

A REVIEW OF LIBRARY E-SERVICE QUALITY SCALES

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ABSTRACT

There has been a growing importance of e-service over the past 10 years or so, and the libraries, is continuously updating their capability to offer users with the enhanced and easy access of the service. It is necessary to carry out some form of assessment to justify the reality of the situation whether or not the current libraries offer quality e-service and satisfy their users. The purpose of this paper is to review the existing models developed in accessing the quality of library e-service and. Literature search method will be used in identifying the most comprehensive model that can be implemented in evaluating the quality of library e-service. Since prominent models of service quality and quality e-service of non-library setting have been used as the base for the development of the models for the library setting, selected prominent models and their limitations will be highlighted. It is found, Hierarchical type of model as the most comprehensive model in service quality, e-service quality for non-library setting as well as for library setting. This paper also suggest that library should adopt models which has been developed originally from the library setting as different type of users have different set of expectations and need. Not much research has been addressed to issues on library e-service quality models and assessment. The findings should be valuable to academics and practitioners alike.

Keyword: Library E-Service Quality, Hierarchical Model, E-SERVQUAL

INTRODUCTION

Users use the electronic journals mainly to support research and teaching needs (Huzaimah Abdul Rani & Ngah, 2007) . Users in fact, willing to pay a higher library fee if the library could help them more with their research (Singh, 2007). Effective use of electronic information resources contribute to the academics' research output (Omeluzor, Madukoma, Bamidele, & Ogbuiyi, 2012). Since the research output of a university is one of the criteria for the university rankings, it will mirror the quality of education. Nonetheless, users of libraries have the perception that their e-journal service is not good enough. In fact, (Shuling, 2007) has the same point and he shows that at least 29.3 per cent of users think that

propaganda of electronic resources in university libraries is insufficient. Thus, it is necessary to carry out some form of assessment to justify the quality of e-service offered by the library.

Nowadays, in the current networked environment, mainly the Internet, the libraries have to face the challenge that is the notable competition with other search engines available. The familiarity with the search engines of the internet has resulted users' expectation goes higher and influenced by the retrieval system used (Bawden & Vilar, 2006), their experiences with search engines, especially Google (Griffiths & Brophy, 2005b), (Ross & Sennyey, 2008). The expectations are then give impact on the retrieval of e-journal from library Web site, causing a phenomenon that libraries are facing competition from alternative information providers ((Griffiths & Brophy, 2005a); (Ross & Sennyey, 2008), (Kiran, 2011).

In order to maintain their relevance, academic libraries have adopted changes in library services to synchronize with the changing needs of its technologically inclined patrons (Kiran, 2011). Libraries have to identify which quality attributes of the e-journal service that really matter to their users. As highlighted by (Poll & Boekhorst, 2007), (Bawden & Vilar, 2006) the definition of quality should be different across different types of setting. Unfortunately, from the review of literature (Hernon & Calvert, 2005), (Nitecki & Hernon, 2000), (Green, 2006) it reveals the heavy reliance of on non-library setting evaluation tool of e-service. Nonetheless, realizing the importance of developing the assessment tool from the library setting, attempts has been made to establish such tool or model by (Kiran, 2011) and (Einasto, 2014). This paper will review the models that have been the back bone to the development of the library e-service quality assessment. From the review, we will find the most comprehensive model that can be implemented in evaluating the quality of library e-service.

