Importance-performance analysis of retail website service quality

Conference or Workshop Item

IMPORTANCE-PERFORMANCE ANALYSIS OF RETAIL WEBSITE SERVICE QUALITY

ABSTRACT

This study intends to empirically explore the customer's perceived ranking of the importance of a range of on-line services, and their perceptions of the retailers' performance in delivering these services. An online questionnaire survey has been conducted to gather the data from respondents. The data was analysed using Importance-Performance Analysis (IPA). The findings suggest areas of e-service quality where retailers could improve, based on the customers' perceptions of the retailers' performance against the importance of some e-service quality features and/ or services on offer. Consequently, this study highlights that retailers should take active steps to understand their customers' requirements, before developing an online customer services strategy. From a practical perspective, retailers could also apply the questionnaire developed for this study to canvas the opinions of customers, to help identify areas in which their performance needs to be improved.

KEYWORDS

E-service quality, website service quality, Importance-Performance Analysis

1. INTRODUCTION

There is a growing body of work that has focused upon customers' perceptions of the service quality that they experience, when visiting web-sites (Parasuraman *et al*, 2005; Cristobal *et al*, 2007; Loiacono *et al.,* 2007; Yang *et al.,* 2003). The customers' perceptions of e-service quality are largely based on studies of the traditional service quality measurement. SERVQUAL (Parasuraman *et al*., 1988) has been widely used in previous service quality studies but it has also been adopted and adapted in e-service quality studies (e.g. van Riel *et al*., 2003; Kaynama and Black, 2000). As a result, SERVQUAL has been further developed and enhanced, i.e. E-S-QUAL and Rec-S-Q (Parasuraman *et al.,* 2005), and this work is recognised as the most comprehensive work on e-service quality (Bauer *et al*., 2006). Nevertheless, when studies have been directly aimed at the virtual experience they have tended to focus on the technical evaluations of web sites interface features such as: the web site design (e.g. Dabholkar, 1996; Liu and Arnett, 2000; Kaynama and Black, 2000; Cox and Dale, 2002; Siu and Cheung, 2001); and, the accuracy and relevance of information (e.g. Liu and Arnett, 2000; Yoo and Donthu, 2001; Loiacono *et al*., 2007; Cao *et al*., 2005), rather than the softer service elements. Some studies suggest that consumers have become more concerned with being able to reliably order and receive ordered goods (Barnes and Vigden, 2001). Thus, the technical evaluation focus has been shifted to the assessment of on-line transaction processing (Parasuraman *et al*., 20005; Wolfinbarger and Gilly, 2003), which potentially renders softer issues as unimportant e.g., ease of use, responsiveness to complaints, availability of information.

In recent years, significant numbers of new e-service quality measurement models have been developed and tested. For example: PeSQ (Cristobal *et al*., 2007); e-TRansQual (Bauer *et al*., 2006); PIRQUAL (Francis and White, 2002); e-TailQ (Wolfinbarger and Gilly, 2003); E-S-QUAL and Rec-S-Q (Parasuraman *et al*., 2005). In contrast, some studies merely register lists of e-service quality dimensions (e.g. Yang *et al*., 2003; Yang and Fang, 2004; Long and McMellon, 2004, Cox and Dale, 2002), without exploring the affects and implications of such dimensions.

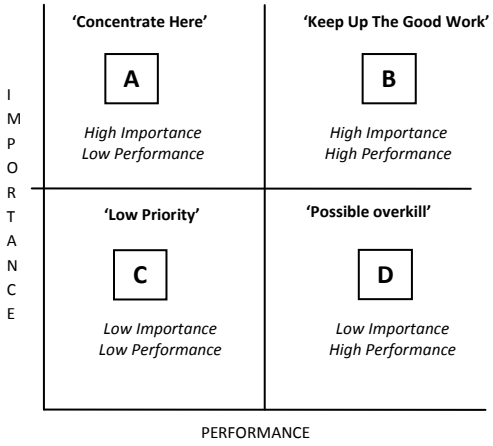
The previous body of literature can be criticised in a number of key respects. For example, there has been a tendency to focus solely on consumers' perceptions of the service providers' ability to satisfy a variety of service dimensions (e.g. Wolfinbarger and Gilly, 2003; Parasuraman *et al*., 2005), but without explicitly addressing how important each dimension is to their overall satisfaction to the same set of features / services. This is an important gap to be filled, because customers are not likely to be

