

UNIVERSITY OFFICIAL WEBSITE AS INFORMATION SOURCE: MEASURING INFORMATION AND WEBSITE DESIGN QUALITY, AND USER SATISFACTION

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ABSTRACT

Information and website design quality are two relevant aspects when considering a successful website. This study was anchored on Uses and Gratifications theory to evaluate the information quality (accuracy, completeness and currency); and website design quality (accessibility, usability and satisfaction) of three private universities in Delta state and how they affect user's satisfaction. Survey research method with questionnaire as instrument for data collection was used to purposively sample 250 students out of 13, 975 total population of Edwin Clark University, Novena University and Western Delta University students. Data generated was analysed with SPSS version 16. The study found that users were generally not satisfied with the information on the universities' website based on their currency and completeness quality; however, they were satisfied with the accuracy of the information. On the other way, the websites were very accessible and usable, but did not translate to users' satisfaction with the websites. The implication is that information quality is key in determining website user satisfaction. The study therefore recommended that universities should always provide detailed and updated information on their websites.

Keywords: Information Quality, Website quality, User Satisfaction, Private Universities, Delta State.

INTRODUCTION

The emergence of the internet as a medium of mass communication has "brought a great competition to the world of conventional media, like radio, television, newspaper and magazine among others and has affected access to information and media use" (Ezeh, Chukwuma &

Okanume, 2017). Website which is essentially the ‘face’ of the internet is becoming increasingly popular as one of the technological instruments that educational institutions can use to share academic and corporate profiles with the global community (Cratiquit, 2021). A school website can be seen as a window to the school, serving as a prime location for public advocacy and information for staff and both existing and prospective parents (Lu, 2017); providing not only information but can market the institution and services they render online. An institution website is not only important to students who make decisions that will have significant impact on their career, earnings, and professional development based on the information from the website; but also important to the school who depend upon the students’ tuition revenue to operate and run the school (Schimmel, Motley, Racic, Marco & Eschenfelder 2022).

With the proliferation of private universities in Nigeria which brought about competitive and rivalry educational environment, scrambling for new admission is the order of the day. It has become imperative for institutions especially privately established institutions in Nigeria to provide quality website and information that will help them create positive image and identity which can translate to more students’ enrollment. This is because website is seen as a marketing strategy to attract prospective admission seekers as well as a means of improving services for its users and improving their decision making. Such websites reflect the institution belief, intentions and strategies to communication and collaborate with parents.

Website user and information system need to interact in order to accomplish a specific goal. Therefore, evaluation of a website has to take into account, the information on the website, the website itself and user satisfaction. It is on this ground that this study evaluates information and design quality of universities’ website and users’ satisfaction level which can translate to positive attitude towards the school.

Information and design are two relevant aspects when considering a successful website (Gu, 2017). While content considers the quality of information available on the website, design considers the quality of the website itself as an information system. It’s expected that institutional websites should provide quality information to the students, staff, parents and the community through a quality information system that is user-friendly and engaging. Provision of quality information at the right time to students, staff and parents is essential for them to make a critical decision about themselves and the school. Information quality is measured by contextual approach which rates information based on users need for the information, users task completed and user’s applications used (Ernungtyas, Febrianno & Qadrifa, 2023). Website design quality on the other hand is measured by its ability to both technically and non-technically supports the dissemination of information (Ernungtyas et al, 2023).

Again, if institution websites are to be successful, factors relating to user satisfaction should be taken into consideration; and there exists a scanty literature on that despite the significant

influence of quality information and website quality on customer or users satisfaction. (Kalankesh, Nasiry, Fein & Damanabi, 2020; Ernungtyas, et al, 2023). Again, information quality in particular has not been extensively studied despite the fact that it is a key component in explaining user satisfaction (Laumer, Maler & Weitzel, 2016; Alshikhi & Abdullah, 2018; Petter et al, 2012). This study therefore is an evaluation of official websites of select private universities in Delta State, Nigeria as to ascertain their information and website quality and how they influence user's satisfaction.