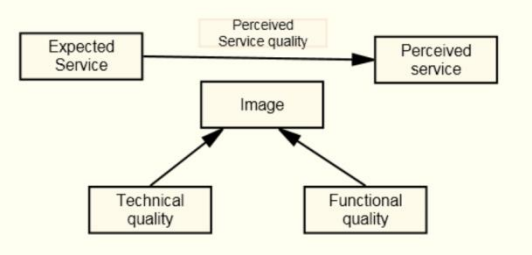

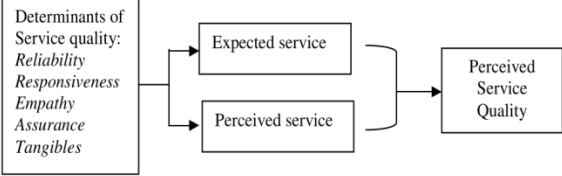
LITERATURE REVIEW

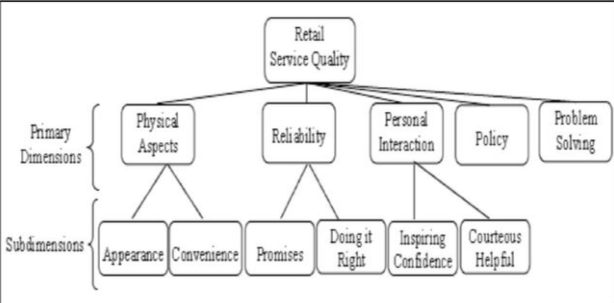
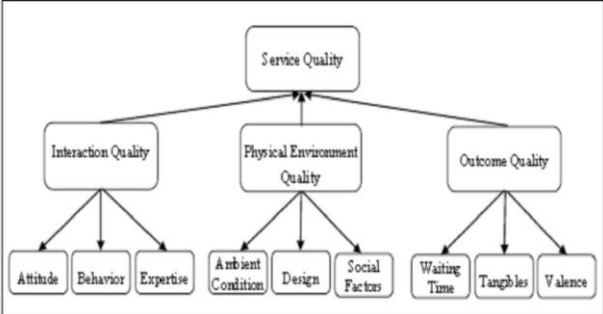
It will be worth to identify and discuss the models that have been used as the foundation. As the quality of electronic based service models only established in the Millennium era (1999 onwards), they have somehow being rationalized by the existing definition of the existing ones (Service Quality Models and E-Service Quality Models).

Service Quality Models

In service quality, there has been number of models to measure the quality of service quality of library. Initially, the service quality measurement is conducted in other field than the library. Adoptions and adaptations have been made from time to time and later by the library field. Table 1.1 below lay out the models and their limitations.

Table 1.1 Prominent service quality models and their limitations

Model	Description	Limitation(s)
<p>1. Gronroos Model (Nordic Model) (Grönroos, 1984)</p> 	<ul style="list-style-type: none"> • Defined the concept of perceived service quality, as ‘the outcome of an evaluation process, where the consumer compares his expectations with the service he perceived he has received. • Cited as the first author to contribute a service quality conceptual framework (Green, 2006). • Covers technical quality (the outcome or ‘what’) and functional quality (the process or ‘how’). • Among the adaptations/refinements: <ul style="list-style-type: none"> • (Rahman, Khan, & Haque, 2012), (Lehtinen & Lehtinen, 1991) and (Kang & James, 2004) 	<ul style="list-style-type: none"> • The model/study is too general without offering any technique on measuring technical and functional quality.(Ghotbabadi, Baharun, & Feiz, 2012)
<p>2. Three-Component Model (Rust & Oliver, 1994)</p> 	<ul style="list-style-type: none"> • Refinement of Nordic Model • Lay out the service quality into three-component model: the service product (technical quality), the service delivery (functional quality) and service environment • Among the adaptations/refinements: (Akter, D’ Ambra, & Ray, 2010), (Chahal & Kumari, 2010) (Fassnacht & Koese, 2006) (Kiran, 2011) and (Kiran & Diljit, 2012) 	<ul style="list-style-type: none"> • The model was not tested • Details on each component are not clear and general
<p>3. SERVQUAL Model (Parasuraman, Zeithaml, & Berry, 1985)</p> 	<ul style="list-style-type: none"> • Defined quality as ‘difference between the expected and perceived performance • An analytical measuring tool • Dynamically tested and improved upon (Parasuraman et al., 1985, 1988, 1990, 1993, 1994 (Zeithaml, Berry, & Parasuraman, 1996); (Zeithaml, Parasuraman, & Malhotra, 2002) , (Parasuraman, Zeithaml, & Malhotra, 2005) 	<ul style="list-style-type: none"> • Cover only functional(process) part of quality not the technical (outcome) • Does not offer a clear measurement method for measuring gaps at different levels • Finding in years of using this model shows SERVQUAL factors are inconsistent and it is not comprehensive for different applications (Dabholkar, et.al, 1996)