impressed by service providers who deliver an ultra fast service, if speed is of no importance to them. Consequently, it is necessary to better understand consumers' perceptions of both the perceived importance and successful satisfaction of a range of service dimensions, as this will enable service providers to better align their service delivery with their customer' expectations (O'Neil *et al*., 2001). Therefore, the purpose of this survey is twofold: i) to gain greater understanding of customers' experiences and perceptions of service quality, when using on-line shopping web-sites; ii) to investigate the customers' perception of the importance of a variety of elements of e-service quality.

2. IMPORTANCE-PERFORMANCE ANALYSIS (IPA)

The IPA analysis is employed to gain a deeper understanding of the customers' perceptions of the website service quality. The '*importance'* dimension is used to canvas a person's general assessment of the significance of a particular attribute, whilst the '*performance*' dimension is used to assess how well that person's requirements, with respect to that same attribute, are satisfied (Chu and Choi, 2000). For example, in the context of e-service quality, respondents could be asked to rate both the *performance* of a specified web-site in satisfying their need for '*after sales service*', as well as the 'importance' of 'after sales service' to their experience of on-line shopping at the same site. The IPA technique emerged from the earlier work of Martilla and James (1977). Although this technique has been widely used in the service quality domain (e.g. Ennew *et al*., 1993), as yet, it has rarely been applied in the context of electronic commerce (O'Neill *et al*., 2001). The findings of the IPA technique will be analysed in a four quadrant of Importance-Performance Matrix (O'Neill *et al*., 2001; Martilla and James, 1977; Chu and Choi, 2000), as shown in Figure 1. The step by step procedures in conducting the IPA analysis, adapted from O'Neill and Palmer (2004) and O'Neill *et al*., (2001).

Figure 1: The Importance-Performance Matrix



3. RESEARCH STRATEGY

The internet was used to distribute the questionnaire to the respondents because it is perceived to be a relatively cheap and efficient means of conducting a customer survey (Granello and Wheaton, 2004; Ekman *et al*., 2006). To ensure that the participants had access to internet facilities, which is commonly identified as a potential drawback of this strategy (Solomon, 2001; Granello and Wheaton, 2004), the study targeted students, who were known to have access to the Internet. The students should reasonably represent the underlying population of online customers based on the fact that both the university students and the UK population show an increasing trend in online shopping (Jamie, 2010; Wearden, 2011, Rigby, 2012).All questions were adapted from prior e-service quality studies (e.g. Parasuraman *et al*., 2005; Wolfinbarger and Gilly, 2003; Tih and Ennis, 2006; Bauer *et al*., 2006; Cao *et al*., 2005; Yang *et al*., 2003; Ribbink *et al*., 2004). The questionnaire has also gone through a series of pre-testing and pilot testing stages.

Respondents were asked to rate their perceptions using 7 point Likert scale, based on their experience of Internet shopping at a specified online store. These questions were explicitly compared and contrasted service performance with importance. The questionnaire was distributed to a sample of 800 randomly selected students, studying at an established university in the UK. Respective students received an invitation email, which has a link to the online questionnaire. The questionnaire was made available online for a period of approximately six weeks. Ultimately, a total of 201 responses (25%) received from the respondents. Reliability test showed that all items are well above the critical value of 0.7 as suggested by Hair *et al.* (2010).

4. FINDINGS AND DISCUSSION

The respondents' demographic background is presented in Appendix 1. The statistics reveals that most of the respondents' have a mixture of various education backgrounds. Most importantly, more than half of the respondent's shops more than 12 times a year and almost 40 percent have experienced more than 6 years in online shopping. These findings indicate that the respondents are experienced enough with the online shopping encounter.

