

Perceived Web Service Quality for Students' Portal in Higher Learning Institution

Noraini Nasirun¹⁺, Sarina Muhamad Noor¹, Zor Mat Nor², Hisaruddin Ahmat² and Zulaiha Ahmad¹

¹University Technology MARA, Malaysia

²University Utara Malaysia, Malaysia

Abstract. The emergence of the internet encourages organizations to introduce web portal to enhance customers' services. By having the web portals, organizations can disseminate information to reduce the barrier between them and the customers. Generally, web portals are classified as either a commercial web portal or non-commercial web portals. The majority of previous studies have focused on commercial portals, leaving those in non-commercials struggling to understand the dimensions unique to them. Hence, this study attempts to determine the dimensions that are specific to the non-commercial users. The adapted questionnaire was administered to 310 students of Higher Learning Institutions in Malaysia. Using factor analysis, the result revealed five different dimensions of service quality web portals. These dimensions are identified as Usability, Responsiveness, Accessibility, Attractiveness and Overall Satisfaction. The finding provides a very useful tool for researchers and web administrators of the non-commercial, particularly the education web portal to improve the service provided to the users.

Keywords: User Perceived Quality, Web Portal Service Quality, Student Web Portal, Non-commercial Education.

1. Introduction

Nowadays, the web portal is known as a one-stop website to get the latest updates of the organizations. The benefits gained from the websites among the commercial organization is unquestionable. However, for non-commercial organizations such as education, the perceived quality of the information presented may differ [1]. Even though it cannot be translated into monetary values, it reflects the effectiveness and efficiencies of the organizations.

The education sector in Malaysia is growing tremendously. The introduction of Strategic Planning in Higher Learning Institution is hoped to support the country vision, Vision 2020. The plan was introduced in 2009 and now it is in the second phase of its implementation [7]. One of the critical areas identified was e-learning and the infrastructure required to support the teaching and learning environment [7].

Majority of web portal studies focused on commercial setting, leaving the non-commercials, including education struggling to understand the dimensions suitable to their needs. Moreover, diverse findings were discovered in the area of education. Due to this, it is important for the industry to introduce a common dimensions to measure user perceived quality of information presented through the web portal. Therefore, the barriers and information discrepancies between organizations and users is minimized. Hence, the aimed of this study was to identify the dimensions in user perceived quality of web portal for education setting. The study will also explain the relationship between the variables constructed. The Conference is a primary international forum for scientists and technicians working on topics relating to Chemical Engineering and Applications. It will provide an excellent environment for participants to meet fellow academic professionals, to enhance communication, exchange and cooperation of most recent research, education and application on relevant fields. It will bring you new like-minded researchers, fresh idea. It also provides a friendly platform for academic and application professionals from crossing fields to communication together.

2. Literature Reviews

⁺ Corresponding author. Tel.: + 604-9882000; fax: +604-9882526.
E-mail address: noraini305@perlis.uitm.edu.my.

High quality web portals are very important to the commercial and the non-commercial organizations. However, many service providers develop the portal from the administrator's or designer's perspective, ignoring the feeling and expectations of the users [8]. Most of the past literatures focused more on commercial setting as compared to the non-commercial setting [1]. In addition, the discussion was centered towards the web performance rather than the customer service quality [4]. Hence, the study in this area is important to create more insight to the decision makers in preparing a high quality portals that fulfill the needs of the customers.

Previous studies highlighted the challenges in identifying the dimensions of service quality for web portals. Generally, the challenges were classified into three main areas namely complexity of web-based information systems, diversity of web user types and variation of the web user profile [4]. Even though all dimensions of quality are met, it does not guarantee that the users will use the system unless they are convinced that the systems will provide benefits to them [9].

Various studies were conducted to determine factors that influence the usage of the information systems and web portals. Habit, perceived usefulness and perceived playfulness had significant relationship with intention to use the portal [8]. In a study conducted in Turkey, it was found that perceived playfulness influence perceived ease of use and behavioral intention among customers of online retail shopping [10]. Meanwhile, trust is the antecedent of perceived risk and technology is the antecedent of perceived ease of use, and these variables directly influenced the attitude towards purchasing online [11]. Since online shopping involved fund transaction, security and privacy are also identified as the major determinants of the online purchase [5].

