Sudan University of Science and Technology

College of Graduate Studies

A Model for Evaluating the Quality of Online News Website

A Thesis Submitted in Partial Fulfillment of TheRequirements for the Degree of Master of Science in Computer Science Track Software Engineering

By:

Hussein Ali Hussein Gsmelsed

Supervisor:

Dr. NisreenBeshir Osman

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DEDICATION

ACKNOWLEDGMENT

I would like to express my sincere thanks to the Sudan University of Science and Technology for providing me with the opportunity to join and study at it. Without them, I would not have reached this stage.

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And many thanks to God Almighty for all good and blessing.

Abstract

Due to the increase in usage of the Internet in various areas of life such as education, health, government and business, and the great efforts of corporations to transfer their business to Internet sites in an effort to create and maintain their websites in a way that enables them to communicate with their customers and users.

The lack of evaluation model of the quality of the news site was the main reason for the design of model evaluation of quality news websites. The main objective of this research was to propose a model for evaluating the quality of news website.

The main website success factors were reviewed in addition to analyzing and identifying the most prominent success factors for news websites. Accordingly, the quality factors and sub-factors necessary was performed to review were selected.

An entirely new quality evaluation model was designed with eight high-level quality factors these are: functionality, efficiency, understandability, content, modifiability, portability, maintainability, and navigation.

The proposed model was verified to a case study of a news website to evaluate the quality of the site.

The results of the evaluation showed that the site in general has high quality of reliability and efficiency characteristics, with good to excellent quality according to the quality evaluation model and the opinion of visitors.

المستخلص

نظرا للزيادة في استخدام الإنترنت في مختلف مجالات الحياة مثل التعليم والصحة والحكومة والأعمال ، والجهود الكبيرة التي تبذلها المؤسسات لنقل أعمالها إلى مواقع الإنترنت في محاولة لإنشاء وصيانة مواقعها الالكترونية .ان عدم وجود نموذج تقييم لجودة المواقع الاخبارية كان الدافع الابرز للقيام بتصميم نموذج تقييم الجودة للمواقع الإخبارية على الإنترنت.

حيث تمت مراجعة العوامل الرئيسية لنجاح المواقع بالإضافة إلى دراسة شاملة للأدبيات المتعلقة بنماذج تقييم الجودة لمختلف انواع المواقع الالكترونية الموجودة حاليا.

بعد ذلك ، تم تحديد عوامل نجاح المواقع الاخبارية وبناء على ذلك تم اختيار عوامل الجودة الاساسية والعوامل الفرعية اللازمة لها من بين نماذج الجودة المختلفة للنموذج المقترح.

تم تصميم نموذج تقييم الجودة الجديد تمامًا مكوناً من ثمانية عوامل جودة عالية المستوى (الوظيفة ، والكفاءة ، وإمكانية الفهم ، والمحتوى ، وقابلية التعديل ، وقابلية النقل ، وقابلية الصيانة ، والتنقل).

تم تطبيق النموذج المقترح على موقع إخباري لدراسة الحالة (موقع صحيفة ريبورتاج) لتقييم فعاليته وفي نفس الوقت لتقييم جودة الموقع وذلك عبر تصميم الاستبيان للتقييم وتم نشره على مواقع التواصل الاجتماعي المختلفة.

تم تحليل نتائج الاستبيان حيث أظهرت نتائج التقييم لـ (ريبورتاج) أن الموقع بشكل عام يتمتع بخصائص جودة عالية من حيث الموثوقية والكفاءة ، كما ان الموقع يمتاز بجودة جيدة إلى ممتازة وفقًا لنموذج تقييم الجودة ورأي الزوار.

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List of Abbreviations

No	abbreviation	Sentence
1	ISO	International Organizations for Standardization
2	IEEE	Institute of Electrical and Electronics Engineers
3	MiLE	Milano Logan Evaluation Method
4	MINERVA	Ministerial Network for Valorizing Activities in Digitization
5	Web-QEM	Web Quality Evaluation Model
6	2QCV3Q	Quis (Identity), Quid (Content), Cur (Services), Ubi (Individuation), Quando (Management), Quomodo (Usability) and QuibusAuxiliis (Feasibility).

Chapter I

Introduction

1.0 Introduction

With the great technical development websites have become very widespread in all fields.

There are millions of websites today but a small percentage of these websites reach far above the ground level in satisfying their users' requirements and needs for several reasons.

Among these reasons are: The rapid advancement in web technologies, limited experience and background of designers and developers, time and resources allocation for website design and development projects. Despite the fact that many websites lack the quality of satisfying their user's needs, the reliance to use websites for different purposes such as finding information, shopping online, communicating with people or performing other different tasks has augmented [1].

The design and performance of websites at present times is different from how websites looked and performed few years back.

While several website design guidelines have been widely adopted and used for the purposes of improving the design and development processes of websites, website quality evaluation standards and models remained to be rather not largely used.

Most of the models neither directly address quality factors related to particular properties of websites in different domains nor do they consider the different viewpoints of users of the website under consideration. Furthermore, the quality factors (characteristics) extremely focus on

usability features of websites while neglecting other necessary quality factors such as quality of information, performance and functionality [2].

In spite of that, evaluating the quality of a website is important to ensure whether or not the website is successful in meeting its intended purposes for its intended users.

One of the domains where websites are most widely used nowadays is the news domain.News organizations use websites for broad and varied purposes, including distributing news to the public, promoting events, displaying articles, analyzing news and presenting them as reports. In addition to the columns of audience'svisitors to this site are students, teachers, employees, journalists, athletes and creators from all fields. All of this group of users have each of them their own requirements and expectations of the site.

News websites should take into account the needs of these different user groups when designing as a basic requirement [3].

1.1 The Problem Statement

There are several website quality models currently available, even though most of them only provide broad website quality factors and only few are designed for the purpose of evaluating websites in particular domains like museums tourism, hotels, government and commerce or business. The high prevalence of news websites and their great impact on society makes it imperative to pay attention to the form and content of this type of website as users of news websites are more interested in whether or not they can find the information they are looking for on the site, and how long it will take to find that information.

The main problem is the lack of a specific quality evaluation form for news websites that takes into account the requirements of different user groups.

The existence of a website quality evaluation form helps in assessing whether the site is fulfilling its intended purpose for its intended users or not.In addition, evaluation results can help you understand parts of a website that need adjustments to bring site improvement.

Evaluating the quality of a website helps assess whether or not the website is achieving its intended purpose for the intended users.

1.2. Objectives

The objectives of this research can be summarized as follows:

1- Designing a quality evaluation model for online news websites
2- Verifying the model by applying to the reportage website
3- Providing guideline for improving the proposed news website quality evaluation model.

1.3. Importance of the Research

The process of developing and designing a model for evaluating news sites is the main purpose of this research.

Whereas, this proposed model for evaluating the quality of news websites, makes it possible to improve this type of website in such a way that users of the websites can benefit from the improvements that will be made to the website based on the results of this assessment.

Thus, site users can easily navigate through the site to search and find the information they want to search for on the site without difficulty and in the shortest possible time.

1.4. Scope

The project is limited to develop a new quality evaluation model for news websites.

The focus will therefore be on site quality characteristics that reflect the needs of these users.

1.5. Research Methodology

The methodology used in this research explore generic software and website quality models of how the evaluation model is constructed. Select success and necessary quality factors and sub factors selected from existing models.

Apply the model and test the proposed evaluation model used to construct the questionnaire and analyses the responses.

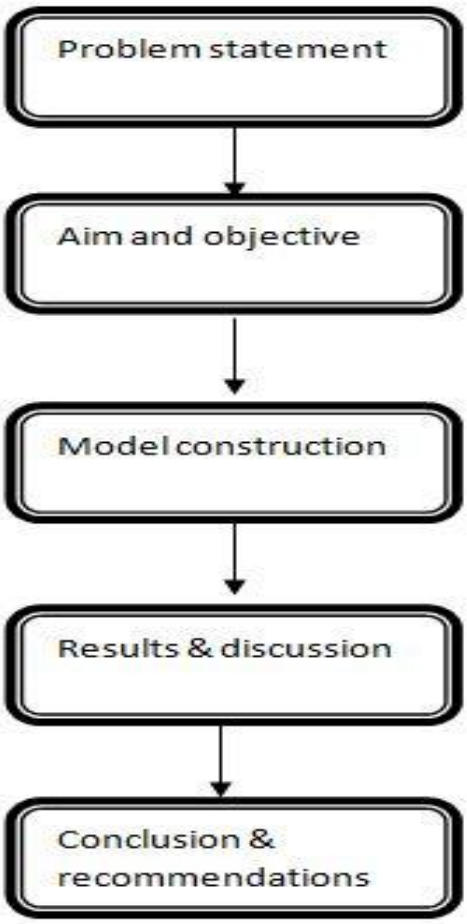

Figure 1.1 research methodology

1.6 Thesis Structure

Chapter 1 gives a brief introduction to the project by explaining the problem statements, objectives, importance of the thesis, scope and research methodology.

Chapter 2 discusses a summary of the review of the literature conducted to explore generic software and website quality models and different types of software and website quality evaluation models.

Chapter 3 an overview of how the evaluation model is constructed. It explains general quality factors for website success and necessary quality factors and sub factors selected from existing models. It also describes the criteria considered for the sub quality factors.

Chapter 4 general methodology used to verify the model and test the proposed evaluation model.

It gives an explanation about the steps used to construct the questionnaire and analyses the responses.

Chapter 5 gives conclusions of the work done in this Thesis by explaining the key results of theproject. General recommendations for evaluating quality of online news websites are also given at the end of the chapter.

Chapter II

Literature Review

2. Literature Review

In this chapter the concept of quality models is explained by reviewing the general definitions, importance and perspectives associated with the quality, current software and quality models of the website.

2.1. Background

Quality is an intangible concept. It is not easy to define it in an operational way, yet everybody feels it when it is missing.

The terms good quality and poor quality are used in our everyday life to tell how good or bad a product function.

Most people can recognize quality easily but they find it difficult to give a clear description of the term. Sometimes quality indicates luxury, taste, and expensive products.

A product that is expensive is perceived to have good quality, while a product with cheaper price is considered to have poor quality. This outlook shows that people consider quality as something that can be felt, understood and judged but cannot be measured and hence cannot be controlled **[2].**

Regardless of this observation, in order to improve the acceptance and use of a product, its quality should be defined, measured and controlled.

Quality can be seen as the abstract relationship between attributes of an entity.

These attributes of entity of interest (for example a software product or a website) include the viewpoint on that entity and the quality characteristics of the entity.

While the term is ambiguous and obviously misunderstood, there are many perspectives and approaches to define and measure quality.

2.1.1 Software Quality and Website Quality

Software quality is defined in two different ways: compliance with requirements and user needs [1].

Compliance with the requirements determines the quality of the software based on its ability to meet sets of requirements and specifications determined by designers and developers at the beginning of software development.

Meeting customer needs on the other hand determines the quality of a software product that depends on the ability of the program to meet the needs and expectations of intended users.

Generally, the quality of a software product is measured by its effectiveness to satisfy its user's requirements and the intrinsic product quality, which is characterized by the rate of defects in the product and its reliability [2].

Websites are seen as an artifact or products having distinguishing features from traditional software products.

Web quality, similar to the broad definition of quality, it is largely an undefined concept.

Many webs quality research explains Web quality in a descriptive manner without specifying its basic characteristics or providing a tested measurement scale.

The intended purpose of the website for which the website is designed can be used primarily to determine the quality requirements of this website. Given that from a user's perspective, the website should be easy to use, easy to understand, and equipped with essential functions and navigation aids.

The design and development of websites involves several fields of study including information architecture, navigation, psychology, computer science, human interaction and graphics design.

Tasks done in all these fields should be integrated to design an effective website that can satisfy the intended users.

It is also advised to evaluate the quality of websites using different quality assessment techniques starting in the earlier stages of the website design, during the intermediate design stages and the deployment (operational) stages **[5].**

Software quality assessment has been around as a discipline for the last three decades.

Software quality assessment models have been developed to evaluate the quality of software products.

However, quality assessment of hypermedia and web applications has been a neglected issue.

Yet, quality evaluation is not an easy task in either the software or web engineering field.

It is challenging to consider all quality characteristics for the quality evaluation purpose, unless there are good quality evaluation models or Models. The quality evaluation models provide lists of quality characteristics and show the relationships between these characteristics, which provide boundary for identifying quality requirements and evaluating quality of a product. Although there are differences and similarities between software products and websites, in the past, software quality evaluation models have been used to evaluate quality of websites **[2],[5].** Adopting software quality models to evaluate quality of websites requires to

first be aware of the similarities and differences between software products and websites.

Websites or web applications, taken as a product have their own features that distinguish them from traditional software, specifically:

- Web applications are interactive and user centered, hypermedia-based applications where the user interface play a great role
- Aesthetic and visual features that are more artistic and creative skills than technical skills are part of web applications development than it is in software development. There is a great connection between art and science in web applications development
- Internationalization and accessibility of content for users with various disabilities are real and challenging issues in Web applications
- Web applications are content driven and document oriented. Most websites continue to deliver information as this is one of the features of the early web, which is also supported by the semantic web initiative
- An experimental environment for software may be hard and expensive whereas for web applications it is simple and cheaper
- Maintaining software product is a recommended practice, while maintaining a website is necessary to keep it alive
- In case of technical flaws, a website may continue to function with less quality whereas this is not necessarily true with software products
- The medium where Web applications are hosted and delivered is generally more unpredictable than the medium where software

applications run. For instance, unpredictability in bandwidth maintenance, or in server availability, can affect the perceived quality that users could have.

Web applications have the above distinctive characteristics making them different from software products. However, similar to software products, web applications consist of source and executable codes, list of requirements, design and testing specifications. Thus, the quality factors in the software quality models can be equally applicable for evaluating quality of websites as well.

Apart from the software quality models, there are also website quality evaluation models introduced over the past few years. These include website quality evaluation models like Web-QEM, 2QCV3Q (7Loci), Minerva and MiLE**[4]**.

2.2 Related Work

2.2.1. Software evaluation models

1.McCall Model

McCall defines the quality of a software product through 3 different perspectives namely Product Operations, Product Revisions and Product Transitions.

It consists of 11quality factors to describe the external view of the software (users' view); 23 quality criteria to describe the internal view of the software (developer's view); and asset of metrics that are used for quality evaluation. The fundamental idea of this model is assessing the relationship among external quality factors and product quality criteria. A major contribution of this model is the relationship between quality characteristics and metrics.

However, there are criticisms such as not all metrics are objectives and the functionality of software product is not considered in this model [6].

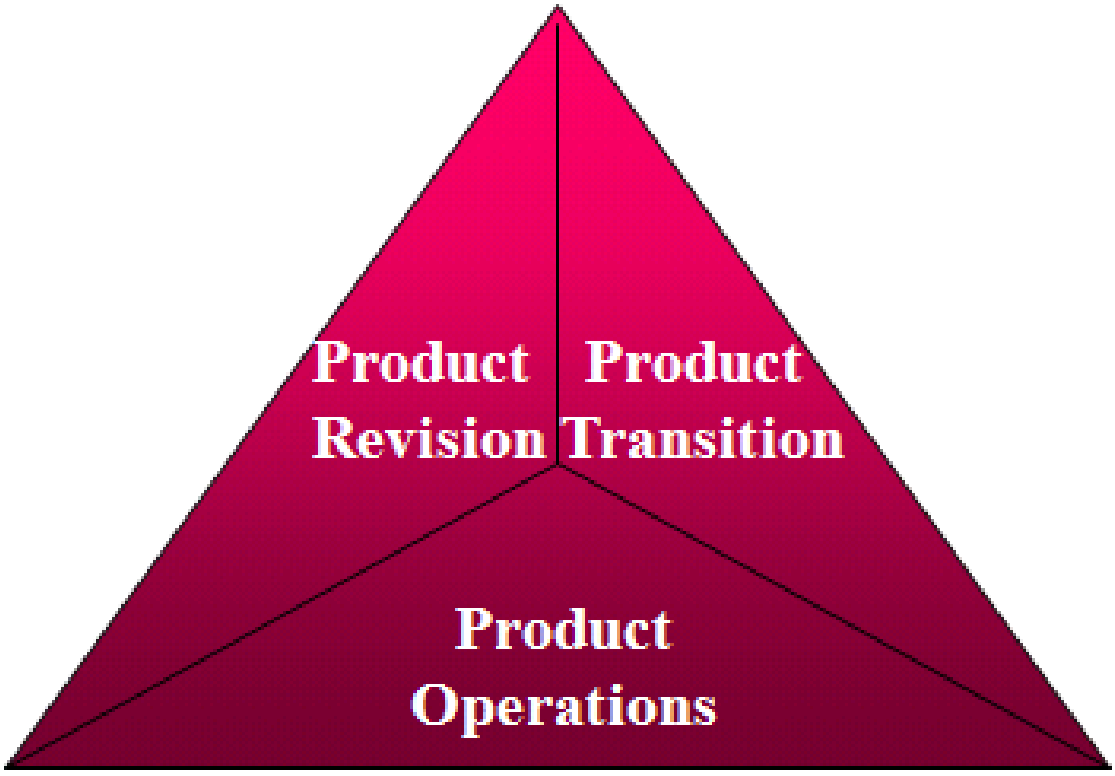

Figure 2.1 McCall Model characteristics

2.Boehm Model

Boehm introduced a model for evaluating the quality of software both automatically and quantitatively. It presents a hierarchical structure similar to McCall consisting of High-Level, Intermediate-Level and Low-Level Characteristics.