Statement of the Problem

Website is one information Communication Technology (ICT) utilised by the universities in dissemination of information to their publics. In this digital age, academic institutions are under increasing pressure to create a website that promotes the institutions' positive identity and increase student enrollment. However, most of the times, these websites serve decorative purposes without actually maximizing the benefits accruable from it.

In recent times, many institutions float website and always quick to direct their publics to their website for further inquiries and information. The importance and frequent use of websites among institutions in Nigeria raises concern as the information and website quality, and user's satisfaction. Many universities fall short in the area of information accuracy, accessibility, ease of use and user satisfaction. It is not clear whether the users are satisfied with the information and the website design quality.

This study therefore evaluates the effectiveness of private universities' websites as information sources by measuring the quality of information, the quality of website design and the satisfaction of the users interacting with the websites.

Research Objectives

- 1) To determine the extent university students in Delta state, seek information from their institutions' official website.
- 2) To ascertain the type of information university students in Delta state access from their institutions' official website.
- 3) To ascertain if university students in Delta state are satisfied with the quality of information on their official institutions' website.
- 4) To determine if university students in Delta state are satisfied with their institutions' website design quality.

Research Questions

- 1) To what extent do university students in Delta state seek information from their institutions' official website?
- 2) What type of information do university students in Delta state access from their institutions' official website?

- 3) Are students in universities in Delta state satisfied with the quality of information on their official institutions' website?
- 4) Are students in universities in Delta state satisfied with their institutions' website design quality?

Hypothesis

- 1) There is a significant relationship between quality of information on the university website and users' satisfaction
- 2) There is a significant relationship between the institutions' website design quality and users' satisfaction.

Significance of the Study

With the proliferation of private universities in Nigeria which brought about competitive and rivalry educational environment, scrambling for new students' enrollment is the order of the day. Again, running an institution of higher learning especially at private level requires a huge fund generation which is dependent primarily from fresh students' enrollment. Finding from this study therefore will benefit institutions of higher learning like universities that are desirous of increasing their student enrollment which is the basis for funds generation for running the institution.

There is lack of sufficient research on information quality in academic website especially as it affects user satisfaction despite the significant influence of quality information and system like website on customers' or users' satisfaction. Findings of the study will help university tailor messages that will satisfy the user's information need.

The findings of this study will contribute to knowledge regarding website design and information management. It will as well help the school management make informed decisions about how to allocate resources for website improvement and updates. It will also be beneficial to website developers and designers to implement best practices in web development.

The research report shall also contribute to emerging literature in digital communication, particularly, as it relates to its use in dissemination of information through the school websites. It will show the role quality information on website plays in decision making by users of the website like students and parents.

Scope of Study

This study is an evaluation of official websites of select private universities in Delta State, Nigeria as to ascertain their information and website quality and how they influence user's satisfaction. The selected universities in this study are only privately-owned university in Delta state, Nigeria. Data was obtained from male and female students in the selected private universities. Such students, whether part-time or full-time, undergraduates, post graduates, or students of other

various academic classifications, participated in the study, since they are students of the selected universities.

Literature Review

University Website: An Overview

Over the last decades, website has become one of the most important information sources on the internet for disseminating information to the organization's publics and providing services to the society. A website is an application that utilizes web technology and be accessible through the internet, allowing it to have a wider reach and be more easily accessible to users (Delima, Santosa, Purwadi, 2017;). Basically, website incarcerates the attention of those who know little about the organization and are interested in it. It tells users what organization is doing within the perspective of the industry in which it is competing in. It is recognized as a potential new media that can become an extension of communications industry, such as journalism (Christin, 2018).

Institution website has become an integral part of institutions' communication channel. It serves the purpose of promoting the academic experience, recruiting student, advertising, research-informed teaching and research results with a purpose of communicating institutional characteristics, constructing the identity of the institution as well as marketing it digitally (Saichaie & Morpew, 2014; Tomášková, 2015). It give identity to the institution ((Manzoor, Hussain, Ahmed & Iqbal, 2012), and serves as a virtual gathering place for members of the school community to exchange information. It also provides data about the institution's history, mission, vision, principles, teaching and non-teaching employees, certificates, honour, other recognitions, and any other information pertinent to the institution are included (Caratiquit, 2021).

