

Strategic Analysis of Website Design - An Exploratory Study of Viewers' Expectations

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Abstract

Objective: This paper attempts to investigate the impact of demographic factors (age and gender) on designing of an effective website. Four factors influencing website designing i.e. navigation quality, information quality, interactivity and visual representation are studied in particular. **Method:** A survey using electronic media was conducted. Convenience sampling method was used and total of 340 responses were obtained. The data is analysed using two ways ANOVA. **Findings:** Age has a significant impact on website designing factors. Youth look for high and quality information in a website while middle and old aged people prefer easy accessibility and navigation quality. Our findings also claim that visual appeal and product picture quality attracts female more than male. This paper can provide valuable insight to website designers and can help them in customizing the website as per its target audience. Developing the websites is one of the most visible activities of the organizations on the internet. There are innumerable literature and researches on website designing but minimal focus is given on designing a website as per target audience.

Keywords: Age, Gender, Information Quality, Interactivity, Navigation, Visual Representation, Website Design

1. Introduction

With the increase in number of internet users, e-commerce is witnessing a remarkable growth in India. A large number of online retail stores enter the market on daily basis on account of its low setup cost. Consumers are getting opportunity to compare and shop from seemingly infinite number of online stores at the same time because of no travelling cost and minimal switch over costs. It signifies increased competition among the online retailers. In order to succeed in this dog-eat-dog market scenario, e-retailers not only need to comprehend the factors that contribute to effective website design but also designing their websites as per target audience. This paper attempts to understand what people of different age group and gender prefer in a website.

As per Wakefield et al.¹ the success of retail website is determined by the extent to which the design of the websites creates a positive experience among consumers and help them to accomplish their consumption goals. As per researchers, success of website design is determined by four design elements namely Visual design, transactional

design, information content and navigation²⁻⁴. The above mentioned design elements attracts customer satisfaction and leads to purchase intention and customer locality⁵.⁶. This paper investigates preferences of consumers of different age group on a website.

1.1 Information Quality

Information design deals with the way information is organized on the site. Information about the firm, products and services offered, various promotional offers, contact information etc are essential part of a website. The prime reason that the consumers visit websites is to look for information related to price, product and promotions⁷. Consumers not only search for information on the website but also evaluate whether the information available is good and useful. According to Kim and Niehm⁷, websites that provide valuable information are more effective in attracting, retaining and stimulating consumers. Shankar et al.⁸ found that ease of obtaining information and depth of information at the website has a significant positive influence on overall consumer's satisfaction. Montoya-Weiss

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et al.⁹ claimed that information content of the website exerts stronger effect on consumer's satisfaction as compared to navigation design or visual representation. Researchers have also claimed that adequate and accurate information on the website develops positive attitude among consumers and increases consumer's satisfaction⁹⁻¹¹.

1.2 Navigation

Navigation design refers to the interaction component of the website design and refers to the text and graphic links between pages that indicate sequencing between web pages. A website should provide clearly linked paths and easy to follow links so that users can comfortably navigate and find the accurate information they desire. As claimed by McKinney et al.¹² "no matter how thorough the information content of a site is, a consumer who has difficulty in searching and getting the needed information is likely to leave the site". According to Nielson¹³ navigation design should inform consumers about his present position on the website, from where he has come and can go on the website. A proper navigation design influence consumer's perceived ease of use¹⁴ and positively impacts his overall satisfaction with the website⁹. A good navigation design makes it easy for consumers to understand the website and use it more comfortably. This further brings good experience and consumer's satisfaction¹⁰.

1.3 Visual Representation

A website presentation consists of links, texts, images, animations and audio/visual elements. It is a place to convey important messages to web users. The color, text, style and graphics creates overall visual impression of the website. Various researchers in the past have claimed that visual appeal of a website is one of the most influential factors that impacts consumer's attitude towards the website^{10,15}. Szymanski and Hise¹⁵ claimed that website design has a more prominent role in consumer's satisfaction than greater breadth of product offerings.