Each of these characteristics contributes to the total quality of software product. This model takes into account some considerations of software product with respect to the utility of the program. Boehm also extended characteristics to the McCall model by emphasizing the Maintainability factor of a software product, which is one of the advantages of this model. However, it does not suggest any approach to measure its quality

characteristics **[6].**

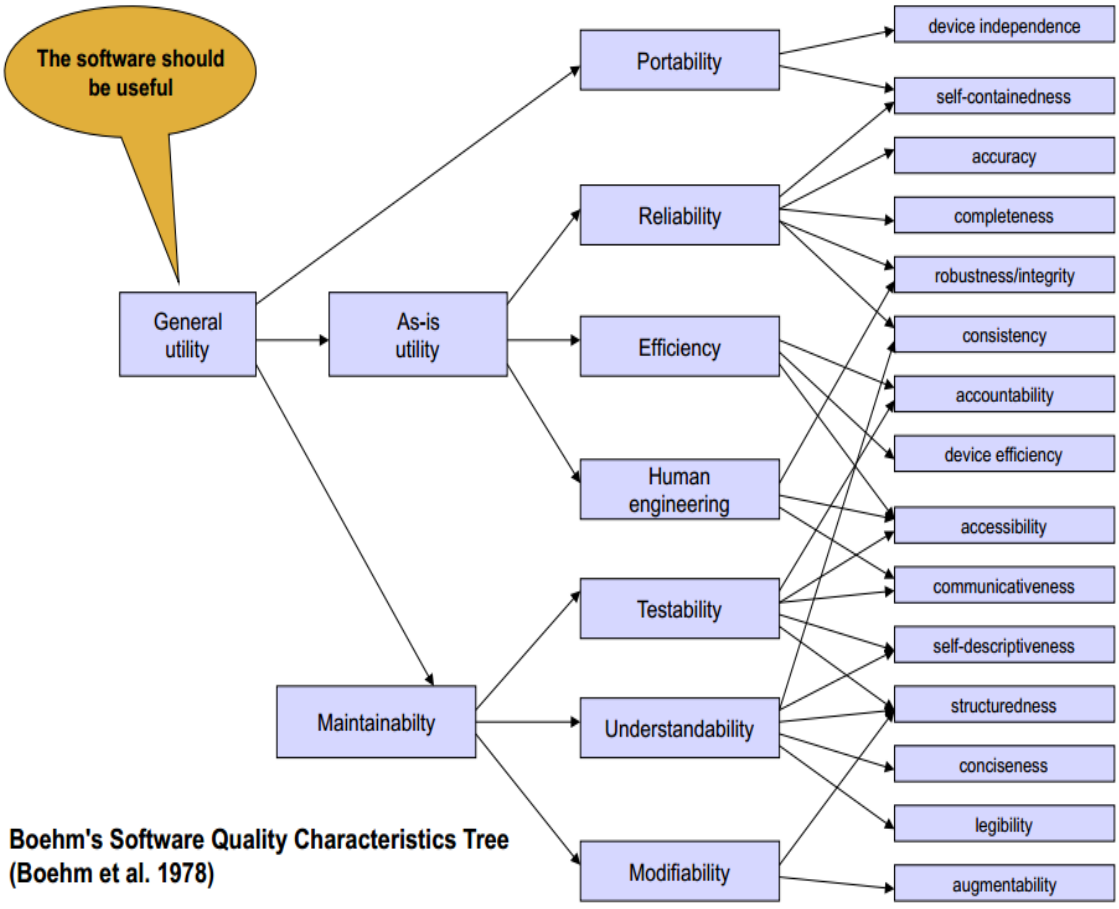

Figure 2.2Boehm Model characteristics

3. Hewlett Packard F.U.R.P.S Model

Robert Grady and Hewlett Packard proposed the FURPS model thatdecomposes characteristics into 2 categories of requirement:

Functional Requirements and Non-Functional Requirements.Functional requirements are defined by input and expected output while non-functional requirements (FURPS) consist of usability, reliability, performance

andsupportability.

It is important to note that domain specific attributes and software product portability were not addressed in this model.

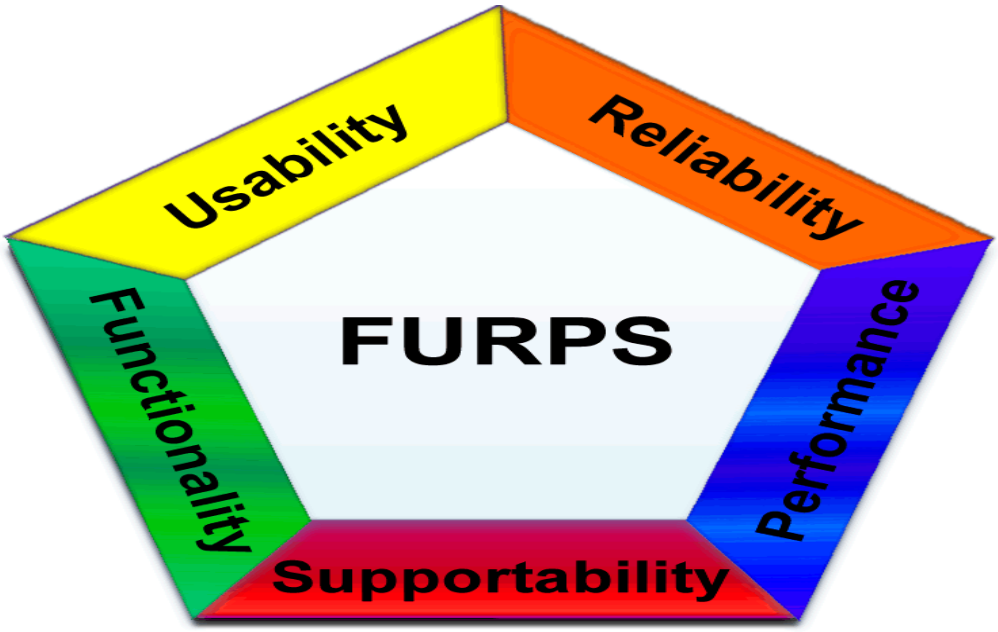

Figure 2.3Hewlett Packard F.U.R.P.S Model characteristics

4. Dromey Model

Dromeyproposed a working frame work for evaluating requirement determination, design and implementation phases. The Model consists of three models namely Requirement Quality Model, Design Quality Model and Implementation Quality Model. Layers are defined as high-level attributes and sub ordinate attributes.

The main idea of this model is to create a Model that is broad enough for different systems; and to understand the relationship(s) between characteristics and sub-characteristics of quality product.

As such, different evaluation is proposed for each product. However, a more dynamic modeling of the process is needed since this model lacks the criteria

form assuring software quality [4].

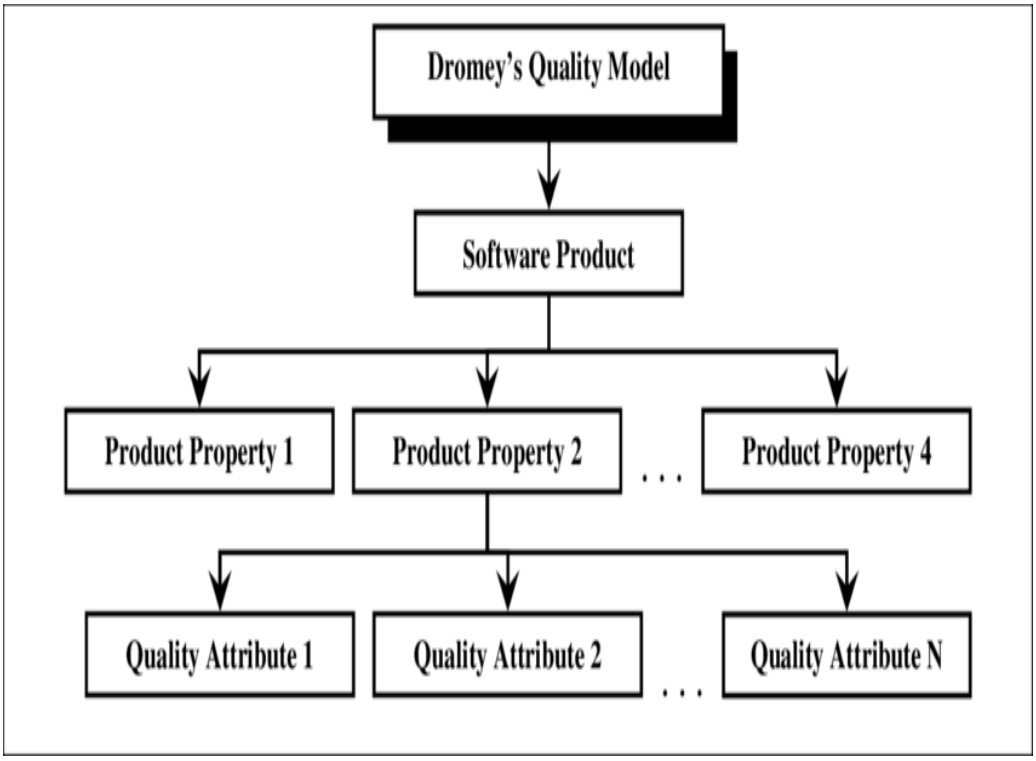

Figure 2.4The structure of Dromeys quality model

Dromey's model focuses on the relationship between the high level characteristics and the sub characteristics as well as the relationship between the general software quality and the properties of a product. As shown in Figure 3 above, the properties listed are used to evaluate the quality of the software components. It does not however explicitly give explanation about the metrics or evaluation approaches to be used.

5. ISO 9126 Model

ISO 9126 is an international standard for the evaluation of software [9]. It is divided into 4 parts which addresses the Quality Model; External Metrics;

Internal Metrics; and Quality in Use Metrics.

This model is based on previous works by McCall, Boehm, FURPS, etc. The fundamental idea behind this model is specifying and evaluating the quality of a software product in terms of internal and external software qualities andtheir connection(s) to attributes. Quality attributes are classified into a hierarchical tree structure of characteristics and sub-characteristics.

The highest level consists of quality characteristics and the lowest level consists of quality criteria. ISO 9126 specifies 6 characteristics as shown below in figure 1 and they are further divided into 21 sub-characteristics These sub-characteristics are manifested externally when the software is used as part of a computer system, and the results of internal attribute.

The main advantage of this model is that the characteristics defined are applicable to every kind of software while providing consistent terminology for software product quality.

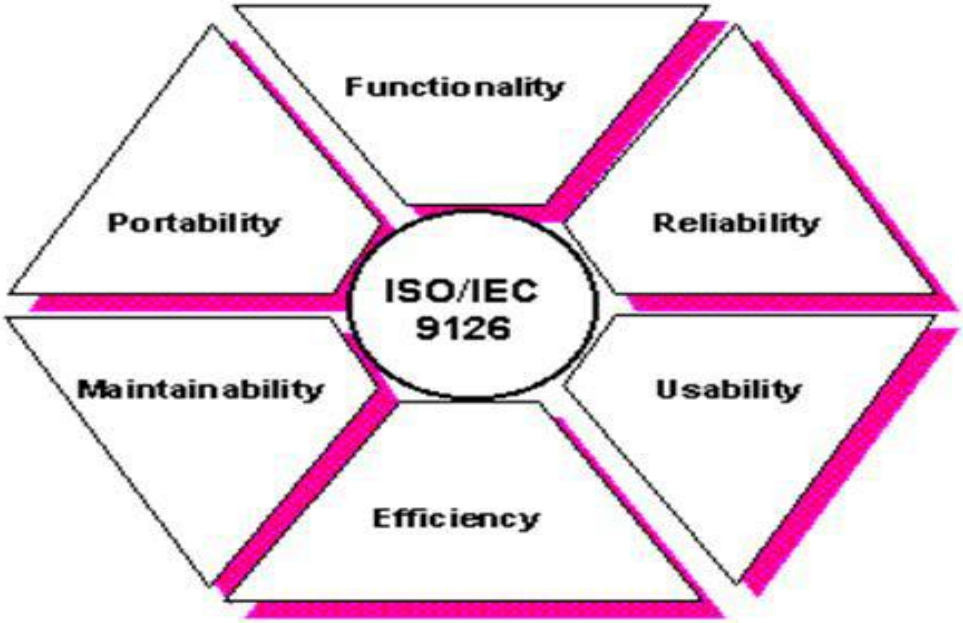

Figure 2.5 ISO 9126 Model characteristics

2.3. Related Website quality models

Software quality evaluation was given high emphasis than quality evaluation of website and web applications.

Recently however, there have been significant developments in the Web Engineering, which shifted the focus of quality evaluation, from the offline world to the online world based on the basic software quality evaluation models. In this section, some of the website quality models are discussed briefly [2].

2.3.1. Web - QEM (Web Quality Evaluation Model)

This model was a result of quality assessment first made on museum websites. Afterwards, it was applied to academic websites and other domains. The quality characteristics in this model are based on the ISO 9126-1 model and therefore its characteristics include usability, reliability, efficiency and functionality [6].

The evaluation process in the model involves the following basic steps:

- Selecting a website or sets of websites to compare or evaluate
- Specifying evaluation goals and intended user's view point
- Defining the quality characteristics and sub-characteristic attributes requirement tree.
- Defining criterion function for each attribute, and applying attribute measurement
- Aggregating elementary preference to yield the global website quality preference
- Analyzing, assessing, and comparing partial and global outcomes

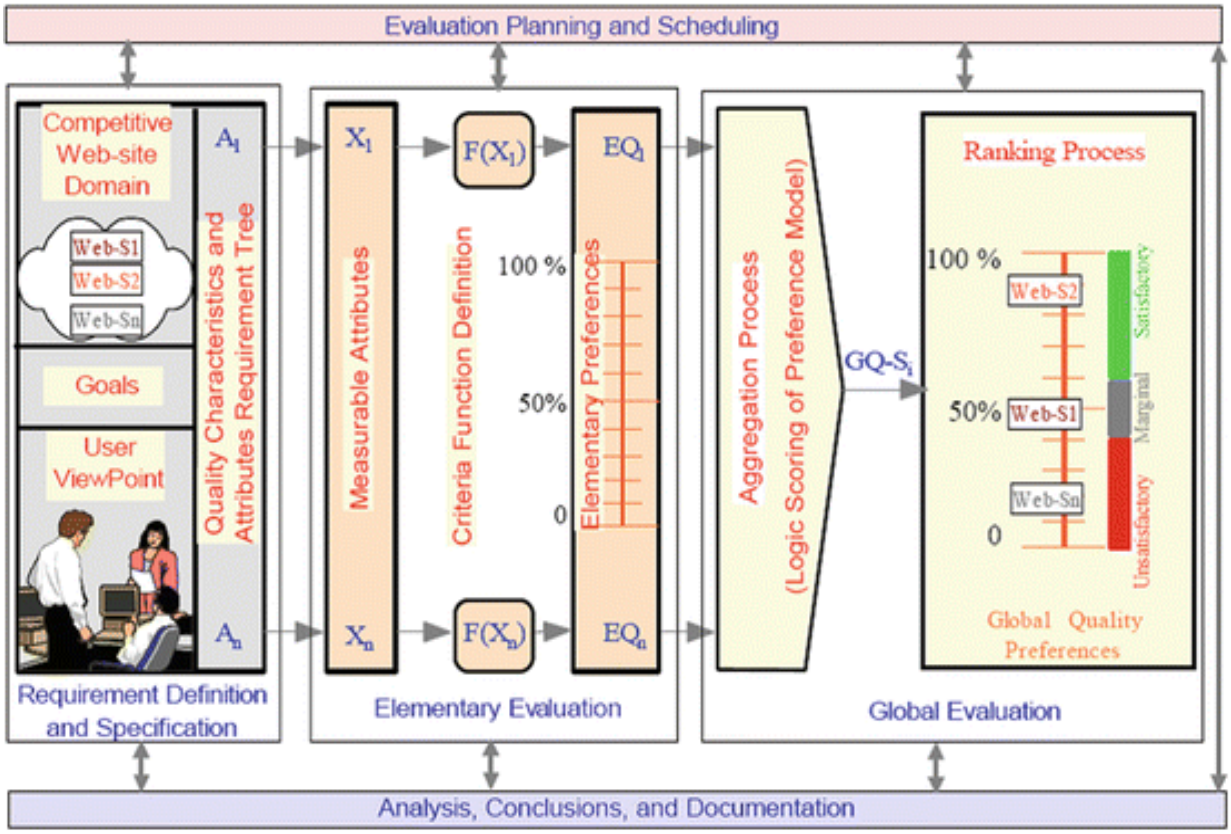

Figure 2.6 Web-OEM Model characteristics

What makes this model unique is that it gives a domain specific approach and a step-by-step procedure to accomplish the evaluation of the chosen website.

Further, the model provides the method that should be used in each of the steps, as shown in Figure 2.6 above. It uses the Logic Scoring Preference (LSP) approach of evaluation.