In contrary, different determinants of the system usage are applicable to non-commercial settings. A study in tertiary education showed that instructors' role, accessibility and design of the systems influence the respondents' attitude [12]. Perceived ease of use was also found to have a significant relationship with the adoption of the technology [9]. However, further results from the study indicated that the respondents perceived benefits increased only when they adopt the technology that they understood [9].

In addition, the quality aspects of the systems and web portals must be measured continuously to ensure users satisfaction. Variables such as usability, playfulness, design and support service were known to influence users' satisfaction [13]. Previous study also revealed that information quality, ease of navigations, interactive communications, completeness, technical adequacy, privacy and security, had a relationship with the service quality of the information presented in the website [1]. Until now, various scales had been developed to measure the quality of web services based on user perceptions such as E-SELFQUAL [9], E-S-QUAL [10] and web information presenting in the web portal [1]. However, the majority of the scholars focused on commercial setting thus creating the need to develop the new integrated dimension more suitable in the non-commercial context, particularly for the tertiary level of educations.

3. Research Methodology

The study was conducted among public university's undergraduate students located in the northern region of Peninsular Malaysia. The students were sophomores who have had experience in using student web portal to communicate with the university.

The measurement was adapted from Yang, Chai, Zhou & Zhou [1] and was self-administered to 330 students. From 310 returned questionnaires only 307 were usable for further analysis. The questionnaires consisted of 47 items. All items were measured by using a 5-point Likert scales ranging from '1' as strongly agree to '5' being 'strongly disagree'. The data were analyzed using SPSS 17.0 Windows Software program. Factor analysis and cronbach alpha were employed to test the validity and reliability of the model.

4. Results and Discussions

The measurements used for this study consist of eight dimensions which are information quality, ease of navigations, interactive communications, completeness, technical adequacy, privacy and security, overall service quality and overall satisfaction towards the web portals. Pearson Coefficient matrix was scanned to check for consistent patterns of variability between the variables. Those with loading of less than 0.5 and those with cross loading were deleted. The values among the correlation coefficients were also scanned to

detect multicollinearity problem. In this study, the majority of the correlation coefficients is significant and the values are smaller than 0.9.

In Table 1 (Appendix 1a), a Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of 0.940 indicates sufficient inter correlations while the Bartlett's Test of Sphericity appears significant (Chi square= 7129.857, p = .000). A factor analysis with Varimax rotation was conducted to validate whether the respondents perceived the constructs as distinct. The results discover a five factor solution with eigenvalues greater than 1.0 and the total variance explained was 61.283% of the total variance. Table 1 shows that result of the factor analysis and reliability test. These results prove that each of these constructs is one-dimensional and factorially distinct. Five factors emerge from the original eight dimensions as suggested by Yang et al. [1]. These are Usability (Factor1), Responsiveness (Factor 2), Accessibility (Factor 3), Attractiveness (Factor 4) and Overall Satisfaction (Factor 5). Alpha values for all factors are above .85.

Appendix 1a

Table 1: Results of the factor analysis and reliability test

Factors	Factor Loading	Total Variance Explain (%)	α
Usability		15.226	.900
Relevant information to the customers	.558		
Up-to-date information	.612		
Customized information presentation	.694		
Valuable tips on services	.671		
Uniqueness of the content	.609		
Clear and well-organized content	.642		
Customized search function	.703		
Ease of finding desired information	.675		
Search facilities	.622		
Responsiveness		13.575	.904
Quick responsive to users	.675		
Empathy to users problem	.741		
Follow-up services to users	.691		
Feedback between the organizations and users	.741		
Assurance to solve users problem	.746		
High speed of accessing the web	.549		
High speed of page loading	.582		
Accessibility		11.883	.911
Proper use of fonts	.795		
Proper use of colors	.843		
Proper use of multimedia	.795		
Proper use of graphic	.772		
Accessibility of the site	.504		
Attractiveness		9.122	.852
Complete service description	.630		
Complete content	.570		
Sufficient information for existing users	.529		
Confidentiality for users information	.634		
Adequacy of security features	.691		
Overall Satisfaction		11.478	0.892
Overall, the services provided by the website have excellent quality	.703		
Services quality provided by the website match my expectation	.733		
The website's service offering are very beneficial	.731		
All in all, I am very satisfied the website's services	.750		
The website can largely fulfill my needs at this stage	.665		
Percentage Variance Explained		61.283	