1.4 Interactivity

Interactivity determines the communication flow between web users and the virtual company. In the words of Park and Kim¹⁶ interaction represents the way the user can surf the web pages with maximum ease. He claimed that interaction between the shopping websites and the consumers, has a significant influence on consumer's perception about the website. Zhao and Dholakia¹⁷ has

identified eight features of website interactivity that includes keyword search, personalization, customer feedback and has claimed that all the eight features has significant impact on consumer's satisfaction. Rafaeli and Sudweeks¹⁸ and Liu and Shrum¹⁹ have also identified a significant relationship between website interactivity and consumer satisfaction.

2. Material and Method

2.1 Hypothesis Development

2.1.1 Age

Sabnavis²⁰ identified three different types of consumer generations in India. He claimed that each type of consumer exhibit a different purchase behavior. It has been claimed that young consumers have high internet adoption rate²¹. On the contrary some researchers claim that there exists a positive relationship between age and online purchase intention, that is online consumers are either middle aged or older consumers who are financially more mature²²⁻²⁶. As there is a variation in the age group of consumers who shop online, it is important to understand the impact of age on factors influencing website design. Also impact of age on consumer's online purchase intention indirectly indicates its influence on factors influencing website designing.

According to Barak and Gould²⁷, younger consumers are fond of stylish products and seek for more information than older ones. It makes them self-confident and they are more likely to be opinion leaders. The youth which is more pragmatic, opportunistic, informed, restless and demanding always seek excitement in products and services²⁸. On the other side elderly consumers are selectively innovative and they accept only those innovations that provide exclusive benefits²⁹. Age can be the delicate variables in the consumer behavior process³⁰.

H1: The importance of website designing factors varies among different age group.

H1a: Interactivity

H1b: Navigation

H1c: Visual Representation

H1d: Information Quality

2.1.2 Gender

Impact of gender on website usability³¹ and information

technology acceptance^{32,33} has already been claimed by various researchers. In the words of Dittmar et al.³⁴, men attitude remains almost the same in both conventional and online shopping environment while women exhibit a less favorable attitude towards online shopping. Various researchers have attempted to put an explanation to this. Zhao et al.³⁵ and Swaminathan et al.³⁶ suggested that there exists a difference in shopping orientation of men and women. Men look for convenience in shopping while women are motivated by social interaction and emotions. Dittmar et al.³⁴ also claimed that lack of face to face interaction defer women from shopping online. It has also been claimed by several researchers that women have high level of web apprehensions because of which they are more skeptical about online shopping than traditional shopping^{37,33}. Similar findings have been seen by researchers who used technology acceptance model to study gender difference in e-commerce. They claimed that there is a significant difference in the way men and women perceive ease of use and usefulness of the technology. It may be inferred that men are more risk averse and comfortable with the technology and hence are more inclined towards online shopping than female³⁸.

H2: The importance of website designing factors varies between male and female consumers

H2a: Interactivity

H2b: Navigation

H2c: Visual representation

H2d: Information Quality

H3: Age and Gender has significant impact on factors influencing website design

H3a: Interactivity

H3b: Navigation

H3c: Visual representation

H3d: Information Quality

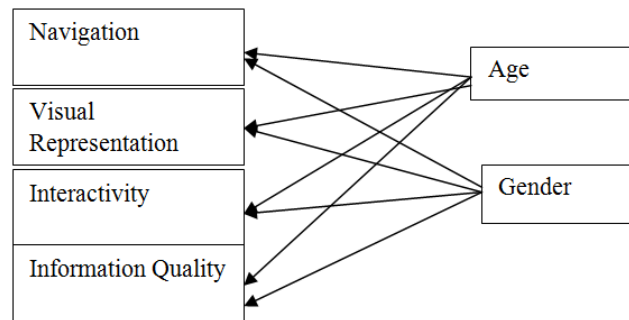


Figure 1. Research framework (Authors' compilation).

2.1.3 Instrument Development and Data Collection

The questionnaire for this study was divided into two parts. First part comprises of 12 items to measure different factors of an effective website while second part consists items to measure demographic profile of the respondents that is age, gender, income and education. Items in the questionnaire were adopted from previous studies and some of them were modified to meet the need of the study. Items used in the study are mentioned in table (I).

