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An efficient framework for evaluating the usability of academic websites: Calibration, validation, analysis, and methods

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Abstract
The success of an organization nowadays is heavily dependent on the usability of its website. Offering educational content and services online is becoming more commonplace in the higher education sector. University websites serve a wide range of users, like students, faculty, parents, staff, etc. Hence, the website must address the different needs of these users while maintaining good usability. Good usability makes it easier for users to find what they are looking for, understand how to use the website, and navigate through the content. This helps improve user satisfaction and engagement with the website, which can lead to increased productivity and better outcomes. Therefore, usability testing and analysis is the unspoken metric for success. Understanding the many factors contributing to the usability of academic websites is a multi-criteria decision-making (MCDM) topic. In this paper, we propose a framework for evaluating the usability of academic websites using the Entropy and Weighted Aggregated Sum Product Assessment (WASPAS) MCDM methods under type-2 neutrosophic sets. The entropy method is used to compute the objective weights of four main criteria contributing to the usability of academic websites, namely (Content, Organization, Presentation and Interaction, and Trustworthiness), with 31 sub-criteria. The WASPAS method is then used to rank five Egyptian university websites and select the best one in terms of usability. This framework will help designers understand the important criteria to consider while designing for university websites in addition to providing them with a usability evaluation method tailored to university websites.

Keywords: University websites; Usability; Neutrosophic; WASPAS; Website Evaluation; MCDM

1. Introduction

Currently, the internet is the most used medium of communication and service delivery by people or entities, especially post-Covid-19. Users search the internet for information they need daily, whether for business, health, education, or governance purposes. With websites acting as a powerful platform for information distribution, many institutions have resorted to the web channel for access. One important type of website that attracts a lot of users is the university website. University websites are crucial for current and prospective students, faculty, and parents. It provides important information and can act as a marketing or public relations tool to attract potential students. Academic websites have changed the way information is stored and accessed. They have made accessing information related to admission, courses, and exams easier. This has removed many of the boundaries that once limited these processes, such as geography and time [1]. While university websites have always been a source of valuable information, they have become even more essential in recent years. With their ability to provide quick and easy access to up-to-date academic information, university websites are now among the most comprehensive information platforms available. University websites are intended to provide services to a diverse audience; therefore, it's critical to maintain the accessibility and usability of these sites for all groups of users to

satisfy their intended use and to provide the users with the most intuitive and quality experience. Yet, many university websites suffer from poor designs, difficult interactions, and problems with the findability of core information buried in a sea of pages. There are several factors contributing to this problem. One such factor is that universities usually have large websites with hundreds of sub-sites and thousands of pages, and the need to serve multiple distinct audiences with different needs and questions to answer. These factors lead to academic websites failing to meet the expectations of users or not providing the users with quality information and quality in look and feel. Hence, the effort and cost put into maintaining and hosting these websites become useless and wasteful.

Organizations place a great deal of importance on their website design, working to create sites that not only look good but are also easy and usable. Usability, according to ISO 9241-11, is defined as the effectiveness, efficiency, and satisfaction with which a set of users can achieve a set of tasks in a defined environment [2]. Nevertheless, the users' satisfaction and the interfaces' usability are questionable and vague. Hence, there is a growing need for tools to support and help designers make better decisions and go in the right direction to achieve maximum user satisfaction. We need a way to make user interfaces quantifiable, thus allowing for automatic calculation of how good an interface is and easily comparing different versions of designs without involving end users. To this end, it is highly important to understand the impact of the different criteria contributing toward user satisfaction with academic websites which is a MCDM problem. The neutrosophic approach is a promising method to deal with uncertainty. That makes it highly suitable for addressing the usability of academic websites. This research focuses on implementing a framework for evaluating the usability of academic websites using MCDM methods under type-2 neutrosophic sets.

The remainder of the paper is organized as follows. Technical background and literature review in Section 2. Section 3 presents the research methodology. Section 4 presents the case study and analysis. Section 5 presents the sensitivity analysis. Finally, we conclude this paper in Section 6.

2. Technical background and literature review

In this section, we give a quick overview of usability and usability evaluation methods, then a literature review of previous work.

2.1 Concepts and terminologies

Usability

According to ISO 25000, Usability is “the degree to which specified users can use a product or system to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use”. And they summarize usability in 6 characteristics: Recognizability, Learnability, Operability, Error protection, Aesthetics, and Accessibility [3]. Nielsen defined usability as how easy an interface is to use, and he defined usability through 5 characteristics: Learnability, Efficiency, memorability, Errors, and Satisfaction. [4]

So, a website’s usability is the website’s ability to enable users to find the information they’re looking for most efficiently and delightfully to deliver user satisfaction. Therefore, website usability is achieved through multiple criteria, such as efficiency, learnability, memorability, delightfulness, and error tolerance, etc., and the criteria would differ based on the target users, their needs, and the situation. Hence, Usability is one of the major factors determining a website's success. It is important, therefore, to have some guidelines to ensure websites’ usability, and to have a way to assess the usability of websites.

Usability evaluation techniques

An essential part of the design process of user interfaces is their evaluation by users to enhance their usability, as users are becoming less willing to interact with difficult or uncomfortable interfaces. A usability evaluation method is a procedure used to collect user interaction data with software to assess the degree of usability achieved by the properties of that software [5].