Factor 1 combines items related to the quality of information and ease of navigation. Following AL Zaghoul, AL Nsour, & Rababah [3] the dimension is labeled as usability. The second factor combines items related to interactive communication between the system providers and the user. These items are similar to the definition of responsiveness. Responsiveness was defined as the ability of the system to serve consistently and accurately [4]. Another definition of responsiveness provides by previous scholar was the willingness to help customers and provide prompt service [6]. As for the result of the third factor, all items present the element of technical adequacy which is related to accessibility. Accessibility was defined as the quick access to the site and the organization when needed [4]. The fourth factor combines completeness of the information, privacy and security items. This combination is similar with attractiveness, which refers to the ability of the website to attract the users to use the system [14]. Finally, overall service quality and overall satisfaction was regrouped into user perceived of quality towards the overall performance of the website.

Appendix 1b

Table 2: Correlations between factors

<i>R</i>	1	2	3	4	5
Usability (1)	1				
Responsiveness (2)	.640**	1			
Accessability (3)	.525**	.496**	1		
Attractiveness (4)	.667**	.682**	.588**	1	
Overall Sat (5)	.620**	.643**	.555**	.597**	1

** p < 0.01

Table 2 (Appendix 1b) presents results for Pearson Correlations. The results indicate that all factors have positive significant correlations with each variable, p-value < 0.01. Usability has a significant positive correlation with Overall Satisfaction which suggests that when the organization provides quality website and ease of use, the user will feel satisfied with the website. This finding aligns with previous research conducted by Yang *et al.* [1], where usability had a positive impact toward user satisfaction. Previous scholars also reported that information quality and system quality influenced the overall learner satisfaction in e-learning system [2].

Responsiveness shows a significant positive correlation with Overall Satisfaction. The result shows that if the system is able to provide services consistently and adequately, it enhances the satisfaction level among the users. Previous studies [5;6] suggested that dimensions related with communication and support positively influence consumers' perception in the retail industry as well as education. Hence, responsiveness are known as one of the major factors that increase customer satisfaction.

Accessability also reveals a significant correlation with Overall Satisfaction. This dimension represents items related to technical usage of the website such as high speed of page loading. Previously, Yang *et al.* [1] displayed the dimension of accessability and adequacy of information as two dimensions. However, both variables had a significant positive influence towards customer satisfaction of the information presented in the websites.

Attractiveness reports similar result. It is significantly correlated with overall satisfaction. Security and privacy are known as the important factors in the commercial setting as it involves the monetary transactions, thus attracted the users to use the system [5]. Attractiveness of the design such as 'media-rich' contents also able to increase the click-through rates in internet advertising among teenagers [14]. In the non-commercial setting, the dimensions of security and privacy are related to securing personal information such as e-mail [6]. The findings clearly support the previous results, where attractiveness is able to attract the users to use the websites, as well as to develop trust and confidence among them.

5. Conclusions

This study investigates the dimensions of web service quality in educational settings. Factor analysis reveals five dimensions which differ from the original dimensions used by Yang *et al.* [1]. The dimensions of usability, responsiveness, accessability and attractiveness are significantly correlated with overall customers' satisfaction of the web service. The results enhance the knowledge of website quality by proposing a new

integrated dimension which is more suitable in the non-commercial context. Managers and administrators are advised to consider these dimensions in their quest to provide better services. It is suggested that future study uses these dimensions in the other non-commercial organizations so that its applicability can be further tested.

6. References

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