LSP is a method used to quantitatively measure attributes of a product through logic scoring **[8].**Although end users participate at the earlier stages of the assessment to help the identification and specification of user requirements, the rest of the evaluation process engages only experts. Thus, the evaluation process may result in a pile of subjective opinion of the

experts that do not represent the usability experience and satisfaction of the end users of the website.

2.3.2. MiLE (Milano-Lugano)

This model shows a clear distinction between application dependent and application independent evaluations. It proposes technical inspection for evaluating application independent aspects. It suggests to use user-experience and scenario-based testing for the application dependent aspects of a website **[9].**

This model is a usability focused evaluation method based on the combination of inspection from expert evaluators and user's empirical testing. It bases its evaluation on two heuristics: abstract and concrete evaluation heuristics.

It categorizes different levels of analysis: content, services, navigation, cognitive features of the interface, aesthetic/graphic level and technology level. Content means the quality of the information the website contain and its communication level.

Services mean all the functionalities the website offer to its users.

Navigation means two basic things:

the first one is the different ways users reach to specific piece of information and the second one is the logical structure of information for passing from one piece of information to another.

Cognitive features of the interface indicate how users understand, perceives and remembers the website structure. This is somehow related to usability characteristics mentioned in the other models. Aesthetic/graphic level indicates the graphic design and layout of the website interface, the type of font, color, size, image and the distribution of the graphic elements in the

pages. Technology level indicates the compatibility of the website to perform well in different types of browsers, the security level of the server hosting the website and the interaction between the website and the remote database.

2.3.3. 2QCV3Q-model (7 Loci)

This is a conceptual model consisting of 7 dimensions to evaluate quality of a website: who-what why-when-where-how and feasibility (with what means and devices). The model takes its name from the rhetorical principles of Cicerone loci, which begin with Auxiliis (feasibility), Quiz (identity), Quid (content), Ubi (individuation), Quando (management) and Quomodo (usability) [7]. The quality characteristics and attributes of this model are shown in the table 2.1 below.

Table 2.1 2QCV3Q model

T

Ciceronian Loci	Attributes
Quis	**Identification**
(*Persona:* Who?)	Brand (organization or company); charisma (individual)
Identity	Image
	Characterization
	Design
	Personalization
Quid	**Coverage**
(*Factum:* What?)	Domain referred to owner's and users' goals
Content	Value of information and links
	Accuracy
	Quality of information
	Source(s), author(s)
Cur	**Functionalities**
(*Causa:* Why?)	Adequacy to owner's goals
Services	Adequacy to users' goals
	Control
	Correctness
	Security, ethics, and privacy
Ubi	**Reachability**
(*Locus:* Where?)	Intuitive URL
Location	Retrieval
	Interactivity
	Contact information
	Community building
Quando	**Currentness**
(*Quando:* When?)	Updates and revisions
Management	Dates
	Maintenance
	Check-up
	Tools
Quomodo	**Accessibility**
(*Modus:* How?)	Hardware and software requirements
Usability	People with disabilities
	Navigability
	Structure, orientation
	Download times
	Understandability
	Languages
	Level of terminology
Quibus Auxiliis	**Resources**
(*Facultas:* With what means and devices?)	Financial and human resources
Feasibility	Time
	Information and Communication Technology
	Hardware (computer, networks)
	Software (implementation, integration)

2.3.4. MINERVA (Ministerial Network for Valorizing Activities in Digitization)

MINERVA is a network of European states' ministries for cultural heritage. This model is proposed for evaluating quality of cultural websites (museum, archives, libraries, and other cultural institutions).

In this model, quality is defined in terms of accessibility and usability. The purpose of the quality criteria in this model is two-fold. The first one is they are used to represent the quality characteristics for evaluating quality of cultural websites, and the second one is that they support the design and evolution of cultural websites.

The model supports the use of 10 quality principles: transparent, effective, maintained, accessible, user-centered, responsive, multi-lingual, interoperable, managed and preserved **[9].**

Transparent means the website must clearly indicate its purpose, mission and its identity to not confuse users. Effective central principle in this model is content.

A website must offer a valid and relevant content that provides appropriate supporting information. Maintained indicates content and technical maintenance of the website. It specially is focuses on the currency of content and improving technical functionalities of a website.

Accessible indicates a characteristic of a website to help all the user's community access the website without any difficulties. Thus, a website must consider users that are blind or with partial sightseeing problems and hearing disabilities. The website should also not rely on one technology to present its information to its users **[10].**

It should support different types browsers, operating systems and devices. User-centered means the website must satisfy user's needs and users must find the website useful, easy to use and attractive. Responsive indicates the capability of the website and the website owners to respond to questions users forward.

It also means users can participate in producing content and participating to answer questions in a forum discussion. Multi-lingual means a website should offer multiple languages for its users.

Language can be an important barrier to website access, so there is a need to consider this characteristic. Interoperable refers to a characteristic of a website to interact with other websites.

If a website is developed based on standard technologies and techniques and data models, interacting and interoperating with other websites and online entities would be easy.

Managed indicates legal issues related to protecting Intellectual Property Right (IPR) and privacy**[10].**

Preserved indicates long-term preservation of the website and the ways to facilitate preserving the contents of the website.

2.3.5 Common software issues and website quality models

The quality models discussed in the previous sections share common drawbacks that using these models for quality evaluation of websites does not seem to be reasonable. The problems can be summarized as follows:

- The models present general characteristics lacking justification that describe which factors to determine for evaluating a particular software product or a website in a specific domain.

- Lack of underlying principle for deciding which specific quality characteristic relate to which high level quality criteria
- No clear way that shows how the sub characteristics are composed for the overall assessment of the website and the method that should be used to measure the general quality assessment.

Table 2.2: Common high level quality characteristics of software & website Quality models

No	High level quality characteristics	Software quality Models					Website Quality models			
		McCall	Boehm	FURPS	Dromey	ISO9126-I	W-QEM	MiLE	2QCV2Q	MINERVA
1	Functionality			*	*	*	*		*	*
2	Efficiency	*	*		*	*	*			*
3	Usability	*		*	*	*	*		*	*
4	Performance			*						
5	Reliability	*	*	*	*	*	*			
6	Portability						*		*	*
7	Content								*	
8	Feasibility									
9	Maintainability	*	*		*	*	*		*	*
10	Modifiability		*							
11	Testability	*								
12	Understandability		*				*	*	*	*
13	Integrity	*								
14	Flexibility	*								
15	Supportability			*						
16	Correctness	*								
17	Interoperability	*				*				*
18	Reusability	*			*					
19	Transparency									*
20	Navigation						*	*	*	*

Table 3: literature review summary

Study	Date	Author	Results	Techniques
A Study on Website Quality Models	December 2014	Ms.R.Anusha	Analyses about various web metrics which are used to assess the website performance. to gives an insight about quality evaluation framework comprising quality measurement, characteristics , and measurable indicators It concludes with some of the limitations of quality evaluation methods.	Web Metrics
Implementation of a Model for Websites Quality Evaluation – DU Website	April 2014	Kavindra Kumar Singh, Praveen Kumar, Jitendra Mathur	Discussed quantitative evaluation strategy to access the quality of web sites and applications analyze phases and activities, describes the produced deliverables, and present models, methods, procedures, principles and tools to apply in these activities using a specific website for evaluation, and other carried out field studies thoroughly an evaluation process.	Evaluation Website

Usability Evaluation of Online News Websites: A User Perspective Approach	2014	Qasem A. Al-Radaideh, Emad Abu-Shanab, ShaimaHamam, and Hani Abu-Salem	evaluate online newspaper websites using two assessment measures; usability and web contentachieved by using questionnaire-based evaluation which is based on the definition of usability and web content in the ISO document as the standard. the research showed that the usability factor is relatively good for all Jordanian online newspapers whereas the web content factor is moderate.	Questionnaire , ISO Model.

PEQUAL - E-commerce websites quality evaluation methodology	December 2018	Jarosław Wątróbski, Paweł Ziemba, Jarosław Jankowski, Waldemar Wolski.	The formal foundation of the proposed methodology is the broadening of the classical EQUAL method with aspects of preference modeling and evaluation aggregation used in Multi-Criteria Decision Analysis (MCDA). Its empirical verification has been carried out for top e-commerce websites. The conducted research has revealed significant practical possibilities of analysis and interpretation of obtained final rankings.	Questionnaire, PEQUAL method

Website Quality Assessment Model (WQAM) for Developing Efficient E-Learning Framework- A Novel Approach	November 2013	R.Jayakumar, Banbehari Mukhopadhyay.	attempts to evaluate the quality measures for enhancing the site design and contents of an e-learning framework, explores two main processes. Firstly, evaluating a website quality with the defined high-level quality metrics such as accuracy, feasibility, utility and propriety using Website Quality Assessment Model (WQAM). Secondly, developing an e-learning framework with improved quality. the quality metrics are analyzed with the feedback compliance obtained through a Questionnaire	Questionnaire, Website Quality Assessment Model (WQAM).

Chapter III

Methodology

The methodology on which the research relied to solve the problem of the lack of a model for evaluating the quality of news sites, began by exploring and reviewing general programs with a focus on website quality models for how to build the evaluation model.

Then determine the most important causes of success, the necessary quality factors and the sub-factors selected from the current models.
This chapter discusses how to design a quality assessment form for a proposed website (reportage news).The quality of the website and the sub-characteristics of the basic model (ISO 9126-1) were first discussed, followed by an explanation of the basic quality characteristics of the site, which was collected from the various quality models that were reviewed and revised in the previous chapter.

Finally, important recognized quality standards are described and reviewed as important for assessing the quality factors selected for evaluating the quality of news sites on the Internet.

When designing the evaluation form, the use of news sites and the different types of users of these sites are determined.The site quality evaluation forms, current programs and previous use studies were analyzed to determine the main quality factors for evaluating news sites. 8 quality factors were identified to be essential in addition to the sub-factors for them in the new model.

Website design guidelines are used to carefully categorize quality factors with similar inclusion in categories while eliminating excess quality factors. The web design guidelines also helped define the criteria for evaluating quality factors.The appropriate quality factors were selected for the model and its sub-factors, the application of the model and testing of the proposed evaluation model used in building the questionnaire and analyzing the responses.

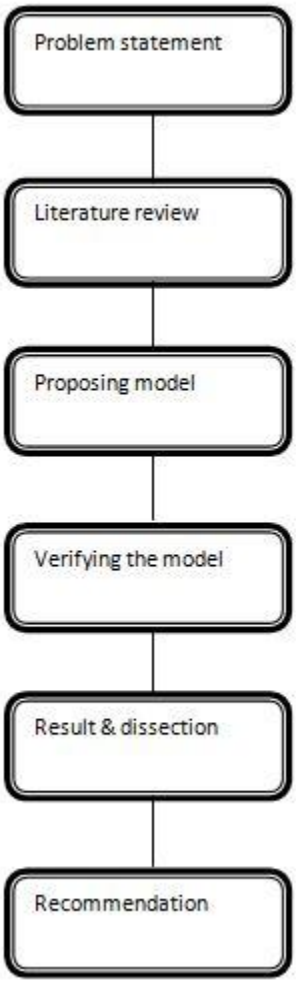

Figure 3.1 Research methodology

3.1 Uses of online news websites

The general objective of this project was to design a model for evaluating quality of online news websites. Website quality can be evaluated from different users' perspectives using different methods.Some major uses of news sites on the Internet in one way or another relate to the following tasks:

- Publication of reports and news on culture and arts
- Advertising cultural events for individuals and centers
- Communication means towards the general community
- Presentation of columns and writings on different cultural issues

Promoting news and reports on activity by site specialty, whether formal or informal, is the primary objective of news sites.

Government or private entities can use the news website to advertise their latest programs and private and public news.You can also provide integrated information on the latest developments, whether news, reports or events that are announced early in order to facilitate access to them.
It also provides dialogues with prominent characters enabling the visitor to identify the hidden aspects of these characters.The website is also used to facilitate the follow-up process by providing live event support and occasionally uploading a video with an activity extract.Institutions and cultural centers also use the website to disseminate important achievements in projects, workshops that are announced, changes in their programs and the like to the public.Satellite channels interested in displaying news can also collaborate with the site to obtain specific information to urge the news you want from the website.

The website also uses to advertise workshops and programs open to the public.There are different groups of news site users.Each user group has

different requirements and expectations of the site. The main users of the news site include:

- TV channels
- Radio stations
- Daily newspapers
- Students
- Employees
- Journalists
- Companies
- Cultural Institutes
- Bloggers
- Artists
- Creator Content

3.2 Previous related works in websites evaluation

There have been many previous work related to site-specific features such as ease of use and accessibility.Previous studies conducted to assess the overall quality of online news sites are very few.

When considering the evaluation of public websites and newsletters, we must consider three main quality factors that contain a number of sub-items. These quality factors are the basis of the evaluation of the news sites especially, and this result was achieved after sitting in interviews with a number of website owners.

The quality factors are shown in the table 3.1, along with each quality factor of its sub-items[11].

Table 3.1 : The most common website success factors

Quality Factors	Sub items
Content	Usefulness of content, appropriateness of content, currency of content, understandability, reliability of content, website purpose
Design	Usability, user friendly interface, accessibility, organization, customer relationship (interactivity)
Technology	Reliability, use of valid links, browser compatibility, navigation, search, keywords, speed, technical adequacy

Table3.2 show the main characteristics on which the most famous four models of site quality evaluation models are based.

Table 3.2: High level quality characteristics of existing website quality models

Website quality models and their characteristics				
Website Quality models	**Web-QEM**	**2QCV3Q (7 Loci)**	**Mile**	**MINERVA**
characteristic	-Usability -Efficiency -Reliability -Functionality -Content -Navigation	-Usability -Feasibility -Maintenance -Services -Content -Identity -Location	-Services - Content - Navigation - Cognitive feature of the interface - Technology -Aesthetic/graphics	-Transparent -Accessible -Responsive -Multi-Lingual -Interoperable -Managed -Preserved -Effective -Maintained -User-centered

3.3 The proposed model

In order to design the new evaluation model, the basics of evaluating the quality of programs and websites in particular were considered, and various quality evaluation models were reviewed. After careful study of the basics of the news website and the most important requirements that it is supposed to have.

Quality factors that meet these needs have been identified and selected. A quality assessment model has been developed.Based on the main quality factors of the selected base model, the quality factors of the group factors with the equivalent semantic effect were rearranged in one class by

eliminating the current frequency and the names of different factors having the same characteristics when defined.

Figure 3.2 The proposed model

Table 3.3: Arrangement of identified essential quality factors into the model

Quality factors	Sub quality factors
Functionality	- Suitability - security -correctness
Efficiency	- Time behavior - Accessibility
Understandability	- Interactivity - Operability - Attractiveness
Content	- Relevance of information - Information accuracy - Up-to-date information - Authors information - Identity
Modifiability	-Extensibility -Simplification control panel - Restructuring
Portability	- Adaptability - Conformance
Maintainability	- Testability - Analyzability
Navigation	- Finding home page - Current location

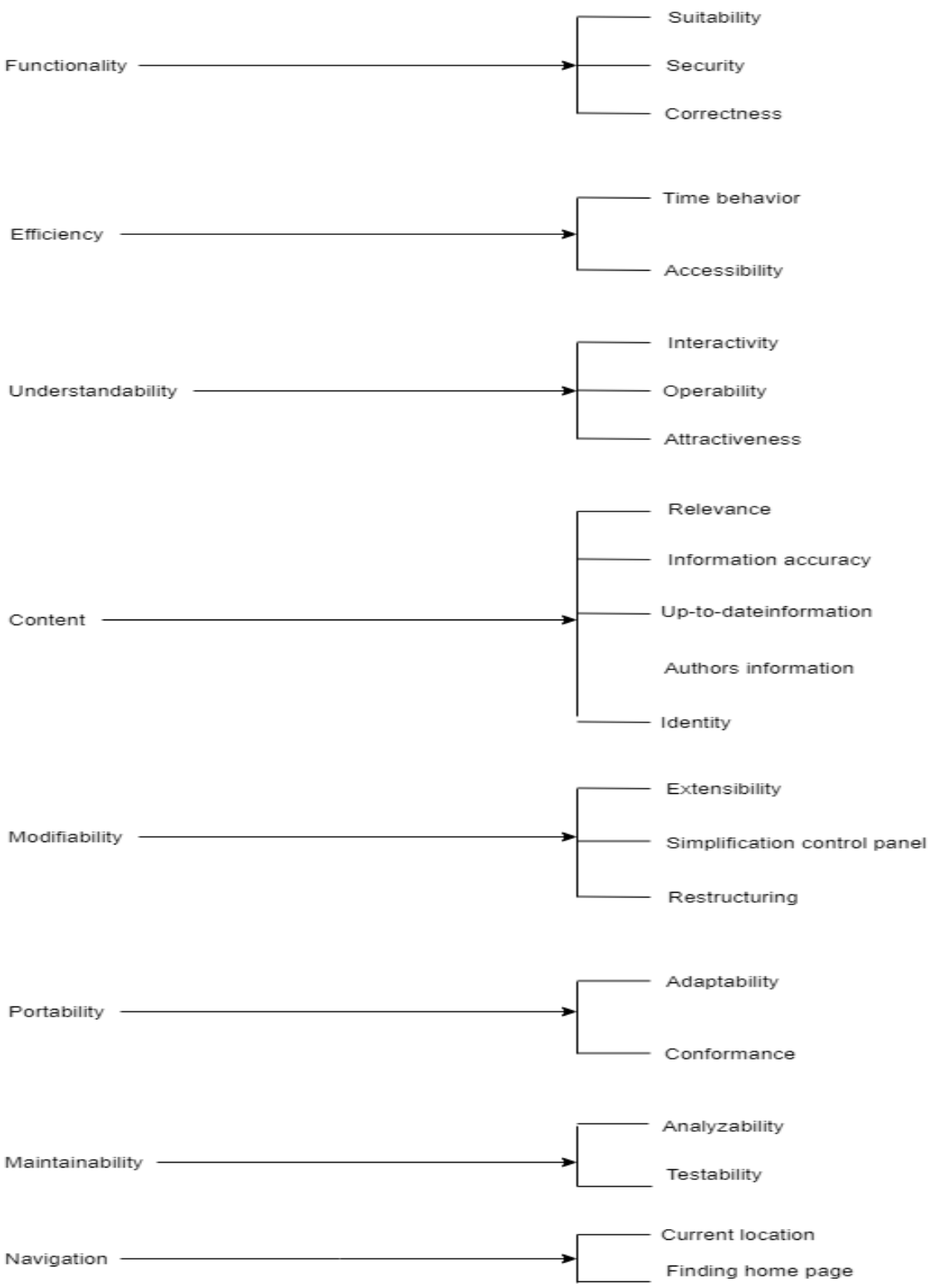

Figure 3.3 Online news website quality evaluation model

3.4 Quality and Sub quality factors of proposed model

The quality factors of the proposed model are further decomposed into number of sub characteristics or sub quality factors.A brief description of the characteristics of the quality factors and their sub-properties is described and how sub-properties are grouped under each high-level property and reassembled under each high-level property in the following sections [12].