There are several methods to assess the usability of user interfaces, we could classify them into two general types based on end-users involvement: empirical methods and inspection methods. Empirical methods require end-user presence to complete some tasks using the software or prototype and to capture his interactions and usage data to detect usability issues, this end-user presence makes empirical methods costly and restricts their conduction till the software is developed. Inspection methods on the other side don't require end users but are performed by experts who review the user interface with respect to some predefined set of principles and guidelines to assess their usability and detect any usability violations, which makes it more cost-efficient, this method has the advantage that problems can be ironed out before considerable effort and resources have been expended on the design process. However, inspection methods could be affected by evaluators' expertise, biases and opinions, and the quality of the evaluation guidelines, which could leave out the real user needs. One of the most famous inspection evaluation methods is the heuristic evaluation method by Nielsen [6], [7] used for finding usability problems in a user interface by following a set of usability heuristics "principles" and checking if the interface violates any of them [8]. It is not justifiable to standardize usability guidelines across different design situations, as different organizations have distinct business goals and end-users. Organizations should design websites focusing on who their end-users are, what information they need, and how they can easily retrieve this information.

Usability evaluation studies

Many studies have addressed the problem of website usability assessment, either using traditional assessment methods like questionnaires, Likert scales, and heuristic evaluations or using multi-criteria decision-making methods such as AHP and FAHP, etc. These studies identified various factors that affect the usability of academic websites.

Astani [9] evaluated the effectiveness of the top 50 universities' websites in the U.S. and analyzed the weaknesses and strengths of these websites, using traditional assessment methods such as a questionnaire and a list of 6 predefined usability characteristics from a literature review rated using a five-point Likert scale (Information, Content, Navigation, Usability, Customization, Download Speed, Security). Similarly, Manzoor & Hussain [10] evaluated the usability of higher education websites in Asia using a survey and performed some analysis on the results to propose a "WUEM" Web usability evaluation model consisting of 4 main usability criteria (Web design, page design, navigation, accessibility) and a total of 17 sub-criteria. Another study evaluated the usability of the Namik Kamel university's website using 5 usability criteria (attractiveness, controllability, helpfulness, efficiency, and learnability) defined by WAMMI (Website Analysis and Measurement Inventory)[11]. A similar study developed a set of 7 principles and heuristics to evaluate 12 Saudi Arabia university websites, including: (visual design and consistency, links and navigation, data entry forms, information truth and precision, privacy and security, search functionality, help, feedback, and error tolerance). These principles were based on Nielsen's heuristics and ISO standards [12]. Hasan [13] is another researcher that employed the heuristic evaluation method to evaluate the usability of 3 Jordan university websites using a set of 5 usability criteria related to educational websites (Navigation, architecture/organization, ease of use and communication, design, content). Based on that heuristic evaluation, a list of 34 specific types of usability problems was identified. Roy et al. [14] used questionnaire-based evaluation and performance-based evaluation to evaluate 3 academic websites based on 4 criteria (Task success, Task completion time, Number of clicks, and satisfaction metrics). Five high-level quality factors (functionality, usability, reliability, presentation, content) and 20 sub-quality factors based on ISO 9126-1 for evaluating academic websites were identified by Devi & Sharma [15]'s framework. EduGate, an online academic portal of King Saud University, was evaluated by 3 experts using a heuristic

checklist based on Nielsen's heuristics [16]. Vakkalanka et al. [17] proposed a tool for evaluating academic websites, based on a set of 6 main criteria developed from previous models and ISO 9126 (content, usability, reliability, maintenance, functionality) with a total of 24 sub-criteria. According to the systematic literature review of university website usability evaluation conducted in 2022, most usability problems found were related to interface design, navigation, content, and performance and accessibility issues [18]. A comparison of the criteria used in these studies is presented in table 1.

As we have seen, many researchers paid attention to the problem of academic website evaluation. However, all the above studies used questionnaires, automated accessibility tools, and heuristic rules to evaluate usability. But usability is a more complex problem that is influenced by many criteria, these criteria in most real-life scenarios can be conflicting, and there will be a tradeoff between them, like aesthetics and simplicity, paying more attention to the website's design using more colors, images and visual content could sometimes make the design more complex to use. That's why we need to empower designers with a framework of the most suitable criteria for academic website usability with their relative importance, this becomes a multi-criteria decision-making problem (MCDM), and within the last few years, some studies have assessed academic websites usability using some MCDM methods like Analytical hierarchy process (AHP), fuzzy analytical hierarchy process (FAHP), fuzzy TOPSIS, PROMETHEE.