The steps involved in the IPA analysis are as follows:

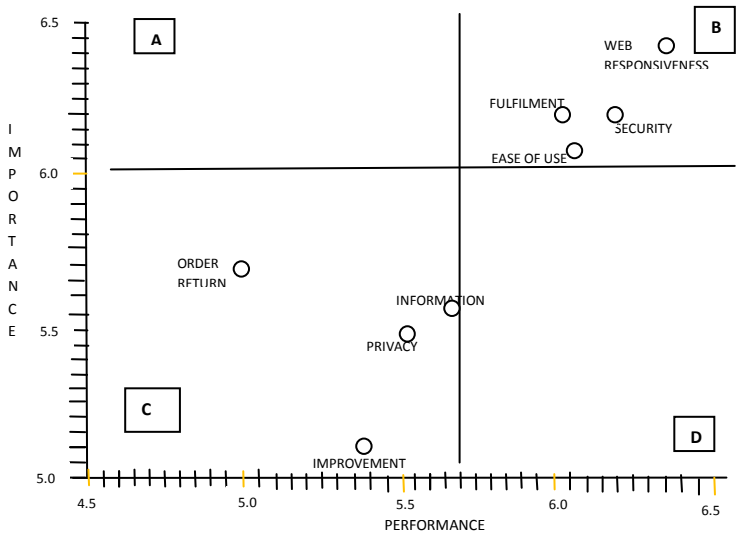
Steps 1 and 2 – determining the mean values for both Importance and Performance and conducting Paired sample *t*-Test for each items. The mean values were found to be significantly different at the level of 1 percent (t=-0.255; $p < 0.001$). The e-service quality features recording an overall mean performance score of m= 5.74, against overall importance score of m= 6.00.

Step 3 – conducting factor analysis**.** Four items were dropped from this analysis due to their low cross loadings (Hair *et al*., 2010). The results of the factor analysis, is presented in Appendix 2.

Step 4 – Paired sample *t*-Test for each factor on Importance and Performance. The results are presented in Appendix 3. In analyzing the mean value of performance versus importance, three negative values have been identified for the *FULFILLMENT, ORDER RETURN*, and *IMPROVEMENT* components. These significant negative difference could imply that the retailers' e-service quality performance is at a level much lower than the customers' perceptions of their importance. The two positive values for the *EASE OF USE* and *INFORMATION* components indicate good news for the retailers, as their performance perceived by customers exceed the importance. However, as neither of these results is significantly different, thus the impact is negligible. The neutral values for the *WEB-SITE RESPONSIVENESS, SECURITY* and *PRIVACY* components signify that there are no differences in customer perception of the components' importance and performance - the retailers address these issues very effectively.

Step 5 – Charting each factors onto the IPA matrix presented using cross-hair matrix. The matrix facilitates in identifying more clearly, between the stronger and weaker factors (O'Neill et al., 2001). Figure 2 illustrates the eight components of e-service quality that fall equally into two opposite quadrants.

Figure 2: Web Service Importance-Performance Matrix



Note: Overall Importance Mean = 6.0; Overall Performance Mean = 5.7

Four of the constructs in ***Quadrant B*** (i.e. *FULFILLMENT, EASE OF USE, SECURITY*, and *WEB RESPONSIVENESS*) were rated above average, both in terms of their importance and performance. These findings suggest that all the four constructs are performing at an appropriate '*keep up the good work*' level. However, *ORDER RETURN, IMPROVEMENT, PRIVACY* and *INFORMATION* are in ***Quadrant C***. These factors were rated as below average in both performance and importance. On the face of it, these four areas are of low priority.

5. DISCUSSION AND CONCLUSION

This study is among the first to employ the IPA, specifically focusing upon the customers views of the service quality that they receive for their online shopping. The study highlights a number of important insights into the effectiveness of retailers' current e-service quality practices.

Firstly, all the four factors positioned in Quadrant B in the IPA matrix, is in the 'ideal' desired position in the matrix. It indicates that all the four factors reflects an optimal performance, would be perceived that these elements to be performing well above average in relation to the e-services elements deemed to be important by customers. The four factors that fall into this 'comfort' area should be maintain by the online retailers, in order to ensure that they have the capabilities and abilities to deliver the best values of online shopping experience to their customers.

Secondly, Quadrant C reflects the fact that certain aspects of the e-service quality are not performing to their full potential. However, given that respondents have recorded a relatively low importance and performance ranking for all the four factors, underperformance in this area may not be so serious and can be safely ignored.