Model	Description	Limitation(s)
<p>4. Multilevel model (Dabholkar, et.al, 1996)</p> 	<ul style="list-style-type: none"> • Dabholkar et al propose this three stage model to overcome SERVQUAL weaknesses • Three-stage model has been proposed; General perceptions of service quality (first stage), primary dimensions (second stage), and sub dimensions (third stage) • Used in retailing field 	<ul style="list-style-type: none"> • Although the model is quite comprehensive, it has limitation in term of technical factor (outcome) • Sub-dimensions are not well defined
<p>5. Hierarchical model (Brady & Cronin, 2001)</p> 	<ul style="list-style-type: none"> • Specify all the sub-components • Include functional and technical part of service quality • Integrate the three component model • Accept the idea of multilevel service quality (three primary level dimensions; interaction, environment and outcome) • Defines service quality perception's measurement clearly • Adaptations made in various fields; e.g.: (Chahal & Kumari, 2010), mobile health (Akter, D'Ambra, & Ray, 2010) and sport (Ko & Pastore, 2005) 	<ul style="list-style-type: none"> • The conceptualization may not applicable to all service industries as they only tested only in four service industries fast food, photograph developing, amusement parks, and dry cleaning

From all the models that has been discussed in the table 1.1. Hierarchical Model by Brady and Cronin has shown the most comprehensive measurement scale for service Quality (Ghotbabadi et al., 2012). Besides encountering all the weaknesses of previous model, another advantage of the model is that if the root of inefficiency of the service is detected the in first level, the understanding of ineffectiveness in bigger picture (higher level) can be understood. The models have been referred in developing the e-service quality models which further will be discussed in the next part.

E-Service Quality Models

In this part, several well-known models of e-service quality will be spell out. Various approaches have been made in measuring the quality e-service in non- library setting and several in library setting. The examples of non-library setting are internet retailing, banking, tourism and many more. Each model has its strength and weakness but usually accommodate the context that it has been used. However, as time goes, improvements have been made on the existing models in filling the gap. Table 1.2 below lay out the models of e-service from non-library setting and their limitations.

Table 1.2 The models of e-service from non-library setting and their limitation(s)

Model	Description	Base model(s)	Limitation
WebQUAL (Loiocono, Watson, & Goodhue, 2002)	<ul style="list-style-type: none"> • Developed by (Loiocono et al., 2002) to investigate the characteristics of a retail Web site to evaluate web site quality • Use 12 characteristics of a Web site, representing strong measurement validity, and it forecasts intention to buy from or the reason why revisit a Web site. • Concepts involved: ease of use , usefulness, entertainment, complementary relationship and customer service • WebQUAL is widely used and adapted for numerous site evaluations but not for library service quality 	Technology Acceptance Model, Theory of Reasoned Action	<ul style="list-style-type: none"> • (Zeithaml et al., 2002) mentioned that WebQual is more relevant to interface design rather than service quality dimension. • The development of the model is lack of qualitative emerging categories as the sample was given researcher-specified categories.
SiteQual (Yoo & Donthu, 2001)	<ul style="list-style-type: none"> • Developed by (Yoo & Donthu, 2001) to measure the perceived quality of Internet shopping sites. • Used to assess web retail sites • Divided into two broad sets namely vendor-related and also the site quality. • Nonetheless, as the researchers wanted to focus on site quality, the first set of factors was removed. • Dimensions for quality: Ease of Use, Aesthetic Design, Processing Speed & security 	Not identified	<ul style="list-style-type: none"> • (Loiacono, Watson, & Goodhue, 2007) argue that SITEQUAL’s original set of items was too narrowly based, and as mostly only two items measures its final factor.
E-S-Qual (Parasuraman et al., 2005)	<ul style="list-style-type: none"> • Derived from the study by (Parasuraman et al., 2005) on efficient and effective shopping, purchasing and delivery web sites from the view customers • Seven dimensions of e-SQ were produced; <ul style="list-style-type: none"> i) Core dimension: Efficiency ,Fulfillment, Reliability and Privacy, ii) Service recovery dimensions: Responsiveness, Compensation & Contact 	SERVQUAL	<ul style="list-style-type: none"> • Cover only functional(process) part of quality not the technical (outcome) • Does not offer a clear measurement method for measuring gaps at different levels • (Kiran, 2011) found that reliability and responsiveness are in quite similar dimensions
Hierarchical Model of M-Service (Akter et al., 2010)	<ul style="list-style-type: none"> • (Akter et al., 2010) developed the model for mobile health services to the electronic markets customers targeted for only health workers as the only users of the services • Quality dimension involved: (system reliability, system availability, system efficiency and system privacy), interaction quality dimensions (responsiveness, assurance and empathy), and outcome quality dimension (functional benefit and emotional benefit) 	Hierarchical Model, E-S-QUAL , SERVQUAL model	<ul style="list-style-type: none"> • Some of the variables in lower level measured by low number of items. e.g.: System availability & system privacy only measured by 2 items