Nagpal et al. [19] proposed a rule-based system using the ANFIS method to assess website usability from the perspective of end users. A survey was used to identify the factors affecting usability, and 4 factors were chosen (Ease of use, information, response time, and ease of navigation). In Nagpal, Bhatia, et al. [20], the same authors employed a FAHP approach to evaluate the weights of usability criteria of an educational institute website and used the proposed approach to rank 4 websites based on their evaluated usability score. They used the same 4 criteria used in [19]. In Nagpal, Bhatia, et al. [20] Also, FAHP was used to evaluate the criteria affecting the usability of a website, and a fuzzy TOPSIS method was used to rank 4 websites based on the usability criteria (Ease of use, informative, response time, ease of navigation). An AHP-based usability evaluation technique is proposed by Roy et al. [21] to measure the usability score of a website. A questionnaire was used to measure users' satisfaction degree on 5 usability criteria (attractiveness, controllability, efficiency, helpfulness, and learnability), and the results were analyzed using AHP. In Nagpal et al. [22] a metric is proposed integrating objective and subjective usability evaluation approaches, using fuzzy AHP and entropy methods respectively, on 5 usability criteria (Ease of use, information, response time, ease of navigation, and contrast errors). Response time (RT) was suggested by the entropy as the main contributor to usability, and Ease of use (EOU) was suggested as the main contributor by FAHP. RT was the main contributor to the evaluation of the usability of academic websites according to the combined approach. In Shayganmehr et al. [23] hybrid MCDM approaches (AHP and PROMETHEE) are used to determine the importance of criteria and sub-criteria contributing to the usability of E-services of Iranian universities' websites. Nine indexes (criteria) were used (website design, responsiveness quality, security, trust, content and information quality, participation, support and maintenance, services, and usability). A framework for evaluating university websites was proposed by Gharibe Niazi et al. [1]. It used the Delphi technique, systematic review, and meta-analysis approaches. The proposed framework included 10 criteria (credibility, reliability, usability, website design, functionality, content, page design, efficiency, and webometrics) that are suggested for university website evaluation. This study suggested that credibility is the most important factor in the evaluation of university websites. In Muhammad et al. [24], a FAHP approach is used to evaluate the usability of academic websites with 3 usability criteria (usability, navigation, content) and 9 sub-criteria (ease of use, interactivity, learnability, ease of navigation, accessibility, efficiency, informative, accuracy, user satisfaction), The fuzzy extent analysis technique was used to rank 5 university websites. A comparison of the different criteria used in these studies is presented in table 2.

Table 1. Universities' website usability criteria.

Usability Criteria	Studies									
	[9]	[13]	[25]	[10]	[16]	[14]	[26]	[18]	[15]	[17]
Content	✓	✓	✓	✓	✓				✓	✓
Navigation	✓	✓		✓	✓			✓		✓
Usability	✓				✓				✓	✓
Customization	✓									
Security	✓		✓							
Download speed	✓									
Architecture/ Organization		✓		✓				✓		
Ease of use and communication		✓		✓						
Design		✓	✓	✓				✓	✓	✓
Consistency			✓	✓	✓					
Links			✓	✓	✓			✓		
Data entry forms			✓							
Search functionality			✓						✓	✓
Help, feedback, and error tolerance, recoverability			✓		✓				✓	✓
Sitemap				✓						
Concise News and Events				✓					✓	
Multiple Language Support				✓	✓				✓	✓
Accurate Page title				✓	✓					✓
Page headings				✓	✓					
Avoid Page scrolling				✓						
Link logo to homepage				✓	✓					
Home page navigation in the main menu				✓	✓					
Adequate text-to-background contrast				✓						
Font size/spacing is easy to read				✓						
Attractiveness							✓		✓	✓
Controllability							✓			
Efficiency							✓			
Helpfulness					✓		✓			✓
Learnability					✓		✓		✓	
Reliability									✓	✓
Functionality									✓	✓
Understandability									✓	✓
Interactivity									✓	✓
Availability					✓				✓	✓
Memorability					✓					
User satisfaction					✓	✓				
Few errors					✓					

Table 2. Usability criteria used in MCDM studies.

Usability Criteria	Studies								
	[19]	[20]	[29]	[21]	[30]	[22]	[27]	[1]	[24]
Ease of use	✓	✓	✓	✓		✓			✓
Informative	✓	✓	✓		✓	✓			
Response time	✓	✓	✓	✓		✓	✓		
Ease of navigation	✓	✓	✓		✓	✓			✓
Attractiveness				✓					
Controllability				✓					
Efficiency				✓	✓			✓	✓
Helpfulness				✓					
Learnability				✓	✓			✓	✓
Contrast errors						✓			
Website Design							✓	✓	
Responsiveness							✓		
Security							✓		
Trust							✓		
Content and information quality				✓	✓		✓	✓	✓
Participation							✓		
Support and maintenance							✓		
Services							✓	✓	
Usability							✓	✓	✓
Reliability								✓	
Web credibility								✓	
Functionality								✓	
Systematic cues								✓	
Page design								✓	
Webometric								✓	
Interactivity					✓			✓	✓
Accessibility	✓				✓	✓		✓	✓
Accuracy									✓
User satisfaction	✓				✓				✓
User-friendliness	✓								
Personalization	✓								

3. Research methodology

The methodology used in this research consists of 3 phases: Criteria identification through literature review and surveying the stakeholders and UX experts and academics to identify the key relevant usability criteria for academic websites to consider in our framework, Computing the criteria objective weights using Shannon's entropy method, and finally, ranking five university websites based on the usability criteria weights using the WASPAS method. The usability evaluation of a university website is a multi-criteria scenario that considers different criteria, with varying importance, and it's a

challenging task to try to consider the different needs and criteria, so tradeoffs will often be made when designing, hence, it is necessary to understand how each criterion contributes to the overall usability of the website, so that educated design decisions can be made. And when presented with different designs, we can evaluate and select the most usable design. The proposed methodology used the neutrosophic environment to overcome vague and incomplete information. The type-2 neutrosophic sets (TNSs) are used in this study. The graphical representation of the research methodology is depicted in Fig. 1. The steps of the proposed framework are organized as follows:

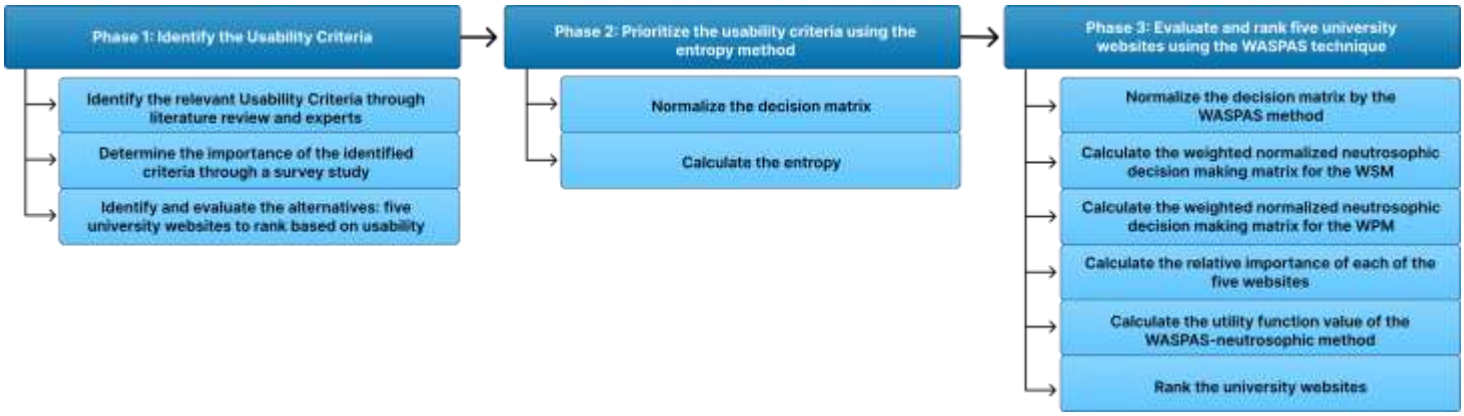

Figure 1. Research Methodology

Phase 1: Identify the usability criteria

Step 1: In order to identify the relevant usability criteria, a comprehensive literature review was conducted and UX experts and academics were consulted to identify the key usability criteria relevant to academic websites.

Step 2: A survey study was conducted to determine the importance of the identified criteria to help focus on the most relevant ones. The participants were UX field experts with experience in usability evaluation, academics with Ph.D. and experience in the field of Human-Computer Interaction, stakeholders, current and prospective students using academic websites, faculty members, etc.

Step 3: Five university websites were selected for usability evaluation, and three UX and usability evaluation experts evaluated the five websites based on the selected criteria from step 2, and a decision matrix for each of the three experts was constructed using the type-2 neutrosophic sets. Then the opinions of experts were converted from linguistic terms into crisp values. Finally, we aggregated the opinions of the three experts into one matrix.

Phase 2: Prioritize the usability criteria using the entropy method

3.1 Shannon's entropy method

Assuming we have m alternatives $(A_1, A_2, \dots a)$ and b criteria $(C_1, C_2, \dots b)$ for a decision problem

Step 4: Normalize the aggregated decision matrix

$$nr_{cd} = \frac{x_{cd}}{\sum_{c=1}^{a} x_{cd}} \quad (1)$$

Where $c = 1,2,3, \dots . a;\ and\ d = 1,2,3, \dots . . b$

Step 5: Calculate the entropy

$$r_d = -L \sum_{c=1}^{a} nr_{cd} \ln nr_{cd} \quad (2)$$

Where $L = 1/\ln a$

Step 6: Compute the objective weights of the criteria

$$w_d = \frac{1-r_d}{\sum_{c=1}^{b}(1-r_d)} \quad (3)$$

Phase 3: Evaluate and rank the five university websites using the WASPAS technique

3.2 WASPAS method

The weighted aggregated sum product WASPAS is a decision-making method that combines the weighted sum model (WSM) and the weighted product model (WPM) to help identify the ranking of the different alternatives to solve the decision-making problem. The WSM approach calculates the total score of the alternative as a weighted sum of the criteria. The WPM approach was created to prevent alternatives that have poor attributes or criterion values. The WASPAS method can check the consistency in the overall ranking of the alternatives using the λ coefficient. Apply steps 1 to 3.

Step 7: Normalize the decision matrix by the WASPAS method as:

$$\mathrm{X}^*_{cd} = \frac{x_{cd}}{\max_c x_{cd}} \; for\ beneficial\ criteria, \quad (4)$$

$$\mathrm{X}^-_{cd} = \frac{\min_c x_{cd}}{x_{cd}} \; for\ non\ beneficial\ criteria. \quad (5)$$

Step 8: Calculate the weighted normalized neutrosophic decision-making matrix for the WSM:

$$\mathrm{WX}^*_{cd} = \mathrm{X}^*_{cd} * W_d \quad (6)$$

Step 9: Calculate the weighted normalized neutrosophic decision-making matrix for the WPM:

$$\mathrm{WX}^-_{cd} = \mathrm{X}^-_{cd} * W_d \quad (7)$$

Step 10: Calculate the total relative importance based on:

The WSM for *c* alternative:

$$S_c^1 = \sum_{d=1}^{b} \mathrm{WX}^*_{cd} \quad (8)$$

The WPM for *c* alternative:

$$S_c^2 = \prod_{d=1}^{b} (\mathrm{X}^-_{cd})^{W_d} \quad (9)$$

Step 11: To improve the ranking accuracy, the utility function value of the WASPAS-neutrosophic method is calculated as follows:

$$S_c = \alpha S_c^1 + (1-\alpha) S_c^2 \quad (10)$$

Where $\alpha\ is\ between\ 0\ and\ 1$

The alternatives are ranked based on the values of S_c , the alternatives having the highest values being the most significant.