3.4.1 Functionality

The functions indicate specific tasks that help to accomplish stated or implied needs.In the ISO model, the sub characteristics of functionality are suitability, interoperability, accuracy and security.Accuracy is already grouped under the high-level properties of the content, and is therefore excluded here.Although convenience is slightly represented in sub-characteristics of accuracy, it is listed as a sub-function factor because it indicates whether the services provided on the website are suitable for users. Can help to assess user satisfaction with the functionality provided by the site.

Interoperability and security are taken directly as sub-characteristics of the function in the new model. Interoperability is mentioned only in the MINERVA model.It indicates that the website interacts with other websites or apps online. Security is not mentioned in none of the models studied, though the ISO model puts it a sub characteristic of functionality. the function breaks down to the following Sub-characteristics:

1- **Suitability:** In the ISO model, suitability is defined as "the appropriateness of the functionalities the website provides to users.In other words, users should be satisfied with the functionality that the

site provides for use in a particular use context. Users must be satisfied with the services the website offers.

2- **Security:**Website security is any action or application taken to ensure that the website's data is not exposed to cybercriminals or to prevent the exploitation of websites in any way.It is very important to the site user to browse the Web site properly ensures the integrity of its data and privacy.

3- **Correctness:** Functional correctness refers to the input-output behavior of the algorithm, here we mean that all of the site's own functions work correctly.

3.4.2 Efficiency

Efficiency here refers to the time a website takes to perform a task or site's productivity.

In the ISO model, efficiency consists of two sub-properties: time behavior and resource utilization. As discussed extensively in Chapter 2, time behavior refers to the amount of time the product takes to perform tasks.

The use of resources also indicates the number of resources used by the producer to operate and implement the activities required. However, this is not a major concern for users compared to site owners.

Therefore, this sub property is not considered to be inserted. Affirms access to the site's technical capacity to support users with different disabilities.

1. **Time behavior**

   The amount of time the site takes to load or execute tasks must be very short. Users must be able to open pages in just a few clicks.

2. **Accessibility**

   The website must be technically able to support people with different disabilities to access the website.

   Access also refers to the ability of the website to support many browsers, device platforms (such as mobile phones and PDAs) and screen settings.

3.4.3 Understandability

Website Understandability is defined as the combined effect of several design goals like easy to learn, easy to remember, easy to understand, easy to find and effective to use it.The website should make it easier for users to understand how the website is used for a specific task within a specific use context.Organizing the website is one of the main quality factors in the proposed quality model.

The site should be simple and easy for all user groups to handle and handle. The order of labels, links, and terms used on a website must match the user's terms so as not to confuse the site user.Based on the sub characteristics in the ISO model, the reviewed website models, and other related works the sub characteristics identified for Understandability are:

- **Interactivity**
- **Operability**
- **Attractiveness**

1. **Interactivity**

   The website should provide users with facilities to interact with the web admin, editor, or content author on the site. Submit FAQs that summarize answers to frequently asked questions.

Clear questions and error messages and contact information are one of the possible ways to facilitate user interaction with the site. Interactive feedback systems are email communications and free communication systems essential tools to support user interaction with the site admin.

2. **Operability**

   Operability refers to the ability of users to operate and manage the Web site easily. Site users must be satisfied with the manner in which the services and content are provided on-site and are able to use the site easily without frustration or confusion.

3. **Attractiveness**

   The site's user interface must be attractive and fun enough to encourage users to spend as long as possible to use the site. In addition, the choice of color, label names and types of fonts used must be consistent through the web pages. Except for titles, the fonts used are the same throughout the site. Web pages should not be too crowded or excessive to cause visual contamination, and spaces must be used effectively to avoid uncoordinated pages.

3.4.4 Content (Website Information Quality)

The content is part of the website quality models that have been studied and is often mentioned in previous studies relevant to evaluating news sites.

Content is the information presented on the website, which is one of the reasons why users visit the website.

The information provided on the website must be relevant to the purpose of the website and its presentation or listing is attractive and appropriate to the

users of the website.Users come to the Web site by searching for information of any kind and based on the information that is directed to the Web sites of relevant information, so should pay attention to the content. Taking into account previous work that set the criteria for assessing the content of information for web resources, the sub-characteristics listed under the content are accuracy, updated information, objectivity, currency, coverage and target audience.

"Objectivity" refers to whether the information provided by the website meets the intended purpose, the currency indicates how closely the information posted on the site relates to situations that occur within the current timeframe or if the content is consistent and generally updated. Coverage refers to the level of detail that is explored and explained when presenting content on a particular topic. The intended audience indicates. Based on this, these criteria can be used to assess whether or not the information placed on the website meets the user's needs. Information relevance, accessibility and legal compliance. The appropriateness of information confirms the consideration of the context of users in providing information. The information must be appropriate and free from the above.

And that the information is delivered to the appropriate users based on the intended use and context of use in a concise, up-to-date and complete manner. The quality of information also consists of sub-properties such as identity, which tell the organization or organization that owns the website. After reorganizing the sub-properties into categories based on their definitions, the following sub properties are specified as sub-properties of the content:

- **Relevance**
- **Information accuracy**
- **Up-to-date information (currency)**
- **Identity**
- **Authority**

1. **Relevance**

   The information provided on the website must be relevant to the purpose of the site and should be presented in an attractive manner to users. Unless the information on the website is important to users, interest in using this site may decrease, affecting the number of visitors. As a result, the site may not achieve its goal of spreading.

2. **Information accuracy**

   Site visitors rely on the information they find on the site and therefore it is very important to ensure the accuracy of the information on the site.

   Information provided by news websites must be correct and up-to-date and spelling and grammatical errors that can change the meaning of information should be avoided. The greater the accuracy of the site and the fewer the number of errors, the greater the satisfaction of users and increased their confidence in relying on the information provided by the website.

3. **Up-to-date information**

   The site should contain the latest information related to the purpose of the site and should be constantly updated.

   There should also be some means for users to know that the site is being updated. Viewing the exact date when the content is updated is

one of the methods that helps users realize that the time specified when the information was released and therefore relates to situations that occur during that specified time.

4. **Identity**

   The owner's logo (the news organization) that owns the website must be available and clearly visible at the header of each page.

5. **Author information**

   Information about editors who edit the content of pages on the site should be available for any type of review that users see. The availability of this information increases the credibility of the content. Reference should also be made to references from other sources outside the news organization by citing or placing a hyperlink to indicate that reference.

3.4.5 Modifiability

Modifiability is the degree of ease at which changes can be made to a system, and the flexibility with which the system adapts to such changes. In order to achieve Modifiability, several factors or characteristics must be available.

In order to have available three sub-characteristics:

- **Extensibility**
- **simplification control panel**
- **Restructuring**

1- Extensibility

Extensibility is the ability of a system, network, or process to cope

efficiently with the growing amount of work, or to be able to adapt to that growth.Therefore, this feature should be available on the news website because it is in the event of an extension due to your news being inserted daily on the site.

2- **simplification control panel**

We mean by simplifying the control panel to be easy to understand and anyone who is able to use a computer or one of the basic programs able to deal with and publish on the site and there are a number of content management systems assigned to this task should be compatible with the site.

3- **Restructuring**

Define a fundamental or fundamental change that changes the relationships between different components or elements of an organization or system.The structure of the website must be re-structured according to the need or purpose of the site.

3.4.6 Portability

ISO 9126-1 defines portability as "the ability to transfer the program product from one environment to another."Sub-characteristics under transportability are the ability to adapt, fix, coexist and replace.There are a number of sub-characteristics to which portability is concerned:

- **Adaptability**
- **Conforms**

1. **Adaptability**

The adaptive website adjusts the structure, content, or display of information in response to a user's measured interaction with the site, in order to improve user interactions in the future.

Web sites should contain adaptive content "in the sense that websites automatically improve their organization and presentation by learning from their users' access patterns."

2. **Conformance**

   Quality of conformance is the ability of a product, service, or process to meet its design specifications,this means that a website is compatible with the user's requirements and meets the purpose for which it is designed. Without being restricted to a particular operating system that works on all different operating systems (Windows, Mac, Android, etc ...) with the same efficiency.

3.4.7 Maintainability

The ISO 9126-1 model defines Maintainability as “the capability of the software product to be modified”. Modifications may include corrections, improvements, or adaptation of the software to changes in environment, and in requirements and functional specifications. The sub characteristics under Maintainability are:

- **Testability**
- **Analyzability**

1. **Testability**

   website testability is the degree to which a software artifact (i.e. a website system, website module, requirements- or design document) supports testing in a given test context.
   If the testability of the website artifact is high, then finding faults in the website (if it has any) by means of testing is easier. Formally, some websites are testable, and some are not.

2. **Analyzability**

   analyzability isthe program product can be diagnosed for shortcomings or causes of program failure, or to modify parts to be determined.We mean here the ability to analyze and diagnose the performance of the website and know the causes of failure when it occurs and know the exact cause of that.

3.4.8 Navigation

People need a clear path to navigate and do what they want without unnecessary barriers.A good navigation structure helps users navigate the Web site to find the information they're looking for without being lost or frustrated.

The navigation structure of a website must be well-constructed, easy to use, intuitive, and non-visual to users. To help users not lose on the go, you can use navigation gestures, sitemaps, index, meaningful link names, and back navigation.

The good navigation structure of a website depends on two sub-characterizes:

1. **Current Location**

   We mean that a visitor or user of the website can know the current section or site while visiting the website easily.

2. **Finding home page**

   Means that a visitor or user of the website can find the home page of the website and easily refer to it from any page of the website.

3.5. Quality criteria for the new model

The lists of the characteristics and sub characteristics are shown in Table 3.4

no	High level characteristics	Sub Characteristics	Criteria	Descriptions
1	**Functionality**	**Suitability**	Provide suitable functionality for users to apply	Users must be satisfied with the services provided by the website.
		Security	The website must be secure for users	The user of the website ensures the safety of his data and privacy.
		Correctness	All functions work correctly.	All functions of the website should work correctly.
2	**Efficiency**	**Time behavior**	Load time	The page load time is between 3-10 seconds.
		Accessibility	Technology support	- Ability of the website to support many browsers, device platforms .
3	**Understandability**	**Interactivity**	Users can interact with the content	Facilities to communicate with officials and comments be available.
		Operability	Easy access and use of the website.	Operability refers to the ability of users to operate and manage the Web site easily.
		Attractiveness	Consistent text layout, page layout, font size and font color.	The website user interface must be attractive and fun enough to encourage users to spend as long as possible to use the site.
4	**Content**	**Relevance**	Oriented information.	The information published on the website should be appropriate for users.
		Information accuracy	- Unambiguous - information's Grammar and	-The information provided on the site should not be ambiguous. -Avoid grammatical and spelling errors so

			spelling Error	as not to confuse users.
		Up-to-date information	Website update indicator. Up-to-date news.	- Up- to-date information should be made available. -The time when a page's content is created and updated must be displayed.
		Identity	Website's mission Ownership of the website. Logo (trade mark). Copyright information.	The identity of the website must be present when browsing for users.
		Author information	-Authors' information. -References to external sources	Information of the authors who wrote the pages on the site shall be available.
5	**Modifiability**	**Extensibility**	The website should be Extensible	The website accepts expansion and increased news growth.
		simplification control panel	Simplicity of the website dashboard	The website control panel is simple and easy to understand. A content management system is preferred.
		Restructuring	A change in the website view without changing the relationships between components	The website is a fundamental change going on without any change in the relationships between the different components or elements.

6	**Portability**	**Adaptability**	Adapt to various device	- The website should adapt based on the device used (Desktop - Laptop - Tap and Smartphone devices).
		Conformance	Conforms with different operating systems	The website works with all different operating systems (Windows, Mac, Android, etc ...) with the same efficiency.
7	**Maintainability**	**Testability**	The website should be testable	-A website can be tested in a particular test context (i.e. a website system, website module, requirements- or design document).
		Analyzability	Ability to analyze website performance	-The ability to analyze and diagnose the performance of the website and to know the causes of failure when it occurs and find out the exact reason for this.
8	**Navigation**	**Current Location**	Current location orientation	- Users should know where they are when they reach at one location in the website.
		Finding home page	Finding home page	-Returning to the home page from any point in the site must be obvious and easy.

3.5.1 Summary

The proposed model was created after a comprehensive study of the uses of news websites, key success factors for websites, quality factors, previous work related to news site evaluation and existing website quality models.

The model created consists of 8 high-level factors (functionality, efficiency, understandability, content, modifiability, portability, maintainability, and navigation). Each of the high-level factors is divided into a total of 22 sub-factors and criteria are defined to evaluate the factors.

3.6 Verification of the new model

In this project, a thorough analysis of website quality evaluation and usability literature was undertaken to understand website quality characteristics and quality models.This has helped to design a news website quality assessment model. The following methods have been proposed to evaluate the new evaluation model:

- Apply the proposed model to evaluate the website of Reportage as a case study using the questionnaire and analyze the questionnaire responses to demonstrate consistency of responses using reliability analysis methods such as Cronbach's alpha.
- Together some of user perception over the quality of the university website and compare their responses with the outcome of the WEBUSE analysis
- Using lists of requirements to judge whether the quality factors included in the quality evaluation framework exhibit the properties of an evaluation model.

The first and second options were used as the principal methods to verify the model [14].

It was not possible to make use of the third option, as it was not possible to find lists of requirements for evaluation model in the literature. Therefore, the first two options used for assessing the effectiveness of the proposed quality evaluation model are discussed in the following sections of this chapter.

Finally, important recognized quality standards are described and reviewed as important for assessing the quality factors selected for assessing the quality of news sites on the Internet.When designing the evaluation model,

the use of news sites and different types of users of these sites is determined. Website quality evaluation models, current programs and previous usability studies were analyzed to determine the key quality factors for evaluating news sites.Website design guidelines are used to carefully classify quality factors with similar inclusion in categories while eliminating excess quality factors.

The web design guidelines also helped determine the criteria for assessing quality factors.

3.7 Applying the proposed model in case study

The survey study consists of a questionnaire and interviews as the main tools for collecting data from the respondents., The purpose of the questionnaire is "measurement"[15].

The most effective method of data collection through surveys is the Likert scale and semantic preference scales. It is a psychometric method of analysis used to gather people's perception and attitude towards an issue. Respondents are given data to show their level of agreement on a 5-point, 7 or 10-point scale, from strongly agree to strongly disagree, and one of the central point’s indicates a neutral point [16].

A 5-point agreement scale is usually used as shown below on the Likert scale:

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

With a Likert scale, a positive or negative phrase is used to capture the respondents' level of agreement with the data.

The questionnaire was designed last and consisted of two parts, entirely composed of 29 questions. Its 21 components are designed to address the characteristics of the new Quality Factors introduced in the new assessment model.

The first part consisted of 6 questions that were used to collect demographic data on users (name, age, gender, work, device type and website frequency). Part 2 consists of 21 Likert questions on a 5-point scale (1 indicates strongly disagree and 5 strongly agree).

Since the goal of the case study was to demonstrate how effectively the proposed evaluation model performed better than the base model in evaluating a news website for the case study, emphasis was placed on questions designed to address new quality factors.

The high-level quality factors and their sub-quality factors are presented in the new quality assessment model and their subsequent questions designed to address the characteristics of each factor in the table below.

The gray cells in the table refer to the quality factors introduced in the new model but are not part of the ISO model.