In conclusion, for the general e-service quality models, Hierarchical Model of M-service by (Akter et al., 2010) has cover wide-ranged aspects of accessing the quality of e-service. Both functional and technical part covered and lay out in multi-level. Besides that, this type of model can give clear characteristics of the services that need to be assessed.

METHODOLOGY

In this paper, we used literature research method for finding the best model for library e-service quality measurement. One of the useful methods (especially in review works) is literature survey. Using secondary sources and work of other researchers is base of this study. This paper critically reviews and discusses four different library e-service quality models reported in literature. Objective of this study is finding the best and comprehensive model in measuring customer perception about quality of library e-services.

DISCUSSION

This section allocated to gathering and evaluating information and researchers work about four models in e-service quality measurement, which have been used in accessing the library e-service quality. In order to be clear with the concepts used in library e-service, clarification on the common terms used in this field will give better understanding. In Library & Information Science, the term digital library service, electronic library service, web-based service seems quite confusing.

(Borgman, 1999) indicates that in general, researchers focus digital library as content collected on behalf of user communities, while librarians tend to focus digital libraries as institutions or services. (Lesk, 1997) defines digital library as the digital information collection that has been organized. As libraries and archives have always done, they combine the structure and gathering of information, which the digital representation are done by computers. Meanwhile, in (Ramayah & Bushra, 2004) studies, electronic or online library (e-library) is defined similarly as the digital library (DL) that needs technology to link the

resources of many libraries and information services to their users. Web-based e-service is referred to e-service offered by the library which is accessible from the library website (Kiran & Diljit, 2012). In this part, common models used by library and information science field in accessing digital information service, e-library service as well as web-based e-service will be highlighted.

DigiQual

DigiQUAL® has been developed by Association of Research Libraries, Texas A&M University and University of Texas to evaluate the digital libraries from user perspective. The development of DigiQual has been funded by National Science Foundation's (NSF) National Science Digital Library (NSDL) program, emphasizing issues related to reliability and trustworthiness of a Web site. The development of DigiQUAL® uses mixed methods, both qualitative and quantitative methods. Based on the focus groups held at Digital Library for Earth System Information (DLESE) and Multimedia Educational Resource for Learning and Online Teaching (MERLOT) a model was developed that describes two major components in the digital library environment, the human/system interaction and technical component (Kyrillidou, 2009).

UTOPIA digital library developed and supported by the University of Texas was one of the first DLs to implement DigiQUAL ® together with other NSDL collections. DigiQUAL ® is based on the LibQUAL® protocol and collects feedback on the site's service, functionality and content (Kyrillidou & Cook, 2008). Themes related to digital library service quality identified in this study 1)Accessibility 2)Navigability 3)Interoperability 4) Collection building 5)Resource Use 6) Evaluating collections 7)DL as community for users 8) DL as community for developers 9)DL as community for reviewers 10) Copyright 11)Role of Federations 12) DL Sustainability.