4. Case study and analysis

The proposed methodology results of the entropy and WASPAS methods under a neutrosophic environment are demonstrated through this case study.

4.1 Description of criteria

Considering section 2, After conducting a comprehensive literature review of the previous studies on the usability evaluation of academic websites and talking to usability experts working in the field of UX design, we considered the most important and effective criteria for evaluating the usability of academic websites to be 31 criteria (shown in figure 2) organized under four main Categories: Content, Organization, Presentation and Interaction, Trustworthiness. All criteria are positive except Broken links, Load time, and response time. Appendix table 1 shows the 4 main criteria and 31 sub-criteria.

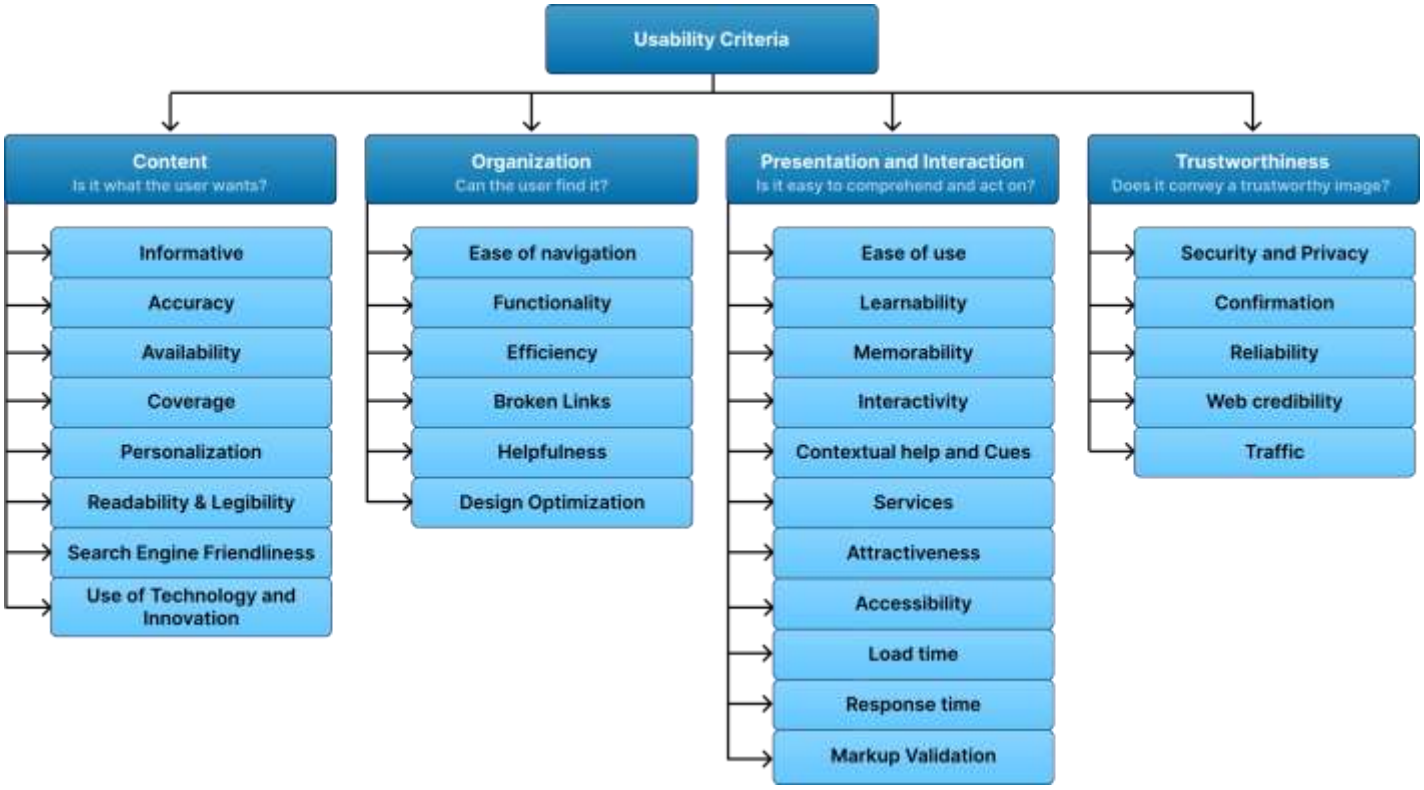

Figure 2. The Identified usability criteria, 4 main criteria, 31 sub-criteria

The criteria are introduced and explained below.

Category 1: Content. In this category, all criteria are related to a website's content, including text, images, videos, audio data, etc., which answers the question: Is it what the user wants?

1. **Informative:** Users come to a website looking for specific kinds of information. Informative refers to how the content on the website provides current, relevant, complete, valuable, and quality information. The content should be comprehensive, appropriate, and within the expected level of detail [28], which is a significant usability factor for a university website, as providing clear and understandable content will encourage users to keep returning to the website.
2. **Accuracy:** In a university website, it's important that the content is always accurate, reliable, correct, and authentic so that it builds trust. This can be done by checking for spelling or grammatical errors that could alter the meaning of information, providing images and multimedia of appropriate quality, using accurate page titles, and providing precise and trustworthy content [20].