Institution website consistently include common links such as 'Alumni', 'Admission', 'Athlete', 'About us' and 'News' (Hite & Railsback, 2010). It serves as a back-up database for easy storing of student and staff record keeping (Doctor, 2017); saves time and money, since institutions with a well-designed website do not have to spend more money running print and television advertisement but create online brochure, or television advertisement for promoting the institution (Caratiquit, 2021). However, websites should only serve as an additional resources benefits supplied by the schools to the world and not a replacement of in-person contacts (Caratiquit, 2021).

Website Design Quality and User Satisfaction

Website design quality constitutes the attributes that contributes to its usefulness to users and it is primarily determine by the degree to which its features are perceived by users to meet users' need and to reflect this site's overall excellence (Morales-Vargas, Pedraza-Jimenez & Codina, 2023; Gregg & Walczak, 2010). The ability of a website to meet the expectations of its users and

owners is determined by a set of measurable attributes which include; functional, user objective and experimental. Functional attribute focuses on the evaluation of website inherent characteristics such as content, information architecture and visual design, technical and operational feature (Leung et al, 2016; Morales-Vargas et al, 2023). User objective focuses on meeting the site owner's objectives and the use of performance, visibility and positioning metrics (Sanabre et al, 2020). The third approach which the study considered more strategic is experimental. It focuses on user experience and perception to examine factors such as usability, accessibility, and satisfaction (Maia & Furtado, 2016)

"It is apparent that usability and accessibility occupy the first positions both as a dimension or parameter and as an indicator" (Morales-Vargas et al, 2023; 38). Usability is "a quality attribute relating to how easy something is to use" (Nielsen and Loranger, 2006; 16). It refers to the ease with which a system or component can be learned, how efficiently it can be used, how memorable it is, how error-prone it is, and how much users like using it (Nielsen & Loranger, 2006). It measures the quality of an application in terms of benefits, how easy the application is to learn and use (Hasibuan. & Putri 2022; Ulul et al, 2019; Hendra & Arifin, 2018). This means that the higher the usability value, the higher the benefits of the website in helping the users.

Accessibility explains the opportunity or right to use something (Oxford Advanced Dictionary, 2000). It is the "degree to which computer and other computer-related gadgets are used freely by as many people as possible to retrieve and satisfy their information needs" (Abubakar, Gupiyemi & Banwar, 2017). Accessible website is a flexible one with regard to input, display and output. It means that the user should be able to access the content on the website regardless of their special need (Hendra & Arifin, 2018).

Information Quality and User Satisfaction

"Information quality and user satisfaction are two of the major dimensions used for assessing the success of the information systems" like website (Alshikhi & Abdullah, 2018; 38). Information is described as a processed data. In the technical sense, "it can be depicted as a sequence of symbols that can be interpreted as a message" (Kundu, 2017, p. 393). According to (LISBDNETWORK, 2023), information is data that has been processed, organized or structured in a meaningful manner as to provide context, relevance and value to the users. People need information for personal use, professional development and social survival. Information is considered as a livewire for economic developments together with capital, labour, and raw materials; and the progress of any nation will be impossible unless and until information is made available to people who need it (Manjunath & Babu, 2018).

For information to be valuable and meaningful, it must be of good quality. Provision of quality information at the right time to people is essential for them to achieve a meaningful livelihood. It ensures that citizens make responsible, informed choices rather than acting out of ignorance or misinformation (Duru & Ezeh, 2018). Information quality is a major criterion for measuring the

success of a website, and decision quality is a function of information quality (Howard, Lubbe, & Kloppe, 2011). It is the ability to satisfy stated and implied needs of the information consumer (Gustavsson & Wänström, 2009). Here, customer and consumers of information refers to the users, so the users influence information quality (Naumann & Rolker, 2000). Quality information reduces uncertainty and enhances the production of more timely and accurate decision outcomes (Alshikhi & Abdullah, 2018).