Although it is developed from user perspective, there are limitations of this model. The dimensions used in DigiQual are broad and focused on functional only. Besides that unclear categorization of dimensions in DigiQual might lead to irrelevant elements present in the judgement of e-service. This might be aligned with (Borgman 1999) thought that users tend focus digital library as content collected.

Library E-SERVQUAL

It can be said that studies by (Hernon & Calvert, 2005) has given an impact on library electronic service quality. Building upon their previous study of service quality (Nitecki & Hernon, 2000) using early dimensions of SERVQUAL to identify library service quality, (Hernon & Calvert, 2005) examined library e-service quality at eight universities in New Zealand. They began with ten dimensions they deduced from the literature review and focus groups.

The researchers did not conduct confirmatory factor analysis but they have conducted further research to refine the pool of statements and re-conceptualization of the dimensions. By using questionnaires instruments, users are asked to think of an ideal library with excellent services and then judge the current library services on a 10 point scale ranging from 1(of no importance) to 10 (of highest importance) Likert type scale. Each questions is to be answered twice, once 'in an ideal library' and then 'in library xxx'. There are 104 items in the pool from which about 22 statements (corresponding to the number used in the original SERVQUAL and in E-S-QUAL) are recommended for inclusion in the questionnaire.

The authors used Factor Analysis to produce eleven factors solution. It has been described in the research that the dimensions deduces from the factor analysis is stronger than dimensions deduces from the literature. The factors discernible from the factors analysis are 1)Ease of use 2)Collection 3)Linkage, 3)Flexibility, 4)Customer 5)Feedback, 6)Customization/Personalization, 7)Equipment, 8)Empathy, 9)Efficiency, and another two

factors which are not identified. The limitation of this model is that instruments developed by Herson & Calvert only undergone face validity by the experts but not the statistical reliability and validity.

Hierarchical Model of Web-Based Library E-Service Quality

Since SERVQUAL may not be applicable to all library settings. (Kiran, 2011) has come up with a model of web-based service quality to fit the library settings of Research Universities in Malaysia (UM, USM, UPM & UKM) with a fresh insight into the investigation of key determinants of Web-based library service quality emphasizing on how library customers perceive service quality. Four Research Universities has been involved in this study. In this study, the term Web-based library services is used to refer to services accessible via an academic library's Web site, as to differentiate from purely digital library services that may be delivered by means of a digital library. The sequence of the research is as follows (Figure 1.1):

Figure 1.1 : Research sequence of (Kiran & Diljit, 2012)

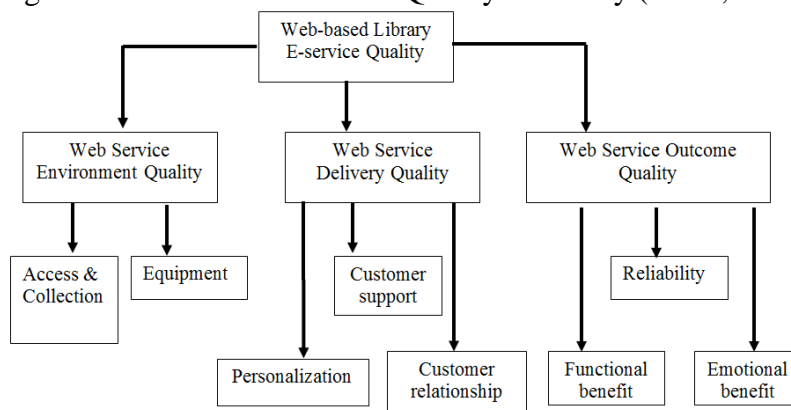
Phase 1 : Model development
Step 1: Articulated the meaning and domain of web-based library e-service quality based on insights from the extant literature
Step 2: Conduct focus-group discussions to conceptualize and revise the key domains of web-based library e-service quality
Step 3: Formulate a preliminary scale based on Step 1 & 2 and present it to LIS experts for comments. Revise scale if necessary.
Step 4: Administer revised scale
Step 5: Develop a scale through an iterative process
Phase 2 : Model verification
Step 6: Administer the final scale—Survey II
Step 7: Scale purification & model testing

From focus group interview, key determinants were identified, and contributed to the development and empirical testing of a proposed conceptual model of service quality that encompasses environment, delivery, and outcome quality. Unlike the disconfirmation approach, the performance only measure was used. Participants included postgraduates and academic staff from four research intensive universities in Malaysia. Exploratory factor

analysis and confirmatory factor analysis using structural equation modeling was carried out in order to develop and validate a measurement model for Web-based service quality.