Table 3.5: Quality factors in the new model and the ISO model

High level quality factors	Sub quality factors	ISO 9126-1	New model	Questions
Functionality	**Suitability**	√	√	1
	Security		√	2
	Correctness		√	3
Content	**Relevance**		√	9
	Information accuracy		√	10
	Up-to-date information		√	11
	Identity		√	12
	Author information		√	13
Efficiency	**Time behavior**	√	√	4
	Accessibility		√	5
Understandability	**Interactivity**	√	√	6
	Operability	√	√	7
	Attractiveness	√	√	8
Modifiability	**Extensibility**		√	14
	simplification control panel		√	15
	Restructuring		√	16
Portability	**Adaptability**		√	17
	Conformance		√	18
Maintainability	**Analyzability**		√	19
	Testability		√	20
Navigation	**Current Location**		√	21
	Finding home page		√	22

The full questionnaire is presented in Appendix A.

Before sending the survey to the selected sample of users, the survey was reviewed and improved using two methods:

• A beta test was conducted with five users. The feedback gathered from the pilot test helped improve some of the questions and review the questionnaire's overall structure[17].

• The Question Utility checklist was used to ensure that all the designed questions were effective enough to collect the required answer from visitors. The checklist consists of serious questions such as whether a particular item is easy to understand by the respondents or does it help in achieving the objectives of the survey.

The checklist is presented in Appendix A.The enhanced questionnaire used for the case study is presented in AppendixB.

Sample Selection

The respondents were users of the social networking site **Facebook.** The rationale for using the site in the case study is due to the fact that the proposed new model focuses on user perspectives.

Observance of morals

When conducting the survey, one of the things that must be taken into account is the privacy of the respondents. To preserve the privacy of the respondents, respondents were only asked to provide their information, provided that this information is only used in this study, and all participants agreed to the questionnaire before filling it out.

3.8 Data analysis method

Using quality factors in the proposed model, a small survey was conducted on the case study site (Reportage) to test the evaluation model designed and

at the same time to assess the quality of the site from the perspective of the current users [18].The questionnaire enabled to explore users' opinions on the use of **Reportage** website and to assess the effectiveness of the designed evaluation model.

3.8.1 Reliability analysis of element scores

The data collected through the questionnaire was analyzed based on simple statistical techniques using SPSS and Excel. The utility of the generated items was carefully analyzed before the questionnaire was distributed to the users. The reliability of the items in each of the quality factors is analyzed for the consistency of responses collected from the users using Cronbach's alpha and item-total correlation.Cronbach's alpha Cronbach's alpha analysis method is used to analyze the reliability of the consistency of the questionnaire scores elements across society [19].Total item correlation is used to understand the relationship between each item and the rest of the items on the scale. This helps compare the implicit effects of each item on the scale on the rest of the scale.

3.8.2 WEBUSE usability analysis method

A usability analysis method called WEBUSE was used to make a more valuable analysis for case study evaluation.The method has been applied in practice to assess the usability of sites using questionnaire in the form of Likert scale elements [20].In this classification method, questions are first grouped into categories based on the quality factors they address; A category that indicates one high-level quality factor. Question's method is used to coordinate Likert scale, which require users to show the level of their agreement to a given statement.

Table 3.6: Question response options and corresponding merit values

Response options	Merit points
Strongly Agree	1.00
Agree	0.75
Neutral	0.50
Disagree	0.25
Strongly Disagree	0

.

Then the Merit points for the high-level quality factors will be accumulated as follows:

$$x = \sum_{i=1} \frac{(\text{Merit point of each question of a high} - \text{level quality factor})}{(\text{Total number of questions for the quality factor})}$$

Finally, to calculate the overall quality of the site, the average of the high-level quality factors will be averaged as shown below:

$$\mathrm{Q} = \sum_{i=1}^{n} \mathrm{xi/n}$$

Where,

- x, is the average merit point of a high-level quality factor
- Y, is the total number of high-level quality factors,
- Q, is the mean average of the overall quality of the website
- n, is the total number of items in the questionnaire

The merit score values for the quality factors range from 0 to 1, and are divided into five categories to indicate five different levels of quality (bad, poor, medium, good, and excellent).The Merit Quality Score determines the quality levels of a site. The meanings associated with the domains differ in the literature. However, the following was adopted to analyze the responses collected for the case study site[21].

Table 3.7: Quality points and levels

Average merit Point, x	Quality level
$0 \leq x < 0.2$	Bad
$0.2 \leq x < 0.4$	Poor
$0.4 \leq x < 0.6$	moderate
$0.6 \leq x < 0.8$	Good
$0.8 \leq x < 1.0$	Excellent

Quality levels for the quality characteristics of the case study site were determined based on the aforementioned Quality Scores and Quality Levels for the WEBUSE method.

Chapter IV

Results & discussions

In this chapter, the effectiveness of the proposed model is discussed based on the results of the questionnaire answers used in the case study. The result showed that the item scores for most factors in the proposed model were consistent while the item scores for some factors showed poor consistency.

The case study was mainly used to evaluate the effectiveness of the proposed model [22].

A general description of the response is explained in this section followed by an item-score reliability analysis and the WEBUSE method.

4.1 Response rates

The survey was made available online from December 23 - December 27, 2020. Where the survey was posted on the social networking site Facebook, in addition to sending it to 20 people who follow news sites and permanently use the Internet.

Within four days, 15 correct answers to the questionnaire were collected, bringing the response rate to 75%.

Where the largest participation rates in the questionnaire were among (employees, students, and the content creator) The percentage of males participating in the questionnaire was 80% compared to 20% for females.

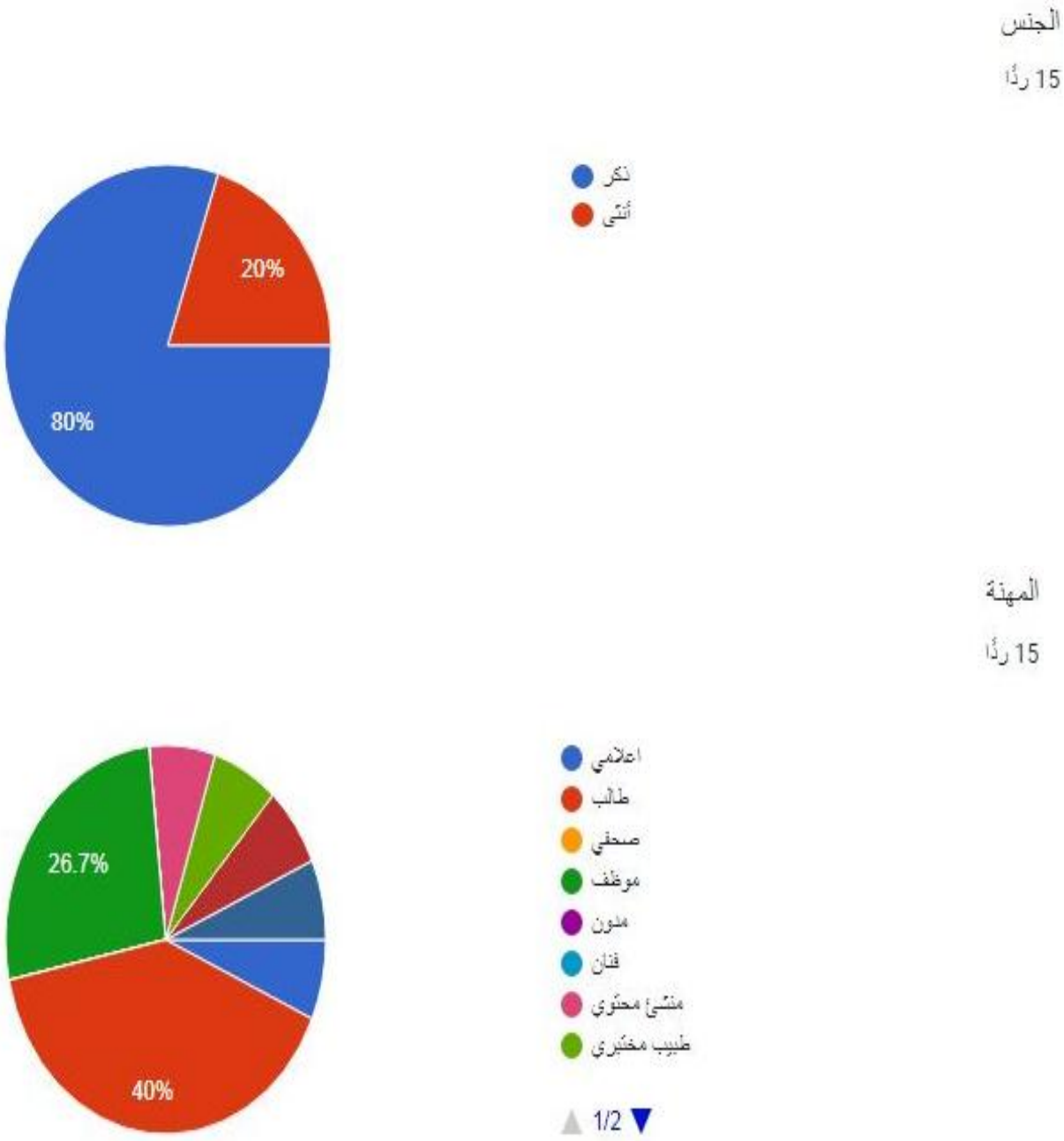

Figure 4.1 Study areas besides gender ratio

The frequency of user visits to the website varies in the aggregate response. The options given to choose from were daily, weekly, monthly, occasional and ever.Therefore, according to the responses collected, the highest

frequency of use was incidental with a response rate of 33.3%. While the rate of weekly visits to the site was 26.7% in second place, while the rate of visitation for the monthly and daily options was a response rate of 20%.

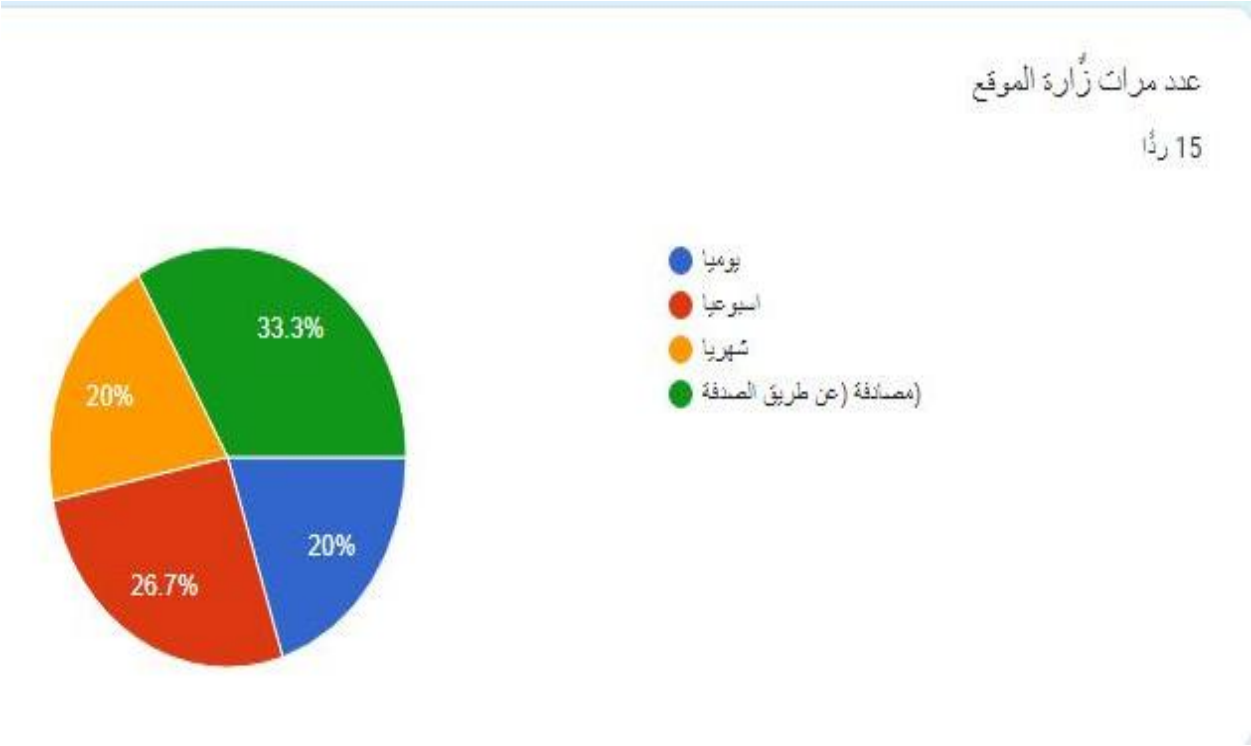

Figure4.2 Users' frequency of using reportage site

4.2. Reliability of the element grades for the new quality factors

In order to investigate the consistency of item scores for the new quality factors introduced by the new model, methods of statistical reliability analysis were used.Reliability analysis methods help in checking whether the measurement results are consistent.Reliability cannot be calculated precisely, it can only be estimated.

There are four common types of estimation methods of reliability:

- Inter-rater (inter-observer)
- Test-Retest
- Parallel-forms
- Internal consistency

The four types of reliability analysis methods define reliability in different ways. The most popular method of reliability analysis is the last method, internal consistency.This method takes a single measurement scale administered to a group of respondents at some point. Reliability of a scale is estimated by how well items reflecting the sameconcept respond with similar results.Several methods of measuring internal consistency can be used, one of which is the Cronbach Alpha method.

Cronbach's alpha[23] is a method mostly used to check the internal consistency of scores of items on a questionnaire. Its value ranges from 0 to 1. A high alpha (1) in the Cronbach questionnaire indicates a high internal consistency between the individual items on the questionnaire. The acceptable alpha coefficient is usually between (.7) and (1). The value

of Cronbach's alpha increases with the increase in internal association Between the elements increases.

By conducting a reliability analysis of the questions that were designed to address the new quality factors within the proposed framework, it was possible to identify which items were answered with a consistent answer and which ones did not measure anything similar to the rest of the items. Other items.

The reliability coefficients for the new factor questions are presented in the proposed framework with an explanation of their meanings.

Reliability Statistics

Table 4.1: Total Cronbach's alpha

Cronbach's Alpha	Number of Items
.959	20

Cronbach's alpha coefficient for a total of 20 items is .959 as also shown in Appendix D. This means that there is a good consistency between the questions.

The table below consists of four columns and the last two columns give the most important information regarding the consistency of each question. It indicates a measure if the item was deleted to the average value of the scale (questionnaire), which would be in the case of an item or delete one question.

Scale variance similarly refers to survey variance if the question item is omitted.

Corrected Item-Total correlation it indicates the association between one item and the sum of the remaining items on the questionnaire. According to the literature, the total well-corrected items should not have the correlation value close to 0. The Cronbach alpha if the item is deleted indicates the Cronbach's alpha value for the scale (the questionnaire) if a specific item is deleted.The alpha value should not exceed the Cronbach item for each item (question) the Cronbach alpha value for the scale. If the Cronbach's Alpha if the item is omitted is higher than the questionnaire's alpha value, then the item should be discarded, because it does not measure a consistent value like the rest of the questions. The table below shows reliability statistics for component scores for the new quality factors for the proposed model.

Table 4.2: Reliability statistics of the item scores of the new quality factors of the proposed model

Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation	Scale Variance if Item Deleted	Scale Mean if Item Deleted	الاسئلة	عوامل الجودة	no
.957	. 776	155.412	37.21	يمعلالموقع تعمل بصورة طيبة (دون مشاكل في العرض)	وظيفية الموقع	1
.963	. 422	154.462	36.00	الموقع يطلب اذن للوصول لمعلوماتك الشخصية		
.955	. 919	150.379	36.93	يستجيب الموقع لكافة احداث المستخدم دون مشاكل		
.956	. 769	150.220	36.71	يستغرق الموقع زمن قليل لعرض الصفحات الموقع	فاعلية الموقع	2
.956	. 791	148.132	36.86	يعمل الموقع علي كافة المتصفحات		

3	مفهومية الموقع	يدعم الموقع تفاعل الزوار ويقبل مشاركاتهم	37.00	154.000	. 798	.956
		سهولة استخدام والتعامل مع الموقع	37.07	156.533	. 620	.958
		سهولة الوصول للمعلومات بالموقع	36.86	152.901	. 720	.957
		جاذبية تصميم الموقع وخلوه من التلوث البصري	37.00	153.846	. 807	.956
4	محتوي الموقع	وضوح الاخبار(الصياغة) الموجودة بالموقع	37.07	154.379	. 744	.957
		الموقع يقدم معلومات واخبار متصلة بتصنيفه (فنية ثقافية)	36.71	145.912	. 719	.958
		الاخبار الموجودة بالموقع حديثة ومتجددة باستمرار	36.79	151.412	. 845	.955
		اسم الموقع والشعار متاحة ومتوفرة في كافة صفحات الموقع	37.07	153.764	. 780	.956
		اسم الناشر (صاحب الخبر) موجود في الاخبار المنشورة بالموقع	37.00	151.231	. 835	.955
5	قابلية الموقعللنتقل	يمتاز الموقع بالعمل علي كافة الاجهزة	36.79	155.104	. 646	.958
		يمتاز الموقع بالعمل علي كافة انظمة التشغيل (ويندوز-لينكس)	36.86	151.978	. 879	.955
6	قابليةالموقع للصيانة	يستجيبالموقعللاختبارفيسياقاختبارمعين	36.50	152.577	.661	.958
		يستجيب الموقعالويبلبرامجومواقعتحليلالأداء المختلفة	36.57	154.418	.535	.960
7	الانتقال داخل الموقع	يمكننيتحديدمكانك في الموقععلىالفورأثناءتصفح الموقع	36.86	147.363	.825	.955
		سهولة الرجوعإلىالصفحةالرئيسيةمنأيصفحةأخربفيالم وقع	37.07	150.995	735.	.957

The table below shows a reliability analysis of the major quality factors and sub-factors of the efficiency characteristics of the new model.