3. **Availability:** Availability is a measure of the readiness of content. Content should always be ready and available for users to access. This also includes the ability to reach past and archived content easily.
4. **Coverage:** Coverage refers to the degree that topics of interest are successfully addressed, with clearly presented arguments and adequate support to substantiate them. This can refer to the diversity of services and academic activities covered on the website.
5. **Personalization:** Personalization and customization are other significant factors of a university website due to the diversity of its audience. This is the website's ability to offer customized content to the user based on different criteria like location etc., using the user's data to suggest and serve up related content and allowing the users to customize their experiences.
6. **Readability and Legibility:** Readability and legibility refer to how the users read and view the content of a page or screen; good readability helps users read the content more efficiently and understand the message more clearly. On the other hand, good legibility makes the presentation edible and allows users to quickly understand what is on the page or screen. The use of appropriate Typography, whitespace, hierarchy, etc., can help achieve these two [31].
7. **Search Engine Friendliness:** A university website needs to have a strong presence in search engines. Multiple factors contribute to that, such as clear web page structure, using a good mix of visual media, conserving the website's storage to improve site speed, and having a responsive design [32].
8. **Use of Technology and Innovation:** This criterion refers to how the website adapts to accommodate the latest technological advancements, such as Augmented reality (AR) and Virtual reality (VR), using chatbots and voice search.
9. **Updates:** A university website needs to have up-to-date content. An outdated website will cause confusion and loss of credibility, so the content and style presented in a website should be frequently updated, displaying the latest update date.

Category 2: Organization. In this category, all criteria are related to the organization and structure of the information on the academic website. This category answers: Can the user find it?

10. **Ease of Navigation:** A university website is a collection of large and diverse amounts of information. It's essential that the users can navigate through it and find information quickly and easily. As users will discontinue using the site if it is complex to navigate or if too many clicks are required to retrieve the required information. Ease of Navigation depends on how the information is organized and arranged, the presence of navigational aids, and providing alternative navigational ways. This helps overcome the navigational complexity, especially in the case of big websites like university websites [22].
11. **Functionality:** Functionality refers to the degree that the website provides functions that meet and cover all the stated or implied needs, tasks, and objectives of the users [33]. Examples of functionality are: Searching and retrieving mechanisms, navigational prediction, and online services.
12. **Efficiency:** Efficiency measures how quickly and easily the users can locate and achieve their goals without putting in much cognitive effort. Users can experience a measurable decline in efficiency when they lose their sense of location on a website or feel disoriented [34]. According to Jakob's Usability Heuristic, efficiency refers to how quickly users can perform tasks after learning to use the design by allowing for flexibility, shortcuts, and reducing the number of clicks [35].

13. **Broken Links:** Broken links affect navigation significantly, and university websites should have no broken links and no orphan pages. Broken links frustrate and drive users away and negatively affect the website's SEO, search ranking, and quality scores.
14. **Helpfulness:** Helpfulness refers to how helpful the website is to the users, reducing their cognitive effort. Hence, it is essential to help users during each visit step (before, during, and after). A high level of helpfulness corresponds with the users' expectations about the content and structure [21].
15. **Design optimization:** A university website must be compatible with and perform well in different browsers and platforms. The website design and organization should also be consistent and accessible through all browsers and platforms (responsiveness).

Category 3: Presentation and Interaction. In this category, all criteria are related to how the website supports the user in terms of presentation and interaction. It answers the question: Is it easy to comprehend, and can the user act on it?

16. **Ease of Use:** Ease of use is an essential factor in assessing the usability of a university website [19]. It measures how intuitively and easily the user can use the website. Consistent design, clear instructions, help, using simple terms and conventions are examples of factors contributing to the ease of use of an interface.
17. **Learnability:** Refers to how easy the system is to learn, which is an important factor for university websites, as these websites have diverse audiences, and not all are frequent users. So, their design should be self-descriptive encouraging users to quickly become familiar with and learn how to perform different academic tasks through the website [36].
18. **Memorability:** Memorability refers to how easily users can remember how to use the website and re-establish proficiency after a period of absence, which is crucial for university websites that are used infrequently. Users need to be reminded how to do tasks and find the information they are looking for. There are many ways of designing a website to support memorability. For example, using meaningful icons, obvious names, and menu options and structuring the content in a relevant way.
19. **Interactivity:** Interactivity refers to how engaging and interactive the website is, which is related to support; Hence, the website should provide means of interaction with the website's functions, error prevention mechanism, visible controls, hints, and a feedback mechanism to assist and encourage the users during their visit [30].
20. **Contextual help and cues:** This factor refers to providing support for the users relative to the area they are currently interacting with through tooltips, visual prompts, walkthroughs, inline instructions, partial content, sound, and vibration to help guide users to the most significant elements and equally, move away from the least significant ones.
21. **Services:** The criteria refer to the number of academic services delivered through the website [37].
22. **Attractiveness:** The content on the website should be attractive to retain and interest the users. Attractiveness is a usability attribute that measures the visual aspect of the website. According to [10], the appearance of a website is a crucial factor in improving the perception of information in terms of better cognitive mapping and easy assessment of decisions. Thus, the website should be aesthetic, pleasant, fun, well-organized, and clean.
23. **Accessibility:** Accessibility measures how easily and intuitively accessible is the website's information for any user. Examples of accessibility include multiple language support, Adequate text-to-background contrast, proper font size/spacing, images having appropriate ALT tags, and compliance with WCAG accessibility guidelines. A university website needs to be accessed efficiently anytime and anywhere for the users to benefit from it [23].

