

## Evaluating E-commerce Site on WEB QUAL Dimension



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As per the report published by Admitad, e-commerce market of India is going to touch \$52 billion by 2022 which is amounted \$25 billion in 2017. This growth is lead by the presence of successful e-commerce companies in the country. Websites play the most important role in the success of any e-commerce company. This paper is an attempt to find the effectiveness of websites and customer preference on the usability of the websites. In addition, this paper will help in the finding of the usability problems of an e-commerce website. So it's very important for e-commerce companies to maintain a standard and easy usability in their website service. The research suggested WEB QUAL as a tool for evaluating the problem areas in their specific site. Further e-commerce start-ups in the e-commerce industry will get an idea about how to enter the e-commerce market with an effective site and existing firm can develop them self in the parameter they are lacking.

**Keywords:** e-commerce, WEB QUAL, start-ups, usability, effectiveness, customer preference.

### Introduction

Growing use of the internet as a great source for rising organization's sales and capturing large market has lead to increasing the number of websites. As per sleeknote.com 21.8% of the World's population buys online, and in 2021, the number is expected to rise to over 2.14 billion. In other words website of an e commerce company plays an important role in its revenue generation. The website is the cost effective source of communication between buyer and sellers and a good quality of website conveys lots about the business. If people finds site is presenting all the products or services are well planned they feel like staying, shopping and repurchasing from that site only. So, a website needs to have some characteristics such as easy to use, read and crawl for making more business. For instance, Internet Bookshop, a UK based company established in 1994 but failed to make a significant presence in the market but in the same year Amazon has came and became a major market player in e-commerce industry. A website with effective WEBQUAL dimensions has played most important role in its rising. In addition, it should have all the necessary web solutions such as shopping cart, payment gateway, merchant accounts online etc.

**WEBQUAL:** THE WebQual scale has been first developed by Lociacono et al. (2002) which made out of 12 dimensions. Barnes and Vidgen(2002), by the same

name developed a scale to measure the website quality. This scale is based on three factors: usability, information quality and service interaction quality [1]. As noted by Liang and Lai (2002) web site quality has a positive correlation with the likelihood of customers visiting and transacting at web sites. To be successful in the e-market firms need a way of assessing the quality of their website that which factor influence the customer most, improving competitiveness which help to increase the revenue [2]. In this research, we have taken 12 dimensions of the WebQual to evaluate the quality of the websites. The 12 dimensions are: Informational fit-to-task, Tailored communications, Trust, Response time, Ease of understanding, Intuitive operations, Visual Appeal, innovativeness, Emotional Appeal, Consistent Image, On-line Completeness and Relative Advantage. The WebQual scale is develop to help the web service providers to better design the websites.

### Review Of Literature

Sandeep Kumar panda, Santosh Kumar swain and Rajib Mall (2015) conducted a research "An Investigation into Usability Aspects of E-Commerce Websites Using Users' Preferences" Research explains the priority or preference of the user's usability of the websites. In the research they investigate the usability of ten e-commerce websites using the design features and calculated the usability value for each website. The

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website that were investigate for evaluation which include first - Navigation, Second - Content, Third - Design, Forth - Ease of use and the least Important features - structure. In this research they find out that structure is the least important features not only deals with the CD e-retailing, and food and drink websites but also affecting the e-commerce websites. The outcome from this research helps the founder of the websites to go for further development on the functioning style of their websites.

Ninyoman Swawitri, Teddy Oswaei and ErniHastuti (2017) conducted a research "Analysis of WebQual Usefulness, Information Quality and Interaction service in Cultural Sites Online" in this research it investigated the difference of respondent's profile in culture sites online and whether there are influenced from WebQual dimensions. It is founded in the research that there is no significant difference of respondent profile namely: gender, and respondents' levels. The result shows that the difference is very low. The intensity of visits was not influencing by the Three WebQual dimensions: usefulness, information quality, and interaction service. While at the intensity of visits was influenced by the three dimensions which can be seen from WebQual significant.

Layla Hasan, Anne Morris and Steve Proberts (2009) has develop a framework or specific web matrix to identify specific usability problems of e commerce web sites cheaply and quickly by complete understanding on the advantages or disadvantages of the various usability methods. For some cases the matrix is useful to identify problems involves in specific pages although it's not possible for every time. Researchers have suggested thirteen metrics that is useful to identify the potential problems may be occurred and provide a continual overview or of a site's usability. But to get more deep information other than just identifying the problems, other usability techniques such as heuristic evaluation are needed. Heuristic evaluators also has some draw backs such as it can't provide information regarding the financial performance of the site in terms of its ability to generate revenue but it is possible through web matrix.

Layla Hasa and Emad Abuelrub (2008) have underlined evaluation methods in evaluating the quality of different websites. In addition, they are also able construct a comprehensive framework for evaluating the quality of any website of the different type of offered services. The dimensions for the framework are design quality, content quality, organization quality, and user-friendly quality. Dimension uses in the framework are capable of finding reliability of website domains such as banking,

commerce, business, education, government, and others.

### Aims and Objectives :

The purpose of this paper is to explain the use of WEBQUAL for evaluating the usability of e-commerce web sites.

The objectives are :

- To develop important dimensions of the WEBQUAL for evaluating the quality of e-commerce websites.
- To identify the relative importance of the WEBQUAL dimensions in quality of website.