We find that all the answers to the questions use Cronbach's alpha, which is less than the .959 given for the scale except for two sub-quality factors.

Which is good and shows that the item scores for the quality factor competency indicate a good consistency between the item's measure value and the rest of the overall scale value.

1. **Functionality**

The table below illustrates the reliability analysis of the elements designed to address the sub-factors of the content characteristics in the new model.

Table4.3: Cronbach's alpha results for functionality sub quality factors questions

Sub quality factor of Functionality	question	Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation
Suitability	يمعل الموقع تعمل بصورة طيبة (دون مشاكل في العرض)	**.957**	**. 776**
security	الموقع يطلب اذن للوصول لمعلوماتك الشخصية	**.963**	**. 422**
correctness	يستجيب الموقع لكافة احداث المستخدم دون مشاكل	**.955**	**. 919**

We find that all answers to QF functions questions use Cronbach's alpha, which is less than the 959 given for the scale.

With the exception of questions related to the security sub-quality factor, which was slightly greater than Cronbach's alpha for the aggregate scale. 4, the component index must therefore be revised to verify why the answers were different.

After verifying the reasons that made the safety sub-factor a little greater, it was found that the question was not understood in the intended manner, which is why the question must be clarified or attached to an explanation of the question that helps in understanding it.

2. Maintainability

Maintainability is one of the main quality factors for news websites, as maintainability as a quality factor must be found in this type of website. Maintainability contains two sub-quality characteristics (Analyzability, Testability).

The table below illustrates a reliability analysis of the components designed to address the sub-factors of the maintainability characteristics of the new model.

Table4.4: Cronbach's alpha results for maintainability sub quality factors questions

Sub quality factor of Maintainability	Question	Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation
Testability	يستجيب الموقع للاختبار في سياق اختبار معين	.958	.661
Analyzability	يستجيب الموقع الويب لبرامج ومواقع تحليل الأداء المختلفة	.960	.535

We find that all answers to quality factor functions questions use Cronbach's alpha, which is less than the 959 given for the scale.

With the exception of questions regarding the security sub-quality factor, which was slightly greater than Cronbach's alpha for the overall scale of 1, the component index must therefore be revised to verify why the answers were different.

After investigating the reasons that made the safety sub-factor a little greater, it was found that the question was not understood as intended, so that the question must be re-clarified or attached to an explanation of the question that helps in understanding it.

4.3 Using WEBUSE analysis method

After completing the questionnaire analysis by the method of Alpha Cronbach, and to give a more valuable analysis of the responses, we use the method of usability classification from similar previous work. This classification method is called website usability (WEBUSE) [24]. The method uses Likert scale questions to assess the usability level of websites.

To be able to use this method, the questions for each of the eight high-level quality factors are grouped under one category for the purpose of analysis. Thus, it is possible to know the quality level of the case study website in terms of the eight high-level quality factors.

Table4.5: Results of the WEBUSE analysis method

High level quality factors	Sub quality factors	Merit value	Quality level
Functionality	Suitability	0.89	Excellent
	Security	0.62	Moderate
	Correctness	0.78	Good
Content	Relevance	0.78	Good
	Information accuracy	0.82	Excellent
	Up-to-date information	0.85	Excellent
	Identity	0.84	Excellent
	Author information	0.82	Excellent
Efficiency	Time behavior	0.81	Excellent
	Accessibility	0.86	Excellent
Understandability	Interactivity	0.84	Excellent
	Operability	0.81	Excellent
	Attractiveness	0.86	Excellent
Modifiability	Extensibility	0.80	Excellent
	simplification control panel	0.80	Excellent
	Restructuring	0.60	Moderate
Portability	Adaptability	0.85	Excellent
	Conformance	0.81	Excellent
Maintainability	Analyzability	0.77	Good
	Testability	0.76	Good
Navigation	Current Location	0.72	Good
	Finding home page	0.82	Excellent

The following is an attempt to provide an explanation of the results of the analysis WEBUSE contained in the table 4.5 and in detail for each of the quality factors as follows.

1. **Functionality**

The results of the site's functional factor showed relatively good results, as the results showed that the site's visitors find it easy to navigate within the various parts of the site without problems, and this means that the site is completely free of programming problems, while visitors see that they do not agree to the site's access to their personal data and this is what the site does not do. It works without the need for user data. Overall, the results of the WEBUSE analysis indicated that the website had good reliability quality.

Results of WEBUSE analysis indicated that the site had quality followed by a Functionality quality factor.

2. **Efficiency**

The results of the WEBUSE analysis of the quality factor showed the efficiency for the site excellent results as the first sub-characteristic of quality was the behavior of time and was described as excellent by visitors as the time taken for the site to display the pages is rate and appropriate The second sub-characteristic of the quality was accessibility, as it was also described as excellent, as visitors did not find it difficult to access because they can access the website from different hardware platforms, mobile devices and browsers.

3. **Content**

The results of the content quality factor showed that the site has the quality level for the accuracy of the information and its suitability in the reportage

website with a good to excellent quality level, as it showed the first sub-characteristic of the quality of relevance of the news on the site with the nature and classification of the site from the viewpoint of the visitors who described it as excellent.

The second factor in the sub-quality of the content is the accuracy of the information that visitors described as good, according to their appreciation. The third factor for the sub-quality of the content is Up-to-date information, which the visitors described as excellent due to what the visitors found from the news that kept up with the site, the fourth factor is the identity of the site, which was excellent from the viewpoint of the site's visitors as the site logo and name are present on all pages, the last factors of the sub-quality of the content It is the author's information that the visitors described as excellent, as the author's information is available in all news published on the site.

4. Understandability

The results of WEBUSE's Quality Factor Analysis of the website's understandability showed an overall excellent quality level. Whereas, the site's visitors expressed their satisfaction with the primary sub-quality of interaction, as visitors do not find it difficult to interact with the materials published on the site.

The second sub-characteristics of quality was operability, which was also described as excellent, as operating the site, browsing it, and interacting with its news is easy and simple, and does not require guidance or learning. The third sub-characteristic of the quality was the attractiveness, which was also excellent, as the site is simple in design and the colors are consistent, according to the visitors.

5. Portability

The results of WEBUSE's analysis of the quality factor, portability of the website, showed an overall excellent quality level.

Whereas, the site's visitors showed their satisfaction with the primary sub-feature of quality, which is the Adaptability as the site works on various devices (desktop computer - laptop - smart phone) without problems, as explained by site visitors, as visitors do not find it difficult to work with the site or Dealing with him from different devices with the same efficiency. The second sub-characteristics of quality were Conformance, which was also described as excellent, as the site works in all operating systems in complete Conformance and without any problems.

6. Maintainability

The results of WEBUSE's Quality Factor analysis of the website maintainability showed a good overall quality level.

Whereas, the site's visitors showed their satisfaction with the primary sub-feature of quality, which is analyzability, as the site responds to the test in a specific context without problems.

The second sub-characteristic of quality was testability, which was also described as good, as the site responds to programs and sites that analyze different performance without any problems.

7. Modifiability

The results of WEBUSE's analysis of the modifiability quality factor of the website showed a good to excellent overall quality level.

Whereas, the management of the site expressed its satisfaction with the primary sub-characteristic of quality represented in expansion, as they made

it clear that the site accepts the daily expansion and increase of news and events without problems.

The second of the sub-characteristics of the quality was a simplification control panel, where they explained that the dashboard is a WordPress content management system for its ease and simplicity.

8. Navigation

The results of the WEBUSE analysis of the quality factor of the navigation of the website showed a level of good to excellent overall quality. Whereas, the site's visitors showed their satisfaction with the first sub-feature of quality represented by Finding home page that was described as excellent, as the site visitor does not have any difficulty returning or returning to the site's home page from any other page.

The second sub-characteristics of the quality was the current site, which means knowing your current Location within the site immediately while browsing the site. Some visitors found difficulty, but in general it was described as good.

Table 4.6: Quality merit and levels of reportage website

High level quality factors	Final quality merit	Quality level
Functionality	**0.76**	**Good**
Content	**0.82**	**Excellent**
Efficiency	**0.83**	**Excellent**
Understandability	**0.83**	**Excellent**
Modifiability	**0.73**	**Good**
Portability	**0.83**	**Excellent**
Maintainability	**0.76**	**Good**
Navigation	**0.77**	**Good**
Average	**0.79**	**Good**

The result of WEBUSE analysis showed that the website at the moment is of good to excellent quality and the visitors are completely satisfied with the quality of the website.

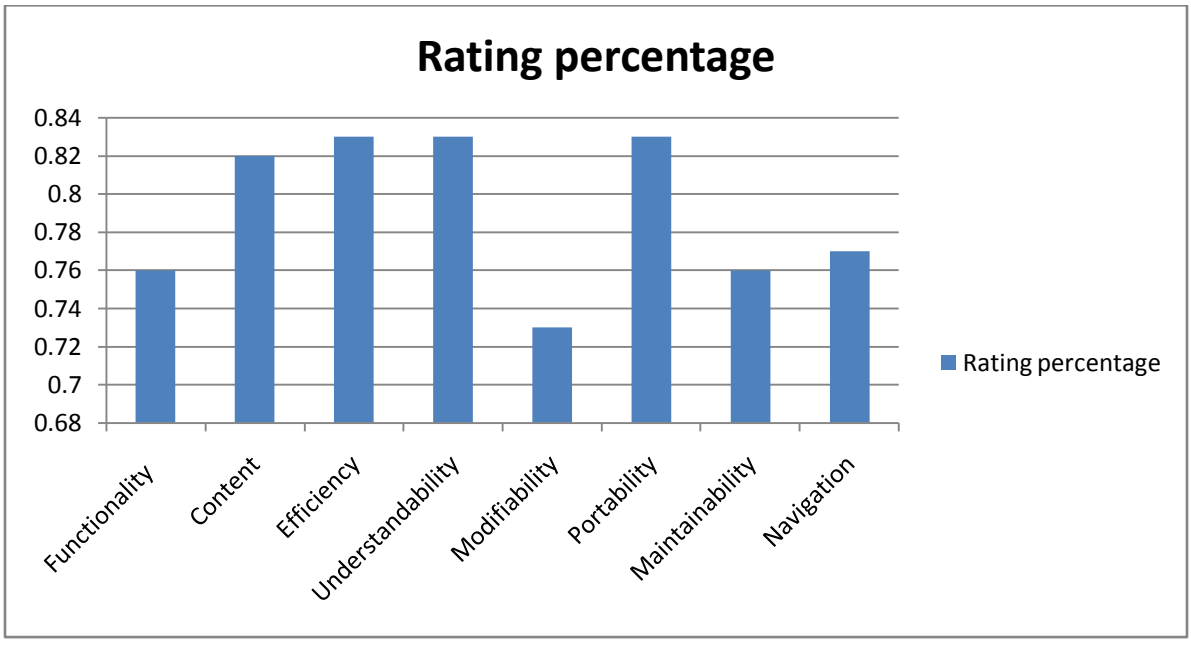

Figure4.3 Quality merit points for quality factors

4.4 Comparison of visitor's perception of the quality of Reportage website and results of WEBUSE analysis

Comparison of visitors perception of reportage website quality with results of WEBUSE analysis Aside from Likert-type questions, visitors were asked to rate the overall quality [25] of the reportage website in a scale comparable to the quality levels of the WEBUSE method (Bad, Weak, Medium, Good and Excellent).

The responses collected showed that 53.3% of visitors rated them the website quality is excellent, rated the highest.

26.7% of visitors rated the site as of moderate quality, while 20% of visitors rated the site as very good quality.

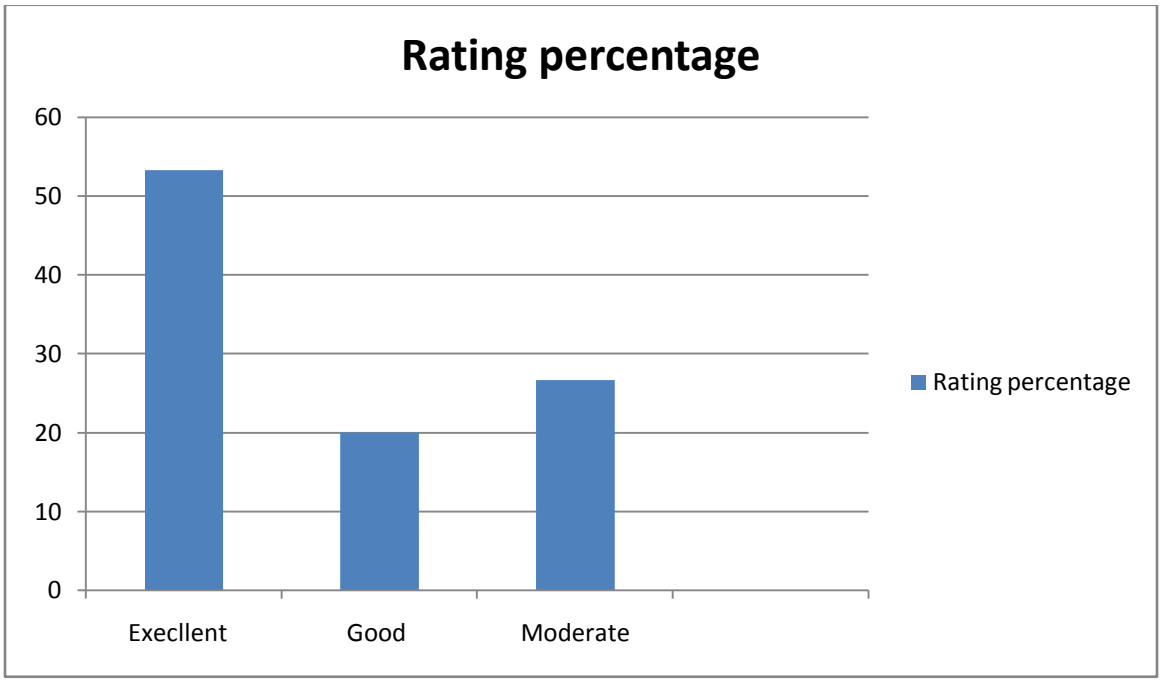

Figure 4.4 Results of quality rating of reportage website

4.5. Summary of the results

Although testing the evaluation model is the first time to test it on the reportage website, the results of the case study in this letter showed that the new model is more effective.

This is due to the fact that the new evaluation model consists of appropriate quality characteristics for the use of news sites as a result of years of work and experience acquired through working and studying this type of website. This is clear evident in the evaluation results of the reportage website.

Using the proposed quality evaluation form, where all the basic features were evaluated, beginning with functionality and ending with site navigation.

Where the result of the case study gave an idea of the characteristics of the reportage site and noted some observations of the visitors of some aspects that need improvement in the site such as maintainability, other than that all the features of the site work with excellence and have won the satisfaction of visitors.

We also note that all the factors that have been added in this model have become important, and none of them can be dispensed with when evaluating this type of site.

Based on the result of the reliability analysis, the sub-factors such as: safety and portability of analysis, in particular, showed deviations or contradictions from the rest of the factors, and work must be done to address these discrepancies either by reviewing the site or re-launching the questionnaire to actually confirm them and focus and work on Improve these factors. On the other hand, it was found that the evaluation model is appropriate for all news sites due to the quality factors that have been carefully selected and

tested.

A website quality assessment can be done at any stage of the website design. Studies indicate that 80% of the cost of web design and maintenance is spent after designing and implementing websites.Indicates that this percentage cost can be reduced by evaluating the website at every stage of the website design cycle.The idea is that the job of designing the site is done on a frequent basis.In each cycle, the website is tested, the feedback is taken into consideration and processed in one cycle by the next cycle resulting in a product of improved quality.

Chapter V

Conclusions and Recommendations for future work

In this chapter recommendations for future work are explained in the Conclusion and Recommendation sections respectively.

5.1. Conclusions

The main objective of this project was to design a quality assessment form for news sites to achieve this goal. A comprehensive study of everything related to the literature on quality factors for programs and websites was done to determine the quality factors and standards required for all sites, including studying the most important part of the proposed quality model. The study showed that the majority of existing software and website quality evaluation forms do not take into account the specific characteristics of the website program or the business area that is considered when evaluating. Moreover, it does not sufficiently include users' own point of view for the purpose of evaluation.

Among the models reviewed, the ISO 9126-1 Quality Model was found to be more comprehensive than the rest of the models in terms of method, as it categorizes the quality factors and the descriptions, they provide for the high-level quality factors and sub-quality factors.

Therefore, based on the site's news evaluation work, the success factors of the news websites in general and the news website design guidelines were studied to aid in the process of determining the quality factors needed to evaluate the news site.

Taking the quality perspective from users and the extent of "user satisfaction" as it became a definition of product quality, and eight high-level quality factors (three of them taken directly from the basic model and five taken from the other models studied and the characteristics of news sites) and accordingly 22 sites were identified.