(McGonigle & Mastrain (2023) gave the characteristics of quality information as; accessibility, security, timeliness accuracy, relevance, transparency, completeness, flexibility, reliability, objectivity, reliability, verifiability, utility and reproducibility. In prior research studies like (Petter et al, 2012; Gable et al, 2008) information quality was measured in terms of accuracy, completeness, consistency, ease of understanding, personalization, relevance, security, and timeliness. Lee et al (2002) have suggested a methodology for information quality assessment that contains four dimensions of information quality: intrinsic, contextual, representational, and accessibility. However, in this present study contextual information quality as it relates to user satisfaction - accuracy, completeness and currency will be measured.

Information accuracy is one of the elements of intrinsic information quality (Wang & Strong, 1983). It relates to the correctness of the output information (Bailey & Pearson, 1983). Misinformation can be very dangerous especially when the party with inaccurate information has an advantage in power or authority (Masrom, Ismail, Anuar, Hussein & Mohamed, 2011). Completeness refers to how comprehensive the information is. Information completeness in an institution website should consider if all information one need about the school is available in the website. Currency deals with whether the information is available in time when the user needed it.

Low quality information is considered as one of the most serious problems of users of information as well as decision makers in an organization (Alshikhi & Abdullah, 2018; Howard et al, 2011; Embury et al 2009) However, information quality problems results in increased, estimated cost of revenue cover for organizations that use the information for both operational and strategic decision making (Alshikhi & Abdullah, 2018). These costs include reduced productivity due to time spent to recover from data errors, reduced customer satisfaction and loyalty resulting in reduced future business opportunities; reduced employee morale; and reduced ability to change business rules and policy (Embury et al 2009)

Information and website design quality affect information and system satisfaction respectively (Forsgreen, Durcikova Clay & Wang, 2016; Todd, 2005). Users' satisfaction reflects user's level of satisfaction when using information system like website. The perception about information and system quality influence user satisfaction which in turn influences the behavioural reaction of the users. (Laumer, Maler & Weitzel, 2016)

Theoretical Framework

Uses and Gratifications Theory

Uses and Gratifications theory was developed in 1974 by Katz, Blumler and Gurevitch. It is the study of the gratifications or benefits that attract and hold the audience to various types of media and types of content that satisfy their social and psychological needs. UGT identifies several key factors that influence media consumption behavior, which include; individual needs, social context and media characteristics. People use media to satisfy a variety of needs, such as information seeking, entertainment, social interaction, and personal identity (Katz et al, 1973). These needs drive individuals to select media that they believe will fulfill those needs and provide gratifications (Ruggiero, 2000);

Website as a new media of communication lends itself to uses and gratification approach in most part due to its three attributes not common to traditional media; Interactivity- how actively responsive the medium is to the users; demassification – the control of the users over the medium (William et al, 1988); and asynchronicity – ability of the users to send, receive, save or retrieve messages at his or her convenience (Chamberlain, 1994).

As website provides users with this accelerated media aspect and more choices, evaluation of users' motivation and satisfaction become more crucial. This theory will therefore help the study in understanding if the official websites of private universities in Delta state, Nigeria provided the users the information and system quality that satisfied their information need.

Method

The study adopted survey research method with the use of questionnaire as the instrument for data collection. This research method was helpful in obtaining data from the publics who have access to university website, particularly private universities in Delta state, Nigeria. It would, therefore, help to provide a better understanding the quality of information that are presented in the websites; the quality of the websites; and how it affects users satisfaction.

The study used simple random without replacement to pick three universities out of the five private universities in Delta state; Edwin Clark University Kigabodo (edwinclarkuniversity.edu.ng), Novena University Ogume (novenauniversityedu.ng), and Western Delta University Oghara (wdu.edu.ng). The population of the study is the total number of students in the three selected private universities which is put at 13, 975. The study decided to purposively sample 250 respondents (students) of the selected universities, who had access to their institutions' website. The sample size allocated to each of the selected university was based on the population of each university as shown in Table 1.

Table 1: Population of the students in the selected universities and sample allocation

S/N	University	Population	Percentage	Sample Allocation
1	Edwin Clark University Kiagbodo	3,225	23.1%	58
2	Novena University Ogume	6,964	49.9%	124
3	Western Delta University Oghara	3, 786	27%	68
	3 Private Universities	13, 975	100%	250

The data generated for the study was synthesised and analysed using statistical package for social sciences (SPSS) Version 16.