Table 1. Item description and Reliability test

Factor	Item Description	Source	Cronbach's Alpha
Interactivity	The site should be easy to learn to operate.	Barnes and Vidgen, ⁴⁰	.902
	My interaction with the site should be clear and understandable.		
	The site should be easy to navigate.		
Visual representation	The web site should be visually pleasing.	Loiacono et al., 2002	.868
	The website should displays visually pleasing design.		
	The website is visually appealing.		
Navigation quality	The website should allow me to interact with it to receive tailored information.	Loiacono et al., 2002	.811
	The website should have interactive features, which help me accomplish my task.		
	I can interact with the website in order to get information tailored to my specific needs.		
Information quality	The website should provide accurate information	Barnes and Vidgen, ⁴⁰	.927
	The website should provide detailed information.		
	The website should provide timely and relevant information.		

Data for this study was collected with the help of an online survey website. The survey was open during August 2015 to October 2015. Using convenience sampling method responses were collected from major cities in India like Jamshedpur, Dhanbad, Delhi, Mumbai and Nagpur. These cities were selected for the reason that they are among the major cities in Eastern, Northern, Western and Central regions of India respectively 387 responses were collected which were sorted and filtered to remove incomplete responses. A total of 340 responses were then selected for final analysis. Descriptive statistics of the respondents is mentioned in table (II).

Table 2. Descriptive analysis

Age group	Male	Female	Total
18-30	89 (26.17%)	67(19.7%)	156(45.8%)
30-50	62(18.2%)	61(17.9%)	123(36.17%)
Above 50	40(11.7%)	21(6.17%)	61(17.9%)
total	191(35%)	149(43.8%)	340

3. Result and Discussion

3.1 Data Analysis

The prime objective of this study was to identify the factors that people of different age group and gender considers important for an effective website. The study identifies both independent effect of age and gender and also their combined effect on different factors that makes a website successful. In order to meet the objective 2 way ANOVA was used on SPSS 19.

First step of data analysis was to conduct a reliability test. As mentioned in table (II) Cronbach Alpha for each factor is above 0.8 indicating a reliable data.

The ANOVA test has an underlying assumption that there should not be homogeneity of variance in the data. Levene's test was conducted to confirm the assumption. Results of Levene's test indicated that homogeneity of variance is not significant ($p > 0.05$) for all the four factors indicating that population variance for each group are approximately equal. 2- way ANOVA was then conducted.

The output of 2- way ANOVA thus obtained is mentioned in table (III). The result indicates that the age has significant impact on all the four factors ($p < 0.05$) that is interactivity, navigation, visual representation and information quality indicating acceptance of hypothesis H1a, h1b, H1c and H1d. It can be inferred by analyzing the mean values that consumers of age group above 50 prefer those websites that has a very good navigation quality (4.02), while those in age group 30-50 prefer interactivity (4.06) while young consumers prefer websites that can provide accurate and relevant information (4.4).

Results also indicated that there is no difference in perception of interactivity and navigation of a website on the basis of gender, ($p > 0.05$) and thus we do not enough evidence to support the hypotheses H2a and H2b. Whereas there is a significant impact of gender on factor visual representation and information quality, ($p < 0.05$) thus supporting hypothesis H2c and h2d. Also results indicate that combine effect of age and gender can be seen only on one factor that is visual representation ($p < 0.05$), supporting hypothesis H3c. There is no impact of combined effect of age and gender on interactivity, navigation and information quality thus rejecting hypothesis H3a, H3b and H3d. It can be inferred by analyzing the mean values that female are more attracted by visual representation of the website and aged females