Sub-quality feature for news sites.

Since this project focuses on news sites, therefore content is the basis on which the quality model is built, along with other equally important quality factors, such as portability and maintainability.

The necessary quality factors and the sub-quality factors identified to rate the news sites are arranged in a star format, with all eight selected quality factors being shown.

in order to verify the model, it was used to evaluate apply the proposed model to a case study news website to assess how the model performed compared to the base model.

To achieve this goal, the proposed model was used to assess the quality of the reportage electronic newspaper website through a questionnaire distributed on various social media sites.

The Likert scale questions are designed that address quality factors and sub-factors of the proposed quality evaluation model.

And 15 people participated in completing the questionnaire, of different professions, including employees, media professionals and students.

A large part of them are regular site visitors. The survey helped them explore the quality of the reportage website.

The third objective of this thesis project was to evaluate the effectiveness of the proposed quality assessment model.

To achieve this goal, two methods were used.

The first method was to analyze the reliability of the question item scores used to assess the case study site using Cronbach's alpha.

The second method was to compare the quality assessment provided by the visitors regarding their satisfaction with using the reportage website and assessing the quality of the reportage website as defined by adopting a website usability analysis method calledWEBUSE.

The reliability of the questionnaire item scores was analyzed using the Cronbach alpha method.

Using this method, the internal consistency analysis of the item scores in the questionnaire showed that most of the quality factors and sub factors in the proposed model are ranked well according to the relationship that exists between the quality factors.

This was reflected in the visitor responses gathered in the case study.

The responses collected for most of the quality factors are consistent across the total number of students who participated in the case study.

However, there were two cases where responses to some sub-quality factors showed little discrepancy from the total answers.

These sub-quality factors were safety and Analyzability High level agents.

After that, the outcome of the case study was reviewed in general terms, showing that the new quality factors included in the proposed model allowed the visitors to properly evaluate the site of the case study.

This was noted in the results of the visitors ’evaluation of the overall quality of the reportage site and the final results of the WEBUSE analysis.

A large number of visitors rated the website as having excellent quality, and at the same time the result of the analysis of students' responses obtained through the WEBUSE method was a good quality to excellent as well.

5.2. Recommendations

The project dealt with the model of the quality assessment of news sites from a general perspective, where the viewpoint of a different group of social media users was addressed in general, and the diversity of user jobs helped expand the scope of the project, and addressed quality from multiple perspectives.

It is well known that when designing any type of web site, there must be a basic purpose for the site, knowing that it is not possible to meet all the requirements or understand them in the required manner except rarely. When trying to evaluate the quality of news sites, the purpose of the evaluation must be determined, and the perspective through which the website is evaluated.

There are certainly some quality factors that will have a much greater importance than the rest of the factors.

Hence, it becomes important to determine the critical factors for the qualityof the website under consideration.

Therefore, the following points are recommended for future research work:

• Focusing on a specific perspective in the evaluation. Before starting the quality evaluation process for the site, the perspective must be defined through which the site will be evaluated.

The evaluation may be from the viewpoint of the users or from the point of view of the body responsible for the sites in the country or it may be from

the point of view of the site management. Perspective must be defined before beginning the website evaluation process.

• Focusing on having one group of users, since the nature of news sites monitor news and coverage of press conferences and events, therefore one group of users who have a connection to the profession of journalism must be identified because their opinion and evaluation will be useful, especially in the basic quality factor of the form (content). Visitors or users have different views. For news, how to narrate it and know the editorial policy (wording) in which the website works.

Different news websites have different quality characteristics from other types of websites and are important at the same time.

• Attempting to start the evaluation process with the beginning of the site design, because this saves effort and time, and the site is presented in a manner that satisfies the visitors, whose importance also varies for them with different types.

It is important to distinguish early on between the quality factors that are very important to news sites and which are less important. This is done by measuring each of the quality factors in the framework based on the need and expectations of different user groups.

• The use of factor analysis will assist in obtaining a well-optimized and structured list of high-level quality factors and sub-quality factors.

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Appendices

Appendix A - Questionnaire

This appendix contains the final questionnaire used as a way to collect data from students.

Designed based on quality factors and proposed framework parameters. The questionnaire contains 29 questions grouped into two parts. The first part contained again the basic questions.

Part Two contained eleven Likert questions on a 5-point scale, (1) indicating strongly disagree and (5) indicating strongly agree.

الجزء الاول

يحتوي على معلومات اساسية الرجاء الاجابة عليها

الاسم *

نص الإجابة القصير

العمر

نص الإجابة القصير

الجنس *

- ذكر
- أنثى

قسم 2 من 2

الجزء الثاني

في هذا الجزء نتطرق لاختبار عناصر الجودة المقترحة في شكل اسئلة
الرجاء اختيار الاجابة التي تعكس اختيارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

وظيفية الموقع

الرجاء اختيار الاجابة التي تعكس اختيارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

تعمل وظائف الموقع بصورة طيبة (دون مشاكل في العرض)

خيارات متعددة

- موافق جدا
- موافق
- محايد
- غير موافق

لا يطلب الموقع منك اذن للوصول لمعلوماتك الشخصية

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

يستجيب الموقع لكافة احداث المستخدم دون مشاكل

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

فاعلية الموقع

الرجاء اختيار الاجابة التي تعكس اختيارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

الزمن المستغرق لعرض صفحات الموقع قليل

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

يعمل الموقع علي كافة المتصفحات

- موافق جدا
- موافق
- محايد

مفهومية الموقع

الرجاء اختيار الاجابة التي تعكس اختبارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

يدعم الموقع تفاعل الزوار ويقبل مشاركاتهم

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

سهولة استخدام الموقع والتعامل معه

- موافق جدا
- موافق
- محايد

سهولة استخدام الموقع والتعامل معه

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

جاذبية تصميم الموقع وبعده عن(التلوث البصري)

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

محتوي الموقع

الرجاء اختيار الاجابة التي تعكس اختيارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

وضوح الاخبار(الصياغة) الموجودة بالموقع

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

الموقع يقدم معلومات واخبار متصلة بتصنيفه (فنية ثقافية)

- موافق جدا
- موافق
- محايد

الاخبار الموجودة بالموقع حديثة ومتجددة باستمرار

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

اسم الموقع والشعار متاحة ومتوفرة في كافة صفحات الموقع

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

اسم الناشر (صاحب الخبر) موجود في الاخبار المنشورة بالموقع

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

قابلية التنقل الموقع (محمولية الموقع)

الرجاء اختيار الاجابة التي تعكس اختبارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

يمتاز الموقع بالعمل على كافة انواع الاجهزة

- موافق جدا
- موافق
- محايد

يمتاز الموقع بالعمل علي كافة انظمة التشغيل المختلفة (ويندوز-لينكس-ماكنتوش)

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

قابلية الموقع للصيانة

الرجاء اختيار الاجابة التي تعكس اختيارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

يستجيب الموقع للاختبار في سياق اختبار معين

- موافق جدا
- موافق
- محايد

يستجيب الموقع لبرامج ومواقع تحليل الأداء المختلفة

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

التنقل داخل الموقع

الرجاء اختيار الاجابة التي تعكس اختيارك علما بان الخيارات هي
(موافق جدا - موافق - محايد - غير موافق -غير موافق اطلاقا)

يمكنك تحديد مكانك داخل الموقع على الفور أثناء التصفح

- موافق جدا
- موافق
- محايد

سهولة الرجوع إلى الصفحة الرئيسية من أي صفحة أخرى في الموقع

- موافق جدا
- موافق
- محايد
- غير موافق
- غير موافق اطلاقا

تقييم الجودة الاجمالي للموقع من وجهة نظرك؟ *

- ممتاز
- جيد جدا
- جيد
- مقبول
- ضعيف

Appendix B - Frequency table for basic questions

Table 5.1: Frequency table for basic questions

Sex			
	Frequency	Percent	Valid Percent
male	12	80	80
female	3	20	20
total	15	100	100
job			
طالب	6	40	40
منشئ محتوي	1	6.6	6.6
طبيب مختبري	1	6.6	6.6
موظف	4	26.7	26.7
Business man	1	6.6	6.6
اعمال حره	1	6.6	6.6
اعلامي	1	6.6	6.6
total	15	100	100
How often do you visit the website?			
يوميا		20	20
اسبوعيا		26.7	26.7
شهريا		20	20
عن طريق الصدفة (مصادفة)		33.3	33.3
total		100	100

Appendix c- Screenshots of pages of reportage website

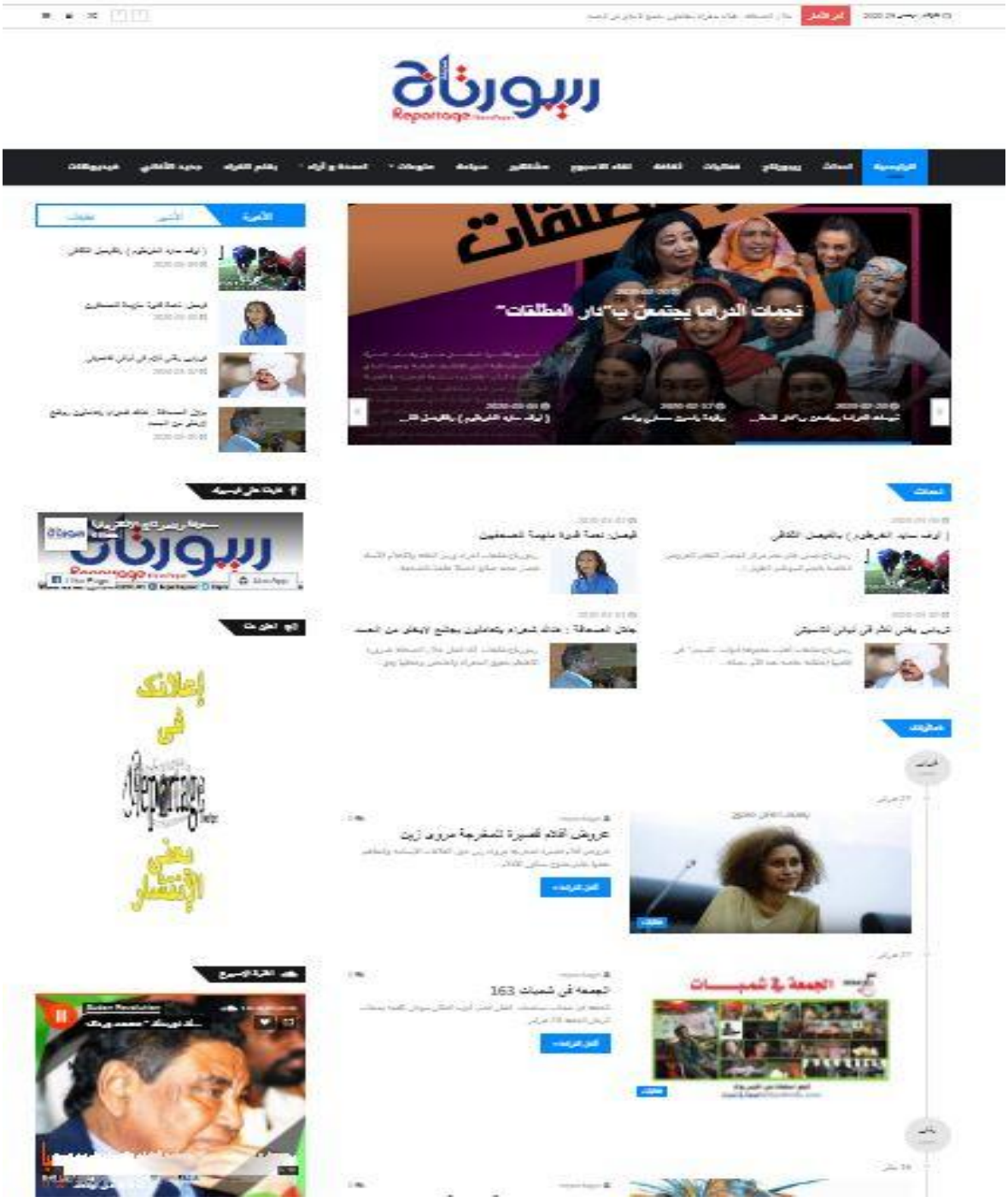
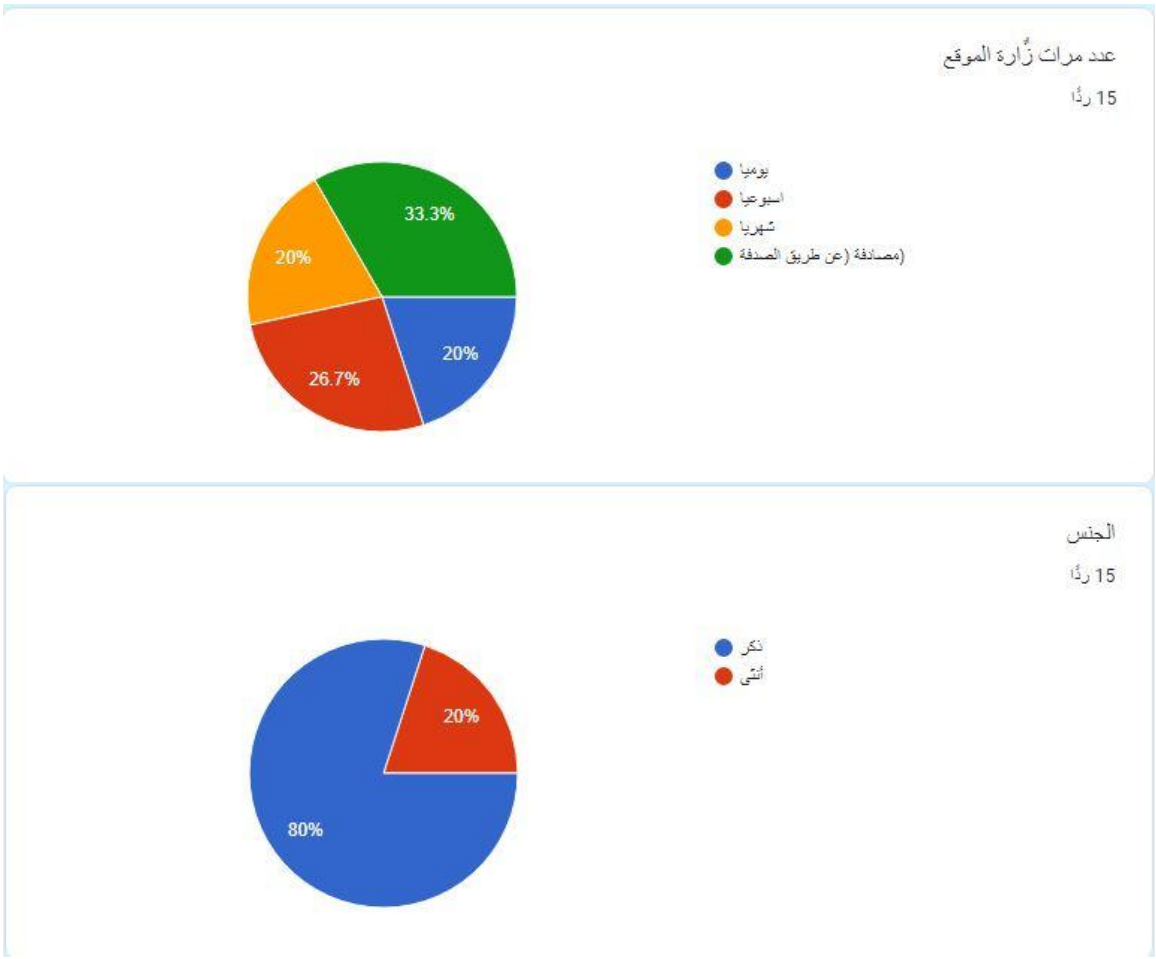


Figure 5.1 reportage Website Home page

Figure 5.2 news page in reportage website

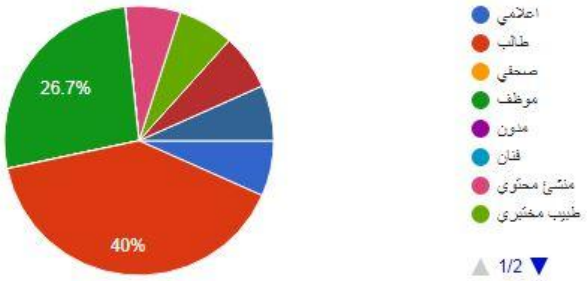
Appendix D - Results of responses

This appendix contains the results of responses to the Likert type questions used to evaluate the reportage website.