Results

The result of the study are presented, analysed and discussed below. Two hundred and fifty copies of the questionnaire were administered on the respondents; however, 222 copies of questionnaire were valid for the study. The details of the result are as follows.

Table 2: Extent of seeking Information on the university website

Extent of seeking Information on the institution website	Frequency	Percentage
Always	46	20.7
Not too often	131	59
Rarely	45	20.3
Never	-	0
Total	222	100

Table 2 above shows data on the extent the respondents seek information on their university website. The data on the table reveals that all the respondents in one way or the other access the school website for information as 20.7% of the respondents access it always. 59% access it not too often, while 20.3% rarely access it. This suggests that the respondents do not frequently access their institutions website for information.

Table 3: What information do you seek on your university website?

Information Quality	No	Mean	Std. Deviation
Admission process	222	3.61	1.355
The media	222	1.98	1.221
Career prospect	222	2.45	1.259
School programmes	222	3.23	1.758
About us	222	3.12	1.472
Teaching and research	222	2.65	1.333

In this Table 3, types of information the respondents' access on the university website were rated. Information on admission process had the highest score of 3.61 as the most significant information they seek, followed by school programme at 3.32. Another significant information they seek is 'About us', teaching and research and Career prospect are insignificant at 2.65 and 2.45 respectively while school newsletter is grossly insignificant at 1.98.

Table 4: Quality of information on the institutions' official website

Information Quality	Edwin Clark University Kiagbodo (ECU)	Novena University Ogume (NUO)	Western Delta University Oghara (WDU)
Accuracy	3.51	3.22	3.42
Currency	2.49	2.64	2.11
Completeness	2.86	2.71	2.44

The third objective of the study is to ascertain the quality of information on the website of select higher institutions in Delta state. Reading across the mean value rating Information Accuracy rated highest among the three universities with a significant value of >3.00. Currency and completeness qualities fall within the insignificant point among the three universities since the decision point is >3.0. This shows that although the information on the institutions websites is accurate, they are incomplete and outdated.

Table 5: Design Quality of University Official Website

Website Quality	Edwin Clark University Kiagbodo	Novena University Ogume (NUO)	Western Delta University Oghara
Accessibility	3.87	3.22	3.72
Usability	3.22	2.88	2.63
Satisfaction	2.87	2.05	2.64

The fourth objective of the study is to ascertain the quality of the university's website. From Table 5 above, Accessibility recorded highest mean score at >3.0 across the universities, emerging the highest significant value. While usability quality is significant in Edwin Clark University, it recorded

insignificant in Novena University and Western Delta University. ‘Satisfaction’ is insignificant at <3.0 across the universities. This goes to mean that the inasmuch as the websites are accessible, they are not usable and satisfactory.

Table 6: Quality of Information and User’s Satisfaction Independent Samples Test

Levene's Test for Equality of Variance						t-test for Equality of Means				
		F	Sig.	T	Df	Sig (2 -tailed	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper	
Complete Information	Equal variances assumed	66.814	<.001	-10.828	220	<.001	-1.457	.135	-1.722	-1.192
	Equal variances not assumed			-10.211	135.298	<.001	-1.457	.143	-1.739	-1.175
Accurate Information	Equal variances assumed	.246	.620	-6.892	220	<.001	-1.043	.151	-1.341	-.745
	Equal variances not assumed			-6.848	206.901	<.001	-1.043	.152	-1.343	-.743
Currency Information	Equal variances assumed	90.802	<.001	-12.381	220	<.001	-1.619	.131	-1.877	-1.361
	Equal variances not assumed			-11.538	120.823	<.001	-1.619	.140	-1.897	-1.341

T-test sample and Likert scale were used to test this hypothesis. The result in Table 6 above that presented a cross mean of quality of information and user’s satisfaction shows that the respondents are satisfied with the accuracy of information on the universities’ website; however, the outdated and incomplete information on the website culminated to users; dissatisfaction with the overall information quality.

Table 4 was also used to substantiate that there is a significant relationship between quality of information on the university website and users’ satisfaction. The rating of accuracy of

information at >3.0 as against the two items currency and completeness of information at <3.0 attested to this.