24. **Load Time:** Load time refers to the time it takes to download and display an entire webpage, including all page elements, such as HTML, scripts, CSS, images, and third-party resources. Compressing images used on the website, compressing your images, removing unnecessary custom fonts and plugins, etc. can help speed up load time.
25. **Response Time:** Response Time measures how quickly a website responds to a request. Response times play a critical role in university websites, as delays in accessing the information cause users to be highly unsatisfied, particularly at times of enrollment, result declaration, etc. thus, response time affects inversely to the website's usability. Various parameters affect response time like network bandwidth, download, query processing time, etc. [28].
26. **Markup Validation:** Markup validation ensures that the HTML of the website is clean, well-structured, and used in a way that is compliant with the HTML specifications, as it supports assistive technologies, browser compatibility, and website usability.

Category 4: Trustworthiness. In this category, all criteria are related to how trustworthy the website is perceived to be.

27. **Security and Privacy:** Security and privacy are very important, especially on university websites, as they deal with sensitive information, confidential information should be well protected, and privacy and security policies should be presented to users. Factors like using secure protocols and data encryption methods help protect privacy and security from the infrastructure dimension while using security code images, a virtual keyboard for entering a password, and sending alarm messages when an unknown user logs into other users' accounts assure privacy and security from the interface dimension.
28. **Confirmation:** Confirmation messages are an important key to enforcing a trustworthy image. These are messages which require users to confirm an action they are trying to perform [38]. Confirmation messages are important to use to communicate information the user must confirm before an action is completed. A balance between transparency and excess information is needed.
29. **Reliability:** The performance of the website starts with how reliable it is and its ability to recover quickly from problems; reliability, according to [33], is the "degree to which a system, product or component performs specified functions under specified conditions for a specified period of time". Reliability can be measured by: Fault tolerance, recoverability, and availability.
30. **Web Credibility:** According to a Stanford study on web credibility [39], credibility is "perceived trustworthiness + perceived expertise". This can be measured by factors such as having a professional website appearance, providing information about the university, showing total transparency, listing communication information visible on the site, testimonials, highlighting professional accomplishments, showing social proof, ratings, and reviews, etc.
31. **Traffic:** The success of a website is measured by the number of its visitors and its conversion rate, which is affected by factors such as engaging content, impressive design, optimization for mobile, SEO, smooth navigation, etc.

4.2 Prioritizing the usability criteria using the entropy method

Step 1: Five websites were selected for usability evaluation in this study, to preserve confidentiality the websites are referred to as (WebA1, WebA2, WebA3, WebA4, WebA5).

Step 2: Three UX and usability experts with PhD and experience not less than 15 years in this field are selected to evaluate the five selected websites in terms of the identified usability criteria to compute the objective weights of the criteria using the entropy method as mentioned in step 4,5,6.

Step 3: The three experts used the type-2 neutrosophic numbers [40] to evaluate the websites based on the identified 31 criteria, using linguistic terms. Then we converted the opinions of experts (linguistic terms) to neutrosophic numbers as shown in appendix tables 2-4. After that, the type-2 neutrosophic numbers were converted to crisp values [40]. Then we aggregated the different opinions of the experts into one matrix by the average method.

Applying the Entropy method

Step 4: The aggregated decision matrix was normalized by applying Eq. (1), as shown in Table 3.

Table 3. The normalization matrix by the entropy method

	WebA1	WebA2	WebA3	WebA4	WebA5
WebC1	0.225727	0.084278	0.203056	0.203056	0.283884
WebC2	0.129779	0.289738	0.207243	0.207243	0.165996
WebC3	0.224561	0.236647	0.224561	0.08655	0.22768
WebC4	0.161665	0.230492	0.208884	0.255302	0.143657
WebC5	0.134974	0.228662	0.265582	0.19611	0.174672
WebC6	0.211221	0.181151	0.211221	0.245325	0.151082
WebC7	0.226939	0.235102	0.201633	0.134694	0.201633
WebC8	0.225599	0.099942	0.240795	0.19287	0.240795
WebC9	0.205703	0.293279	0.163951	0.113035	0.224033
WebC10	0.178349	0.132399	0.192368	0.260514	0.236371
WebC11	0.176494	0.231047	0.136382	0.234256	0.221821
WebC12	0.098404	0.231383	0.231383	0.231383	0.207447
WebC13	0.169065	0.258993	0.205935	0.25	0.116007
WebC14	0.160131	0.120915	0.155773	0.313725	0.249455
WebC15	0.188555	0.275422	0.132565	0.237135	0.166324
WebC16	0.14726	0.328767	0.167808	0.188356	0.167808
WebC17	0.127075	0.382942	0.127075	0.127075	0.235833
WebC18	0.191388	0.138388	0.211999	0.246227	0.211999
WebC19	0.30139	0.168818	0.202085	0.151936	0.17577
WebC20	0.148084	0.264373	0.148084	0.291376	0.148084
WebC21	0.11677	0.357764	0.160248	0.204969	0.160248
WebC22	0.129665	0.108159	0.163188	0.364326	0.234662
WebC23	0.157229	0.251787	0.321056	0.122045	0.147883
WebC24	0.249679	0.094912	0.185977	0.246259	0.223172
WebC25	0.146366	0.267144	0.113613	0.298874	0.174002
WebC26	0.213915	0.185877	0.213915	0.271028	0.115265
WebC27	0.128755	0.224737	0.192743	0.261022	0.192743
WebC28	0.253074	0.169057	0.132172	0.234631	0.211066
WebC29	0.207191	0.136502	0.201097	0.207191	0.24802
WebC30	0.24184	0.284866	0.127596	0.16815	0.177547
WebC31	0.224037	0.079736	0.224037	0.248152	0.224037

Step 5: Then, the entropy is computed using Eq. (2).