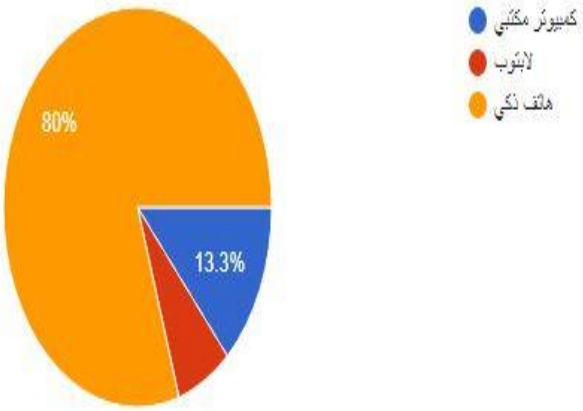
المهنة

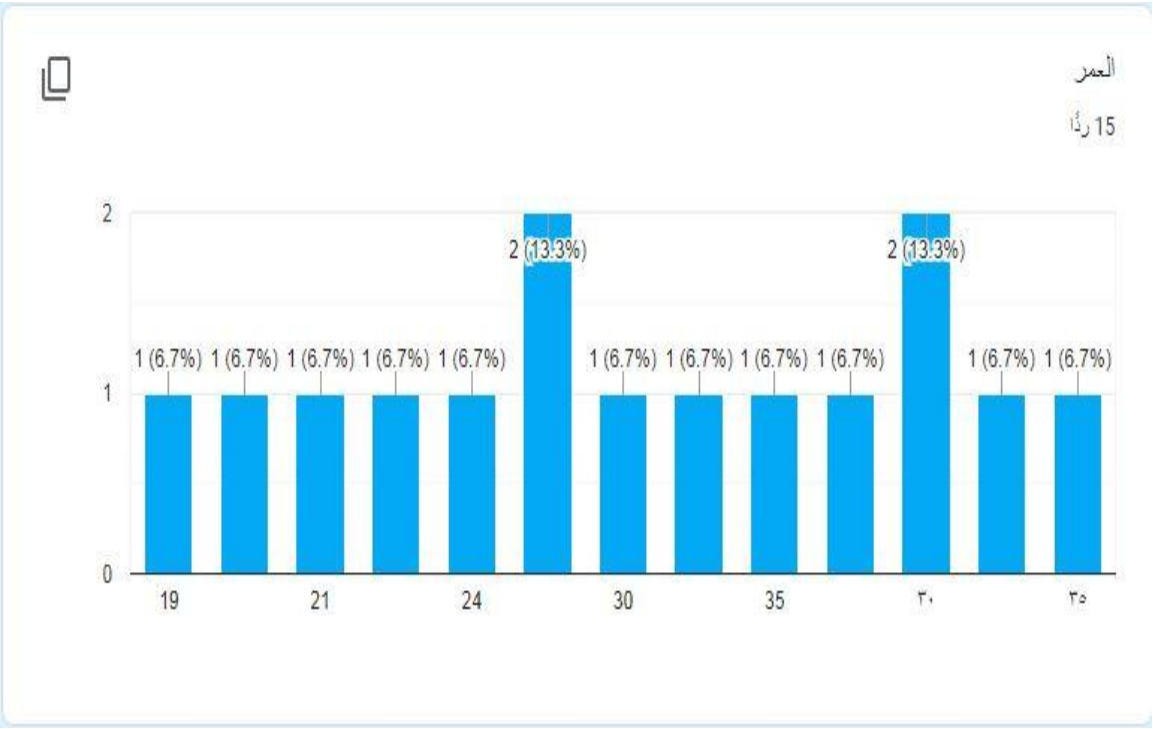
15 ردًا



نوع الجهاز المستخدم لزيارة الموقع؟

15 ردًا

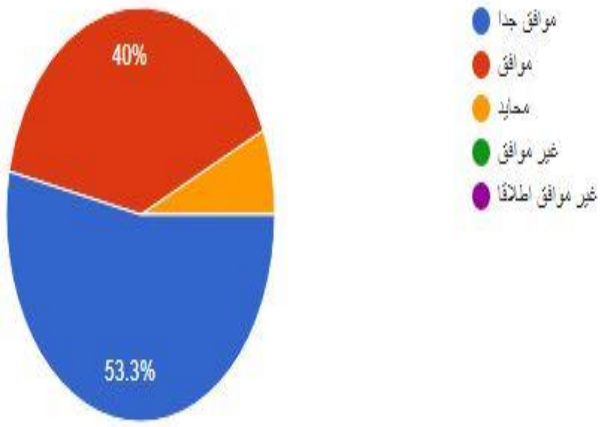



العمر
15 ردًا
2
1
0
1 (6.7%)
1 (6.7%)
1 (6.7%)
1 (6.7%)
1 (6.7%)
2 (13.3%)
1 (6.7%)
1 (6.7%)
1 (6.7%)
1 (6.7%)
2 (13.3%)
1 (6.7%)
1 (6.7%)
19
21
24
30
35
٣٠
٣٥

وظيفية الموقع

تعمل وظائف الموقع بصورة طيبة (دون مشاكل في العرض)

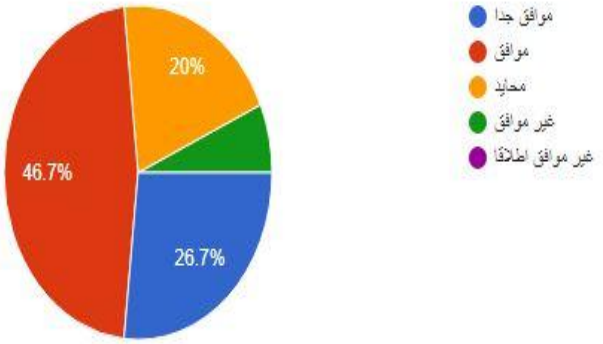
15 ردًا



فاعلية الموقع

الزمن المستغرق لعرض صفحات الموقع قليل

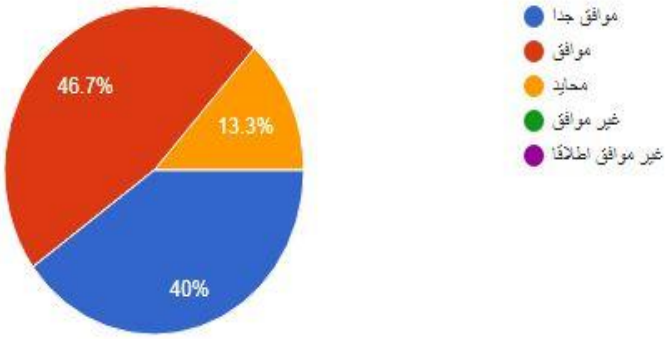
15 ردًا



مفهومية الموقع

يدعم الموقع تفاعل الزوار ويقبل مشاركاتهم

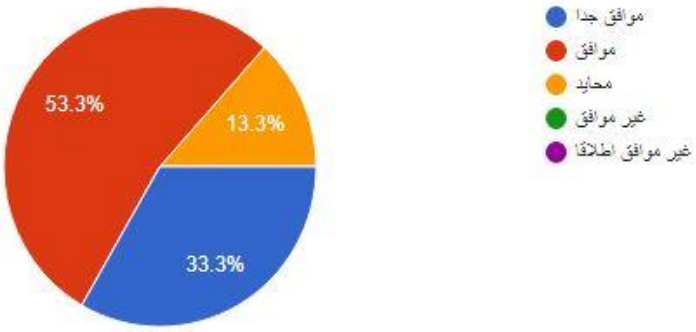
15 ردًا



محتوي الموقع

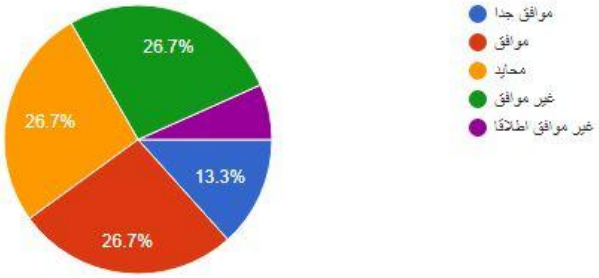
وضوح الاخبار(الصياغة) الموجودة بالموقع

15 ردًا



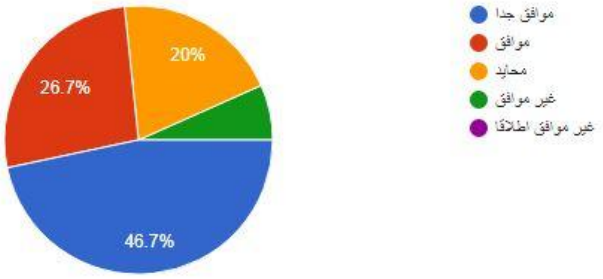
لا يطلب الموقع منك اذن للوصول لمعلوماتك الشخصية

15 ردًا



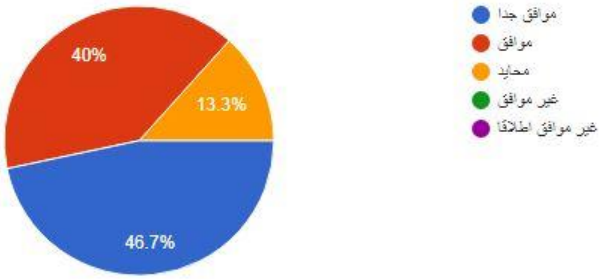
يعمل الموقع على كافة المتصفحات

15 ردًا



سهولة استخدام الموقع والتعامل معه

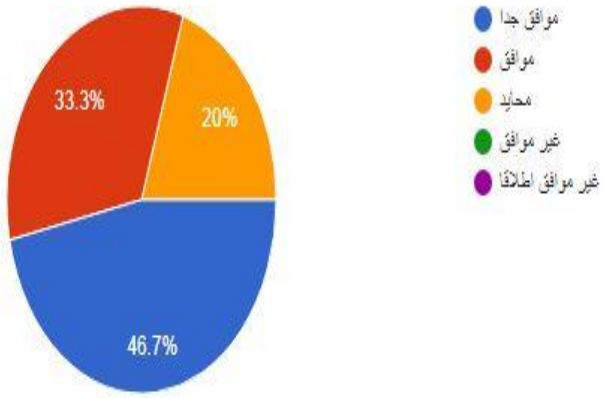
15 ردًا



قابلية التنقل الموقع (محمولية الموقع)

يمتاز الموقع بالعمل على كافة انواع الاجهزة

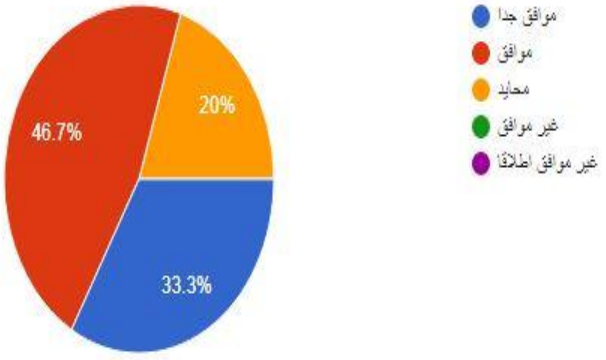
15 ردًا



قابلية الموقع للصيانة

يستجيب الموقع للاختبار في سياق اختبار معين

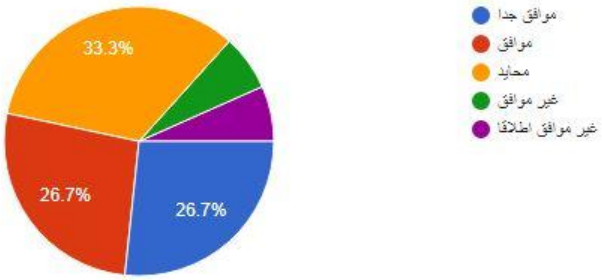
15 ردًا



التنقل داخل الموقع

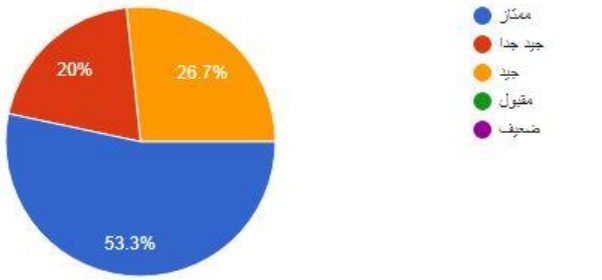
يمكنك تحديد مكانك داخل الموقع على الفور أثناء التصفح

15 ردًا



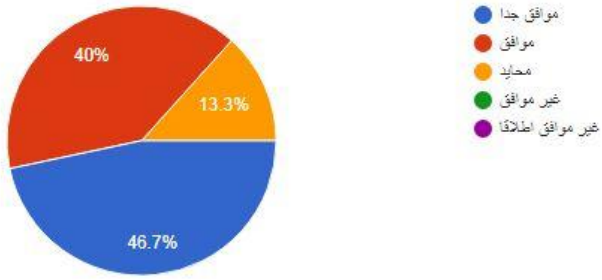
تقييم الجودة الاجمالي للموقع من وجهة نظرك؟

15 ردًا



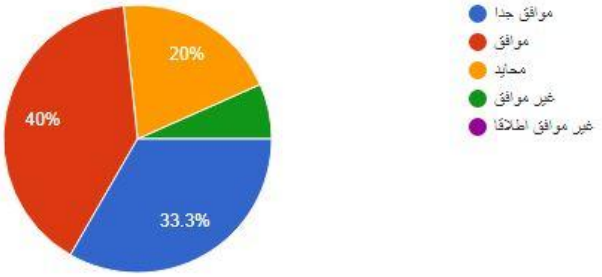
الموقع يقدم معلومات واخبار متصلة بتصنيفه (فنية ثقافية)

15 ردًا



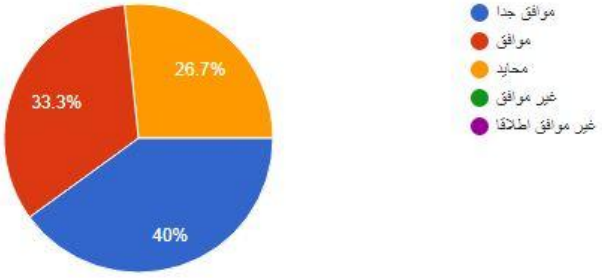
يستجيب الموقع لكافة احداث المستخدم دون مشاكل

15 ردًا



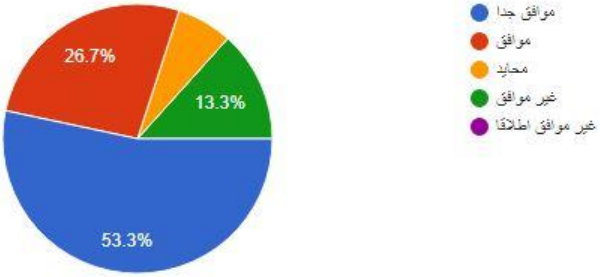
جاذبية تصميم الموقع وبعده عن(التلوث البصري)

15 ردًا



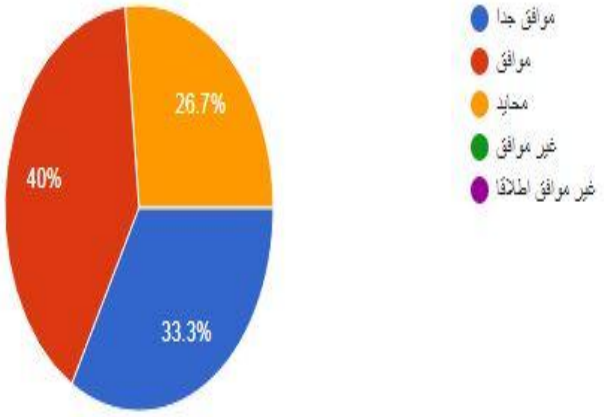
الاخبار الموجودة بالموقع حديثة ومتجددة باستمرار

15 ردًا



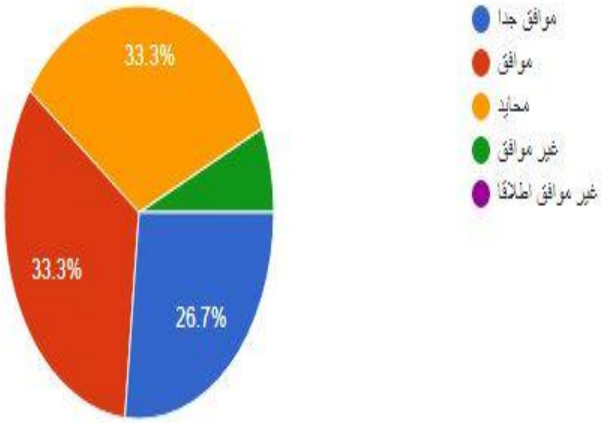
يمتاز الموقع بالعمل علي كافة انظمة التشغيل المختلفة (ويندوز-لينكس-ماكنتوش)

15 ردًا



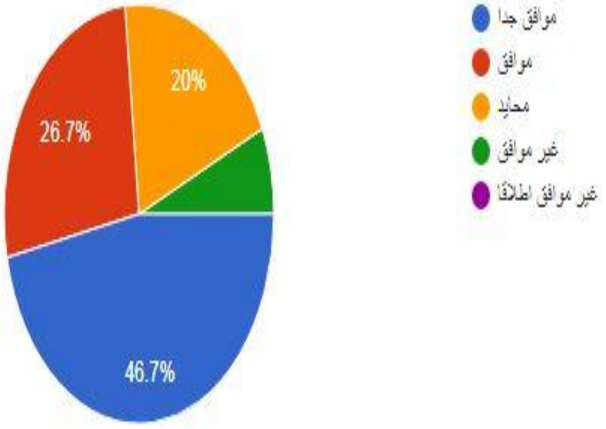
يستجيب الموقع لبرامج ومواقع تحليل الأداء المختلفة

15 ردًا



سهولة الرجوع إلى الصفحة الرئيسية من أي صفحة أخرى في الموقع

15 ردًا



اسم الموقع والشعار متاحة ومتوفرة في كافة صفحات الموقع

15 ردًا