Out of 95 multi item instrument categorized under 14 themes emerged from the focus group, only 7 themes tested to be reliable by using the Cronbach's alpha value. Exploratory factor analysis was conducted (EFA) was conducted using the principal component analysis (PCA) technique. Based on the multilevel model of (Dabholkar et al., 1996) and (Fassnacht & Koese, 2006) hierarchical model of service quality, and the high correlation' values among items, the presence of higher-order dimensions were examined. From this study, modified and tested model of Web-Based Service Quality can be illustrated in Figure 1.2 as follows:

Figure 1.2: Web-based Service Quality Model by (Kiran, 2011)



CONCLUSION

It is identified that Hierarchical Model give the most comprehensive measurement in Service Quality, E-Service Quality as well as in Library E-Service Quality. The measurement scale developed by the Kiran, 2011 can be used in determining the service quality as well as e-service as it has been tested statistically. Besides that, the strength of the model is that it has been developed originally from the library setting. As stressed by(Poll & Boekhorst, 2007) and (Bawden & Vilar, 2006) definition of quality from different group might be different as their need and expectation might varies accordingly.

REFERENCES

- Akter, S., D'Ambra, J., & Ray, P. (2010). Service quality of mHealth platforms: development and validation of a hierarchical model using PLS. *Electronic Markets*, 20(3-4), 209–227.
- Bawden, D., & Vilar, P. (2006). Digital libraries: to meet or manage user expectations. *Aslib Proceedings*, 58(4), 346–354.
- Borgman, C. L. (1999). What are digital libraries ? Competing visions. *Information Processing & Management*, 35, 227–243.
- Brady, M. K., & Cronin Jr, J. . J. (2001). Some thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of Marketing*, 65(3), 34–49.
- Chahal, H., & Kumari, N. (2010). Development of multidimensional scale for healthcare service quality (HCSQ) in Indian context. *Journal of Indian Business Research*, 2(4), 230–255.
- Dabholkar, P. A., Thorpe, D. I., & Rentz, J. O. (1996). A measure of service quality for retail stores: Scale development and validation. *Journal of Academy of Marketing Services*, 24(1), 3–16.
- Einasto, O. (2014). Investigating e-service quality criteria for university library: a focus group study. *New Library World*, 115(1), 4–14.
- Fassnacht, M., & Koese, I. (2006). Quality of electronic services: Conceptualizing and testing a hierarchical model. *Journal of Service Research*, 9(1), 19–37.
- Ghotbabadi, A. R., Baharun, R., & Feiz, S. (2012). A Review Of Service Quality Models. In *2 nd International Conference On Management* (pp. 1–8).
- Green, J. P. (2006). *Determining the reliability and validity of service quality scores in a public library context : A confirmatory approach*. University of Capella. Retrieved from <http://search.proquest.com/docview/304721320/fulltextPDF/AE38B00241634897PQ/1?accountid=44024>
- Griffiths, J. R., & Brophy, P. (2005a). Student searching behavior and the web : Use of academic resources and Google. *Library Trends*, 53(4), 539.
- Griffiths, J. R., & Brophy, P. (2005b). Student searching behavior and the web: use of academic resources and Google. *Library Trends*, 54(4), 539–554.
- Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of Marketing*, 18(4), 36–44.
- Hernon, P., & Calvert, P. (2005). E-service quality in libraries: Exploring its features and dimensions. *Library & Information Science Research*, 27(3), 377–404.