However, from the operational perspectives, it can be argued that all elements in this quadrant should be devise around their ability to meet and exceed customer expectations. In particular, the underperformance of *ORDER RETURN* and *IMPROVEMENT* should be taken seriously as prior research has demonstrated that the same order return issue can impact upon customer service quality perception and satisfaction (Jiang and Rosenbloom, 2005; Cristobal *et al.,* 2007). Furthermore, the *PRIVACY* factor as it is one of the important risky elements and major obstacles, that might lead to customer resistance for the customers to perform their online shopping (Miyazaki and Fernandez, 2001; Lee and Lin, 2005; Wolfinbarger and Gilly, 2003).

Whilst highlighting some important areas, this study is limited, as the empirical evidences and findings of this study are appropriate only to the online UK retailers study. Any generalisations to a wider population, for example, to other industries or to other countries should be done with caution due to structural, cultural, social, political or economic differences, between populations.

REFERENCES

Barnes, S.J. & Vigden, R. (2001). An Evaluation of Cyber-Bookshops: The WebQual Method. *International Journal of Electronic Commerce*, 6, 1, 11-30.

Bauer, H.H., Falk, T. & Hammerschmidt, M. (2006). eTransQual: A Transaction Process-Based Approach For Capturing Service Quality in Online Shopping. *Journal of Business Research*, 59, 499-875.

Cao, M., Zhang, Q. & Seydel, J. (2005). B2C E-Commerce Web Site Quality: an Empirical Examination. *Industrial Management & Data*, 105, 5, 645-661.

Chu, R.K.S. & Choi, T. (2000). An Importance-Performance Analysis of Hotel Selection Factors in The Hong Kong Hotel Industry: A Comparison Of Business And Leisure Travellers. *Tourism Management*, 21, 363 – 377

Cox, J. & Dale, B.G. (2002). Key Quality Factors in Web Site Design and Use: An Examination. *International Journal of Quality and Reliability Management*, 19, 7, 862-888

Cristobal, E., Flavián, C. & Guinalìu, M. (2007). Perceived E-service Quality (PeSQ): Measurement Validation and Effects on Consumer Satisfaction and Web Site Loyalty. *Managing Service Quality*, 17, 3, 317-340

Dabholkar, P.A., Thorpe, D.I. & Rentz, J.O. (1996). A measure of Service Quality for Retail Stores: Scale Davelopment and Validation. *Academy of Marketing Science*, 24, 1, 3- 16

Ekman, A., Dickman, P.W., Klint, A., Weiderpass, E. & Litton, J-E. (2006). Feasibility of Using Web-Based Questionnaires in Large Population-based Epidemiological Studies. *European Journal of Epidemiology*, 21, 103 – 111.

Ennew, C.T., Reed, G.V. & Binks, M.R. (1993). Importance-Performance Analysis and the Measurement of Service Quality. *European Journal of Marketing*, 27, 2, 59 - 70

Francis, J.E. & White, L. (2002). PIRQUAL: A Scale For Measuring Customer expectations and Perceptions Of Quality In Internet Retailing. *American Marketing Association*, 263-270.

Granello, D.H. & Wheaton, J.E. (2004). Online Data Collection. Journal *of Counselling & Development*, 82, 4, 387 - 393

Jiang, P. & Rosenbloom, B., (2005). Customer Intention To Return Online: Price Perception, Attribute-Level Performance, And Satisfaction Unfolding Over Time. *European Journal of Marketing*, 39, 1&2, 150-174

Kaynama, S.A. & Black, C.I. (2000). A Proposal to Assess the Service Quality of Online Travel Agencies: An Exploratory Study. *Journal of Professional Services Marketing*, 21, 1, 63 - 88

Jamie, (2010). Student's Online Spending Habits. The Students Room. Available at: http://insight.thestudentroom.co.uk/1n51ght/students-online-spending-habits/ Access Date: 16th April, 2012

Lee, G-G. & Lin, H-F. (2005). Customer Perceptions of E-service Quality in Online Shopping. International Journal of Retail & Distribution Management, 33,2, 161 – 176

Liu, C. & Arnett, K.P. (2000). Exploring the Factors Associated With Web Site Success In The Context of Electronic Commerce. *Information & Management*, 38, 23 - 33