Table 3. Two ways ANOVA

Factor	Source	Sum of squares	Mean of squares	F	Sig
Interactivity	Age	12.687	6.343	8.274	.000
	Gender	.484	.484	.631	.428
	Age*Gender	1.000	.500	.652	.522
navigation	Age	17.153	8.577	9.993	.000
	Gender	.027	.027	.031	.861
	Age*Gender	.061	.030	.035	.965
Visual representation	Age	40.051	20.025	39.438	.000
	Gender	92.648	92.648	182.459	.000
	Age*Gender	23.413	11.706	23.054	.000
Information Quality	Age	53.919	26.959	41.143	.000
	Gender	69.056	69.056	105.388	.000
	Age*Gender	2.948	1.474	2.249	.107

Table 4. Mean and Standard Deviation (SD)

		Above 50		30-50		18-30	
Factors		Mean	SD	Mean	SD	Mean	SD
Interactivity	Male	3.5337	1.01634	4.0081	.57611	3.7250	.99968
	Female	3.7612	.97452	4.1148	.64803	3.6429	.95056
	Total	3.6314	1.00179	4.0610	.61266	3.6967	.97587
Navigation	Male	4.0393	.83334	4.0565	.81031	3.4000	1.03280
	Female	4.0000	1.02247	4.0082	.91055	3.4286	1.12122
	Total	4.0224	.91641	4.0325	.85828	3.4098	1.05478
Visual representation	Male	3.7625	.59901	3.6855	.56709	2.5225	.88520
	Female	4.8095	.40237	4.3279	.71230	4.3209	.71085
	Total	4.1230	.73403	4.0041	.71717	3.2949	1.20733
Information Quality	Male	3.0337	.75302	3.4194	.98010	4.2250	1.01242
	Female	3.9925	.90241	4.6967	.52661	5.0000	.00000
	Total	3.4455	.94626	4.0528	1.01386	4.4918	.89672

are more attracted towards visual representation of the websites than that of younger female. Also male in their old age prefer sites with higher visual representation as compared to young males.

3.2 Discussion

Researches in the past have focused primarily on effective website designing^{39,40} but this paper attempts to comprehend the website designing as per its target audience. The study also attempts to investigate the impact of age and gender on factors influencing website designing. This information may be pivotal and facilitate the website designers to customize the websites as per target audience.

The findings of this paper indicate that consumers look for all the four factors under study that is navigation, visual representation, interactivity and information quality in a website. However, demographic profile determines the factor of utmost importance among them. The findings reveal that age has a significant impact on all the factors. The Young people prefer websites that provide them with maximum, timely and accurate information. The findings are in accordance with Barak and Gould²⁷ that says young consumers seek more information than older ones. The Consumers in their middle and old age prefer sites that are easy to operate and navigate. The Ease in operation is a prime concern for old aged consumer group. This led to implications that the sites that are most frequently and commonly accessed by young generation

e.g. job portals, matrimonial sites, and site selling fashion products or trendy electronic gadgets should be very keen in providing accurate information about its products. The websites that are particularly or majorly accessed by middle aged group like business websites, site selling property or health insurance etc should have a very good interactivity. Similarly sites selling medicines, astrology or travel packages which has a huge old age target base should be very easy to operate and good at visual representation. Although a good website should comprises of all the above mentioned four factors to be more popular yet it can distinguish itself by getting expertise in one factor as per target customer base.

The paper also attempts to find the impact of gender on website designing. The result reveals clearly that the gender impacts only two factors that is visual representation and information quality. The Females are more attracted towards pictures while males look for quality in information. This implies that the website selling female products like women fashion, cookeries, home décor etc should be visually appealing. They should have good picture quality that can be enlarged easily while the sites for men fashion, electronic gadgets etc should have detailed product description.

On investigating the combined effect of age and gender, the study could find only one factor that is visual representation. People with growing age particularly females are more fascinated by a good visual appeal of the websites.

4. Conclusion

This paper attempts to investigate the impact of demographic factors (age and gender) on designing an effective website. The findings reveals that youth look for high and quality information in a website while middle and old aged people prefer easy accessibility and navigation quality. Similarly male prefer websites that provides high and accurate information while female are more attracted towards visual representation of the website. A website designer therefore can enhance its click rates to many folds by emphasizing on the requirements of its target audience.

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