Table 7: Website Design Quality and User's Satisfaction Independent Samples Test

Levene's Test for Equality of Variance						t-test for Equality of Means			
		F	Sig.	T	Df	Sig (2 - tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Usability	Equal variances assumed	41.768	<.000	-7.405	94	.000	-.750	.101	-.951 -.549
	Equal variances not assumed			-8.775	55.000	.000	-.750	.085	-.921 -.579
Accessibility	Equal variances assumed	.059	.809	6.960	94	.000	1.514	.218	1.082 1.946
	Equal variances not assumed			6.929	82.814	.000	1.514	.219	1.080 1.949
Satisfaction	Equal variances assumed	3.814	.054	-8.343	94	.000	-1.004	.120	-1.242 -.765
	Equal variances not assumed			-8.658	92.741	.000	-1.004	.116	-1.234 -.773

The result above shows high quality of the universities websites design but it did not translate to users' satisfaction with the website. The insignificant value of 0.00 obtained in Table 7 above showed low level of users' satisfaction of their university website design. This result therefore

proved that there is no significant relationship between the institutions' website design quality and users' satisfaction.

Discussion of Finding

Descriptive analysis was used to analyse the variables raised in the study. The dependent variable, private universities' website was measured against the independent variable users' satisfaction. Information quality was measured with three variables; accuracy, completeness and currency; while website quality was also measured with three variables; accessibility, usability and satisfaction.

It was evident that students in private universities in Delta state recognize and adopted website as one of the points of contact when seeking information about their schools. The study found that although the students seek information on the institution' website, it did not serve as a major source of information for them. Some of the students access mainly information about admission processes and available courses/programmes. This goes to mean that these websites are mainly beneficial to prospective students who wish to know about the school and plays a decorative role for already enrolled students and their parents. Uses and Gratifications theory comes to play here; the institution publics seek information on the school website so as to gratify their admission related information need.

Information about teaching and research and career prospect links were insignificant at $2.65 < 3.00$ and $2.45 < 3.00$ respectively; while information on 'Media/news' link was grossly insignificant at $1.98 < 3.00$. This information was either perceived as unimportant by the respondents or were not giving much attention on the website. This corroborates (McAllister, 2012; Hite & Railsback, 2010) assertion that educational institutions are not using the website to its full potential. A website should be an extension of journalism for the school (Christin, 2018). It is excellent way of dissemination message and celebrating students and staff awards. It allows the universities showcase their achievements, promote events and provide valuable information; and keep the students, staff and parents up-to-date with campus news. This can help build corporate image of the institution which can as well translate to more students' enrollment.

The respondents considered the information provided in the university website to be accurate and realistic and not deliberately in contrast with facts. Accuracy of information is an important criterion. Inconsistent or contradictory information can lead to disappointment and frustration which can lower users' satisfaction. On the other hand, the respondents considered information on the websites as outdated and incomplete. This could be asserted based on date the information is published and inability of the website to give detailed information about school events and achievement on the media/news link.

The university websites were considered accessible but not usable except the Edwin Clark University website which was recorded significant as shown on Table 5. Accessibility is not enough to make a website effective and successful; useable is another key factor. Because of technological advancement, people prefer website that are quicker, interactive and easy to use (Khawajai & Hussain 2010). They would want to navigate and explore through the pages in order to satisfy their information needs owing to the facts that information is not easily located.

The study found that although the universities' website users were satisfied with the website design quality, they were not satisfied with the information quality of the website which translated to dissatisfaction with the website. This corroborates with (Laumer, et al, 2016) assertion that it is not just technical quality of the system that will drive organization and users' satisfaction, but the information that is provided in the system.

Conclusion and recommendations

An evaluation of private universities' official website users' satisfaction based on the quality of information provided on the website showed that users are generally not satisfied with the quality of information based on currency and completeness quality of information. However, they are satisfied with the accuracy of the information. On the other way, the websites were very accessible and usable, but it did not translate to users' satisfaction with the website. The implication is that information quality is key in determining website user satisfaction. The study therefore recommended that universities should always provide detailed and updated information on their websites.

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