1.

The dimensions of this model are those measures that have a high impact on measuring the e-service quality in Indian banking industry. Moreover, this research combines many common dimensions used by other researchers under the following dimensions. These dimensions are reliability, ease of use, personalization, security and trust, website aesthetic, contact, responsiveness, contact and fulfillment.

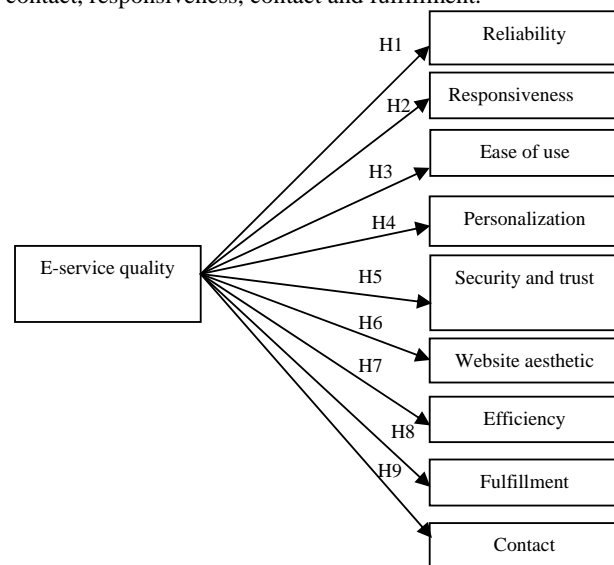


Fig. 1 Proposed Framework for E-service Quality in Indian Banking Context

#### A. Reliability

It refers to the ability to perform a promised service accurately and consistently, including frequency of updating the web site, prompt reply to customer enquiries, and accuracy of online financial transactions [22], [29], [36], [38], [2]. For this the following hypothesis is proposed:

H1. There is a positive impact of reliability on e-service quality.

#### B. Responsiveness

It relates to flexibility, prompt delivery, consistency and accuracy of service delivered [25], [36], [34], [37], [48], [47], [2], [27], [22], [28], [24]. For this the following hypothesis is proposed:

H2. There is a positive impact of responsiveness on e-service quality.

### C. Ease of Use

Site contains functions that help customers find what they need without difficulty, has good search functionality, and allows the customer to maneuver easily and quickly back and forth through the pages [49], [44], [9], [2], [33]. For this the following hypothesis is proposed.

H3. There is a positive impact of ease of use on e-service quality.

### D. Personalization

This dimension involves individual designs for clients in accordance with their pattern of consumption and preferences, which also results in an optimum online service, saves the customer time and increases their perception of service quality [27], [45], [12], [22]. For this the following hypothesis is proposed:

H4. There is a positive impact of personalization on e-service quality.

### E. Security and trust

It addresses the technical specifications of a website's security, trust and payment methods. This dimension also incorporates company's reputation, confidence and general confidentiality among consumers and those operating from within the company, engaging in the communication process [45], [41], [39], [2], [21], [22], [33], [24]. For this the following hypothesis is proposed:

H5. There is a positive impact of security and trust on e-service quality.

### F. Website Aesthetic

A multidisciplinary pursuit pertaining to the planning and production of websites, including, but not limited to technical development, information structure, visual design, and networked delivery [7], [36], [41], [48], [2]. For this the following hypothesis is proposed:

H6. There is a positive impact of website aesthetic on e-service quality.

### G. Efficiency

A website is simple to use, structured properly, and requires minimum information to be input by the customer [12], [28]. For this the following hypothesis is proposed:

H7. There is a positive impact of efficiency on e-service quality.

### H. Contact

The availability of assistance is through telephone or online representatives [28]. For this the following hypothesis is proposed:

H8. There is a positive impact of contact on e-service quality.

### I. Fulfillment

This dimension refers to the extent to which the sites' promises about order delivery and item availability are fulfilled [28]. For this the following hypothesis is proposed:

H9. There is a positive impact of fulfillment on e-service quality.

## IV. PROPOSED FUTURE WORK

To test the reliability and validity of the proposed conceptual model, data can be collected from the professionals, customers of Internet banking through interviews, structured questionnaires. Statistical software like SPSS, AMOS, Gretl etc. can be used for testing the reliability, validity and to perform the factor analysis. Analyzing the proposed structural model can test the hypothesis. The findings may assist in defining the significance and influence of dimensions of e-service quality in banking.