Loiacono, E.T., Watson, R.T. & Goodhue, D.L. (2007). WebQual: An Instrument for Consumer Evaluation of Web Sites. *International Journal of Electronic Commerce*, 11, 3, 51-87

Long, M. & McMellon, C. (2004). Exploring the determinants of retail service quality on the Internet. *Journal of Services Marketing*, 18, 1, 78-90

Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2010). *Multivariate Data Analysis: A global Perspective*, (7th eds.), Pearson Education Inc.: Upper Saddle River, New Jersey

Martilla, J.A. & James, J.C. (1977). Importance-Performance Analysis. *Journal of Marketing*, 41, 1. 77-79

Miyazaki, A.D. & Fernandez, A. (2001). Consumer Perception of Privacy and Security Risks For Shopping. *The Journal of Consumer Affairs*, 35,1.

O'Neill, M.A. & Palmer, A. (2004). Importance-Performance Analysis: A Useful Tool For Directing Continuous Quality Improvement in Higher Education. *Quality Assurance in Education*, 12, 1, 39- 52

O'Neill, M., Wright, C. & Fitz, F. (2001). Quality Evaluation In Online Service Environments: An Application Of The Importance-Performance Measurement Technique. *Managing Service Quality*, 11, 6, 402 – 417

Ribbink, D., van Riel, A. C.R., Liljander, V. & Streukens, S. (2004). Comfort Your Online Customer: Quality, Trust And Loyalty On The Internet. *Managing Service Quality*, 14, 6, 446-456

Rigby, C. (2012). UK Shoppers Spent More Online in 2011. Internet Retailing. Available at: http://www.internetretailing.net/2012/01/uk-shoppers-spent-16-more-in-2011-imrg/, Access Date: 16th April, 2012

Santos, J. (2003). E-Service Quality: A Model of Virtual Service Quality Dimensions. *Managing Service Quality*, 13, 3, 233-246

Siu, N.Y.M. & Cheung, J,T-K. (2001). A Measure of Retail Service Quality. *Marketing Intelligence & Planning*, 19, 2, 88-96

Solomon, D.J. (2001). Conducting Web-Based Surveys, Practical Assessment Research and Evaluation, 7(19): Available at: http://ericae.net/pare/49~getvn.html, Access Date: 20th February, 2011

Parasuraman, A., Zeithaml, V.A. & Berry, L.L. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64, 1, 12 – 40

Parasuraman. A., Zeithaml, V.A. & Malhotra, A. (2005). E-S-Qual: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service Research*, 7, 3, 213-233

Tih, S. & Ennis, S. (2006). Cross Industry Analysis of Consumer Assessment Of Internet Retailers' Service Performance. *International Journal of Retail & Distribution Management*, 34, 4&5, 290-307

van Riel, A.C.R. , Semeijn, J. & Janssen, W. (2003). E-Service Quality Expectations: A Case Study. *Total Quality Management*, 14, 4, 437-450

Wearden, G. (2011). Online Shopping Hit Monthly Record in December. The Guradian. Available at: http://www.guardian.co.uk/business/2011/jan/21/online-shopping-monthly-record-december, Access Date: 16th April, 2012

Wolfinbarger, M. & Gilly, M.C. (2003). eTailQ: Dimensionalizing, Measuring and Predicting Etail Quality. *Journal of Retailing*, 79, 183-198

Yang, Z. and Jun, M. (2002). Consumer Perception on E-service Quality: From Internet Purchaser and Non-Purchaser Perspectives. *Journal of Business Strategies*, 19, 1, 19-41

Yang, Z., Peterson, R.T. & Cai, S. (2003). Service Quality Dimensions of Internet Retailing: An Exploratory Analysis. *Journal of Services Marketing*, 17, 7, 685-700

Yang, Z. & Fang, X. (2004). Online Service Quality Dimensions and Their Relationships with Satisfaction: A Content Analysis of Customer Reviews of Securities Brokerage Services. *International Journal of Service Industry Management*, 15, 3, 302 - 326

Yang, Z., Cai, S., Zhou, Z. & Zhou, N. (2005). Development and Validation Of An Instrument To Measure User Perceived Service Quality of Information Presenting Web Portals. *Information and Management*, 42, 575-589

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, 31-45