### Methodology

This study titled Evaluating the Quality of E-commerce Site on WEB QUAL Dimension is based on descriptive research design methodology. Targeted sample units are of different age group and gender considering an online shopper and have a favourite website respectively. Snow ball sampling technique was followed for identification of targeted sample. The study is based on both primary and secondary data related to the analysis of evaluating e commerce web site on Web Qual dimensions. The method of collecting data used to obtain the relevant information from primary sources has been through the filling of goggle doc. from 265 respondents. As a secondary source we have gone through various research papers for review of the literature. We have used SPSS tool for finding out the reliability of factors that we have used in our questioner. In addition, Factor analysis has been done to find out the important dimensions to evaluate the quality of a website.

### Results And Analysis

**Table 1 in the below has shown the reliability of the factors that we have use in the research work.**

**Table 1: Reliability Statistics**

Cronbach's Alpha	N of Items
.905	12

905 > .6, i.e we are using a reliable scale in the research.

Table 2 depicts that 66.139% of the variance is explained by 3 factors. 12 dimensions taken earlier are now reduced to 3 dimensions/factors. The table also depicts that 48.413% of the variance is explained by the first factor, 9.391% of the variance is explained by the 2<sup>nd</sup> factor and 8.335% of variance is explained by the 3<sup>rd</sup> factor.

Table 2 : Total Variance Explained<sup>a</sup>

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.810	48.413	48.413	5.810	48.413	48.413	3.187	26.561	26.561
2	1.127	9.391	57.804	1.127	9.391	57.804	2.456	20.468	47.028
3	1.000	8.335	66.139	1.000	8.335	66.139	2.293	19.111	66.139
4	.763	6.357	72.496						
5	.667	5.554	78.050						
6	.533	4.439	82.489						
7	.471	3.929	86.418						
8	.429	3.572	89.990						
9	.370	3.083	93.072						
10	.337	2.806	95.879						
11	.263	2.191	98.069						
12	.232	1.931	100.000						

Following Table 3 has depicted the variables loads of all the dimensions in the specific three factors.

Table 3: Rotated Component Matrix<sup>a,b</sup>

	Component		
	1	2	3
Informational Fit-to-Task	.615	.153	.281
Tailored Communications	.495	.363	.292
Trust	.464	.566	.047
Response time	.685	.471	.015
Ease of Understanding	.813	.149	.199
Intuitive Operations	.787	.133	.278
Visual Appeal	.572	.396	.271
Innovativeness	.238	.703	.369
Emotional Appeal	.180	.860	.165
Consistent Image	.138	.459	.723
On-Line Completeness	.299	-.037	.855
Relative Advantage	.275	.340	.720

Table 4 : Dimensions for Evaluating E-commerce Site

S. No	Factor Name	Eigen Value	Variable Load	Total Variance
<b>1</b>	<b>Usability</b>	<b>5.810</b>		<b>48.413%</b>
1.1	Informational fit-to-task		0.615	
1.2	Tailored Communications		0.495	
1.3	Response Time		0.685	
1.4	Ease of Understanding		0.813	
1.5	Intuitive Operations		0.787	
1.6	Visual Appeal		0.572	
<b>2</b>	<b>Service Interaction Quality</b>	<b>1.127</b>		<b>9.391%</b>
2.1	Trust		0.566	
2.2	Innovativeness		0.703	
2.3	Emotional Appeal		0.860	
<b>3</b>	<b>Complementary Relationship</b>	<b>1.000</b>		<b>8.335%</b>
3.1	Consistent Image		0.723	
3.2	Online completeness		0.855	
3.3	Relative Advantage		0.720	

The factor analysis of the result of WEBQUAL (table 4) led to the identification of three dimensions of e-commerce websites quality: Usability, Service Interaction Quality and Complementary Relationship. The factor which is most valued by the customers while use to purchase online is named as *Usability* of a website and **48.413%** of the variance is caused because of this factor. The variables such as **Informational fit-to-task, Tailored Communications, Response Time, Ease of Understanding**, Intuitive Operations and Visual Appeal of the website included in usability factor. Understanding the site is the most important factor (.813 variable loads) to define usability of a site. The next factor which has high variance is **Service Interaction Quality with the variance of 9.391%** as the customer look for trust worthiness, Innovativeness and emotional appeal of the website while selecting a website for online shopping. Within this factor, customers focus more on having an emotional appeal (**0.860 variable loads**) in the website as the **Interaction Quality with the variance**. The third factor which accounts for **8.335%** of the variance as **Complementary Relationship** where the customer is concerned about the Consistent Image, Online Completeness and Relative Advantage involved in a particular website. Online completeness (.855 variable loads) plays the most important role in making a complementary relationship with the customers.

#### Recommendations

- For an effective e-commerce website one need to give more focus on features such as usability, Service Interaction Quality and Complementary Relationship.
- Design of page needs to be simple enough in respect of customer's understanding.
- Emotional appeal needs to be maintained by providing a positive customer experience while using the website.
- It is necessary to have a secure online payment option in the website.

#### Conclusion

This research work identified the specific factors or dimensions that are most important to evaluate the quality of a website i.e. Usability, Service Interaction Quality and Complementary Relationship. Based on the user's responses related to what features they liked most about the website they visit frequently. We have find the quality of eight websites on the basis of WEBQUAL dimensions. The outcome of this research identified the strength and weaknesses of eight e-commerce websites. Organization involving with the websites can go further developments on the

functioning style of their websites in the coming future. However, the research work has limitation is that we have used the user testing method only though questionnaire for evaluating the eight e-commerce websites without using the Heuristic testing and tool based testing.

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