- Huzaimah Abdul Rani, & Ngah, Z. A. (2007). Gauging the users level of satisfaction: A study on the Electronic Journal of University Malaya (EJUM). In et. al. Abrizah Abdullah (Ed.), *Proc. of International Conference on Library and Information Science* (pp. 277–289). Kuala Lumpur: LISU, FCIT.
- Kang, G.-D., & James, J. (2004). Service quality dimensions: an examination of Grönroos's service quality model. *Managing Service Quality*, 14(4), 266–277.
- Kiran, K. (2011). *Development of an integrated scale for Web-based library service quality*. University of Malaya.
- Kiran, K., & Diljit, S. (2012). Modeling Web-based library service quality. *Library & Information Science Research*, 34(3), 184–196. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0740818812000357>
- Ko, Y. J., & Pastore, D. L. (2005). A hierarchical model of service quality for the recreational sport industry. *Sport Marketing Journal*, 14(2), 84–97.
- Kyrillidou, M. (2009). Library quality assessment through LibQUAL + ®. Retrieved September 02, 2014, from http://www.iatul.org/doclibrary/public/Conf_Proceedings/2009/Kyrillidou-ppt.pdf
- Kyrillidou, M., & Cook, C. (2008). The evolution of measurement and evaluation of libraries : A perspective from the Association of Research Libraries. *Library Trends*, 56(4), 888–909.
- Lehtinen, U., & Lehtinen, J. (1991). Two approaches to service quality. *The Service Industries Journal*, 3, 287–303.
- Lesk, M. (1997). *Practical digital library: books, bytes, and bucks* (p. 297). San Francisco, California: Morgan Kaufmann Publishers.
- Loiacono, E., Watson, R., & Goodhue, D. (2007). WebQual: An instrument for consumer evaluation of web sites. *International Journal of Electronic Commerce*, 11(3), 51–87.
- Loiocono, E. T., Watson, R. T., & Goodhue, D. L. (2002). WebQUAL: A measure of website quality. *Marketing Theory and Application*, 13, 432–437.
- Nitecki, D. A., & Hernon, P. (2000). Measuring service quality at Yale university's libraries. *The Journal of Academic Librarianship*, 26(4), 259–273.
- Omeluzor, S. U., Madukoma, E., Bamidele, I., & Ogbuiyi, S. U. (2012). Use of electronic information resources and research output by academic staff in private universities in Ogun State , Nigeria. *Canadian Social Science*, 8(3), 8–15.
- Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-SERVQUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(X), 1–21.
- Parasuraman, A., Zeithaml, V., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49, 41–50.

- Poll, R., & Boekhorst, P. te (Eds.). (2007). *Measuring quality : performance measurement in libraries. IFLA publications*, (2nd rev., p. 269 p.). München: K.G. Saur.
- Rahman, M. S., Khan, A. H., & Haque, M. M. (2012). A conceptual study on the relationship between service quality towards customer satisfaction: Servqual and Gronroos's service quality model perspective. *Asian Social Science*, 8(13), 201–210.
- Ramayah, T., & Bushra, A. (2004). Role of self-efficacy in e-library usage among students of public university in Malaysia. *Malaysian Journal of Library & Information Science*, 9(1), 39–57.
- Ross, L., & Sennyey, P. (2008). The library is dead, long live the library! The practice of academic librarianship and the digital revolution. *The Journal of Academic Librarianship*, 34(2), 145–152.
- Rust, R. T., & Oliver, R. L. (1994). Service quality: Insights and managerial implications from the frontier. In R. T. Rust & R. L. Oliver (Eds.), *Service Quality: New Directions in Theory and Practice* (pp. 1–9). Thousand Oaks, CA: Sage Publications.
- Shuling, W. (2007). Investigation and analysis of current use of electronic resources in university libraries. *Library Management*, 28(1/2), 72–88.
- Singh, D. (2007). The role of the academic library in facilitating research: perceptions of postgraduate students. In Abrizah Abdullah (Ed.), *Proceedings of the International Conference on Libraries, Information and Society* (pp. 467–470).
- Yoo, B., & Donthu, N. (2001). Developing a scale to measure the perceived quality of an internet shopping site (SITEQUAL). *Quarterly Journal of Electronic Commerce*, 2(1), 31–47.
- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60(April), 31–46.
- Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of Academy of Marketing Science*, 30(4), 362–375.