## V. CONCLUSION

A conceptual model is proposed for measuring the e-service quality in Indian banking sector after the focused group discussion. The 9 dimensions in the proposed model are based on the literature and the previous researches in the related areas. The proposed dimensions may have influence on e-service quality. Determining the significant dimensions can help the bank to improve the e-service quality, especially the validation of these dimensions is considered from both users and employees' point of view. The findings will lead to build a proper scale to measure the e-service quality in Indian banking industry, which will further help to improve the concert and efficiency of e-service quality to achieve the satisfaction of users. Consequently, it will lead to attain a competitive advantage for the banks in their respective target markets.

## REFERENCES

- [1] Aladwania, A. M. and Palvia, P. C. (2002), "Developing and validating an instrument for measuring user-perceived Web quality", *Information and Management*, 39(6), 467–476.
- [2] Al-Tarawneh, K. A. (2012), "Measuring E-Service Quality from the Customers' Perspective: An Empirical Study on Banking Services", *International Research Journal of Finance and Economics*, 91, 123-197.
- [3] Barnes, S. J. and Vidgen, R. T. (2002), "An integrative approach to the assessment of e-commerce quality", *Journal of Electronic Commerce Research*, 3(3), 114-127.
- [4] Bauer, Hans H., Hammerschmidt, M. and Falk T., (2006), "Measuring the quality of e-banking portals", *International Journal of Bank Marketing*, 23 (2), 153 - 175
- [5] Cai, S. and Jun, M. (2003), "Internet users' perceptions of online service quality: a comparison of online buyers and information searchers", *Managing Service Quality*, 13(6), 504 – 519.
- [6] Chang, H., Y. Wang and W. Yang. (2009), "The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value", *Total Quality Management*, 20(4), 423-443.
- [7] Cox, J. and Dale, B.G. (2001), "Service quality and e-commerce: An exploratory analysis", *Managing Service Quality*, 11 (2), 121-131.
- [8] Einasto, O. (2014), "Investigating e-service quality criteria for university library: a focus group study", *New Library World*, 115, (1/2), 4 - 14
- [9] Fassnacht, M. and Koese, I. (2006), "Quality of electronic services: Conceptualizing and testing a hierarchical model", *Journal of Service Research*, 9 (1), 19-31.
- [10] Francis, J.E. and White, L. (2002), "Exploratory and confirmatory factor analysis of the Perceived Internet Retailing Quality PIRQUAL model", in Shaw, R.N., Adam, S. and McDonald, H. (Eds), *Proceedings of ANZMAC 2002*, CD-ROM.
- [11] Frost, F.A. and Kumar, M. (2000), "INTSERVQUAL: an internal adaptation of the GAP model in a large service organization", *Journal of Services Marketing*, 14, (5) 358-77.
- [12] Herington, C. and Weaven, S. (2009), "E-retailing by banks: e-service quality and its importance to customer satisfaction", *European Journal of Marketing*, 43 (9/10), 1220 – 1231.

- [13] Hoffman, K. D. and Bateson, J. E. G. (1997), "Essentials of Services Marketing Fort Worth", TX, The Dryden Press.
- [14] Hongxiu Li and Suomi R. (2009), "A Proposed Scale for Measuring E-Service Quality", *International Journal of E-service, Science and Technology*, 2 (1).
- [15] Hsu, S.-H. (2008), "Developing an index for online customer satisfaction: adaptation of American customer satisfaction index", *Expert Systems with Applications*, 34, 3033-3042.
- [16] Janda, S., Trocchia, P.J. and Gwinner, K.P. (2002), "Consumer perceptions of internet retail service quality", *International Journal of Service Industry Management*, 13(5), 412-31.
- [17] Joseph M., McClure C., Joseph B., (1999), "Service quality in the banking sector: the impact of technology on service delivery", *International Journal of Bank Marketing*, 17 (4), 182 – 193.
- [18] Jun, M., Yang, Z., and Kim, D. (2004), "Customers' perceptions of online retailing service quality and their satisfaction", *International Journal of Quality & Reliability Management*, 21 (8), 817-840.
- [19] Jung, T. H. and Butler R. (2000), "Perceptions of Marketing Managers of the Effectiveness of the Internet in Tourism and Hospitality", *Journal of Information and Tourism*, 3 (3/4), 167-176.
- [20] Kenova, V. and Jonasson, P. (2006), "Quality Online Banking Services, Bachelor Thesis within Business Administration", Submitted to Jönköping International Business School Jönköping University, 3-4
- [21] Kimery, K.M. and McCard, M. (2002), "Third-party assurances: mapping the road to trust in e-retailing", *Journal of Information Technology Theory and Application*, 4 (2), 63-82.
- [22] Lee, G.-G. and Lin H.-F. (2005), "Customer Perception of E-service Quality in Online Shopping", *International Journal of Retail and Distribution Management*, 33 (2), 161-176.
- [23] Li, H. and Suomi, R. (2007), "Electronic Service Quality: A Transaction Process Based Evaluation Model", *The European Conference on Information Management and Evaluation*, Montpellier, France.
- [24] Loonam, M. and O'Loughlin, D. (2008), "Exploring e-service quality: a study of Irish online banking", *Marketing Intelligence & Planning*, 26 (7), 759 – 780.
- [25] Madu, C.N. and Madu, A.A. (2002), "Dimensions of e-quality", *International Journal of Quality & Reliability Management*, 19 (3), 246-259.
- [26] Noel, Y. M. S. and Jeremy C. W. M. (2005), "Measuring service quality in Internet banking: The case of Hong Kong", *Journal of International Consumer Marketing*, 17, 99-116.
- [27] Parasuraman, A.; Zeithaml, V. A. and Berry, L. L. (1988), "SERVQUAL: a multiple item scale for measuring customer perceptions of service quality", *Journal of Retailing*, 12-40.
- [28] Parasuraman, A. Zeithaml, V.A. and Malhotra, A. (2005), "E-S-QUAL: A Multiple Item Scale for Assessing Electronic Service Quality", *Journal of Service Research*, 7 (3), 213-233.
- [29] Rowley, J. (2006), "An analysis of the e-service literature: Towards a research agenda", *Internet Research*, 16 (3), 339-359.
- [30] Sahadev, S. and Purani, K. (2008), "Modeling the Consequences of E-service Quality", *Marketing Intelligence and Planning*, 26 (6), 605-620
- [31] Santos, J. (2003), "E-service Quality – A Model of Virtual Service Dimensions", *Internet Research*, 15 (1), 21-48.
- [32] Seth, N., Deshmukh, S.G. and Vrat, P. (2005), "Service quality models: a review", *Journal of Quality and Reliability Management*, 22, (8).
- [33] Soha, C. and Tadisina, S.K. (2008), "Development of e-service quality measure for the internet-based financial institutions", *Total Quality Management & Business Excellence*, 19 (9), 903-918.
- [34] Surjadaja, H. Ghosh, S. and Antony, F. (2003), "Determinants and assessing the determinants of e-service operation", *Managing Service Quality*, 13 (1), 39-44.
- [35] Sutarso, Y. and Suharmadi, A. (2011), "Promotion of E-Technology-Based Services: A Case Study of E-Service Quality at a University in Indonesia", *International Journal of Business and Information*, 6.
- [36] Swaid, S.I. and Wigand, R.T. (2009), "Measuring the quality of e-service: scale development and initial validation", *Journal of Electronic Commerce Research*, 10 (1), 13-28.
- [37] Tan, K.C., Xie, M. and Li, Y.N. (2003), "A service quality framework for web-based information systems", *The TQM Magazine*, 15(3), 164-72.
- [38] Tih, S. and Ennis, S. (2004), "Internet retailing: determinants of consumers' intentional repurchases of internet services", *Proceedings of the 33rd EMAC Conference*, Universidad De Murcia, Murcia, 18-21 May.
- [39] Van Riel, A.C.R.; Semeijn, J. and Janssen, W. (2003), "E-Service Quality Expectations: A Case Study", *Journal of Total Quality Management and Business Excellence*, 14 (4), 437 – 451
- [40] Loiacono, E.T., Watson, R.T. and Goodhue, D.L. (2002), "WebQual: a measure of quality, in Evans", K.R. and Scheer, L.K. (Eds), *Proceedings of the 2002 American Marketing Association Winter Educators Conference: Marketing Theory and Applications*, American Marketing Association, Chicago, IL, 13, 432-8.
- [41] Wolfenbarger, M. F & M.C. Gilly (2002), "ETailQ: Dimensionalization, Measuring and Predicting Etail quality", *Journal of Retailing*, 79 (3), 183-198.
- [42] Wu Yu Lung, Chang, M.C.S., Pei-Chi Yang and Ying Jun Chen (2008), "The Use of E-SQ to Establish the Internet Bank Service Quality table", *IEEE International Conference on Industrial Engineering and Engineering Management*, December, 1446-1450
- [43] Yang, Z. and Jun, M. (2002), "Consumer perception of e-service quality: From Internet purchaser and non purchaser perspectives", *Journal of Business Strategies*, 19 (1), 19-41.
- [44] Yang, Z. (2001), "Customer perceptions of service quality in internet-based electronic commerce", *Proceedings of the 30th EMAC Conference*, Bergen, 8-11.
- [45] Yang, Z. and Jun, M. (2002), "Consumer perception of e-service quality: From Internet purchaser and non purchaser perspectives", *Journal of Business Strategies*, 19 (1), 19-41.
- [46] Yang, Z. Peterson, R.T. and Cai, S. (2003), "Services quality dimensions of Internet retailing: An exploratory analysis", *Journal of Services Marketing*, 17 (7), 685-701.
- [47] Yang, C.C. (2003), "Establishment and applications of the integrated model of service quality measurement", *Managing Service Quality*, 13(4), 310-24.
- [48] Yoo, B. and Donthu, N. (2001), "Developing a scale to measure perceived quality of an Internet shopping site (SITEQUAL)", *Quarterly Journal of Electronic Commerce*, 2 (1), 31-46.
- [49] Zeithaml, V.A. Parasuraman, A. and Malhotra, A. (2000), "A conceptual framework for understanding e-service quality: Implications for future research and managerial practice", *MSI Working Paper Series No. 00-115*, Cambridge, MA, 1-49
- [50] Zeithaml, V. A., Parasurman, A. and Malhotra, A. (2002), "Service quality delivery through web site: A critical review of extant knowledge", *Journal of the Academy of Marketing Science*, 30 (4), 362-375.
- [51] Zhang, M.; Huang, L.; He, Z. and Wang, Alan G. (2014), "E-service quality perceptions: an empirical analysis of the Chinese e-retailing industry", *Total Quality Management & Business Excellence*
- [52] Zeithaml, V. A., Parasurman, A. and Malhotra, A. (2002), "Service quality delivery through web site: A critical review of extant knowledge", *Journal of the Academy of Marketing Science*, 30 (4), 362-375

**Vivek Agrawal** is an Assistant Professor in the Department of Management Studies in GLA University, Mathura (U.P.), India. He has first class degree in MBA. He is pursuing his Ph.D. in the area of e-service quality from Institute of Business Management, GLA University, Mathura (U.P.), India. He has guided many Master level thesis in management and published more than five research papers in national/international journals/conferences and has more than six years of teaching experience with specialization in e-service quality and operations management.

**Dr. Vikas Tripathi** is an Associate Professor in the Department of Management Studies in GLA University, Mathura (U.P.), India. He has doctoral degree from Dr BR Ambedkar University, Agra, India. He has guided many Master level thesis in management and published more than fifteen research papers in national/international journals/conferences and has more than twelve years of teaching experience with specialization in marketing and operations management.

**Dr. Nitin Seth** is an Associate Professor in Indian Institute of Foreign Trade, New Delhi, India. He has doctoral degree (PhD) in the area of Supply Chain Management from Indian Institute of Technology, Delhi (IIT Delhi) and Post-Doctoral Experience (+6 Months), at GIZ/DIE Germany and Ecole Des Mines, Saint Etienne France (Programme Sponsored by Federal Ministry of Economic Cooperation and Development, Germany). He has many research papers and articles to his credit. He is actively involved in the research on competitiveness, supply chain risk and security, modeling in supply chain,

total quality management, service quality and other related areas. He has about 19 years of experience in teaching and consultancy, which includes three years of industry experience at middle level. He has delivered talks on several issues spanning SCM, operations management etc at National and International level.