Step 6: The objective weights of the criteria are computed by Eq. (3). From the results, the presentation and interaction category scored the highest weight compared to the other three main criteria, while the organization category scored the lowest weight. Fig. 2 shows the weights of the criteria. From Fig.3, we see that "ease of use" is of the highest importance in all 31 criteria, and "updates" are of the lowest importance.

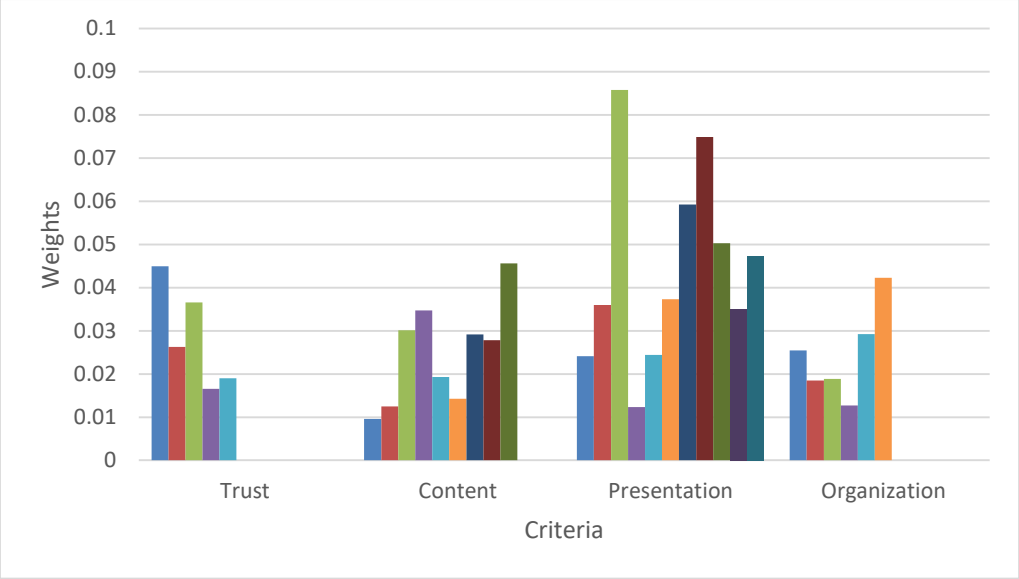

Figure 3. The weights of criteria.

4.3 Ranking the five university websites

The proposed framework was used to rank five Egyptian university websites using the WASPAS method.

Applying the WASPAS method

Step 7: The decision matrix was normalized by Eqs. (4,5) as shown in table 4.

Step 8: The WSM matrix is computed by Eq. (6), as shown in Table 5.

Step 10: The WPM matrix is computed by Eq. (7), as shown in Table 6.

Step 11: The total relative importance of the alternatives is calculated by Eqs. (8,9)

Step 12: Finally, the utility function was computed by Eq. (10). We use $\alpha = 0.5$. Then the alternatives are ranked based on the highest value of the utility function, as shown in Fig. 3. From Fig. 4. website 4 has the highest rank and website 1 has the lowest rank.

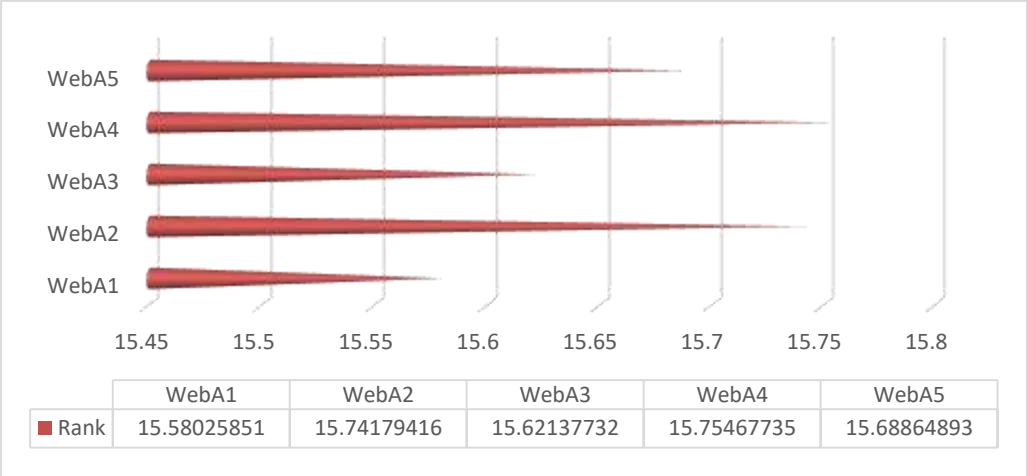

Figure 4. The rank of alternatives.

Table 4. The normalization matrix by the WASPAS method.

	WebA1	WebA2	WebA3	WebA4	WebA5
WebC1	0.795139	0.296875	0.715278	0.715278	1
WebC2	0.447917	1	0.715278	0.715278	0.572917
WebC3	0.948929	1	0.948929	0.365733	0.962109
WebC4	0.633229	0.902821	0.818182	1	0.562696
WebC5	0.508221	0.860987	1	0.738416	0.657698
WebC6	0.860987	0.738416	0.860987	1	0.615845
WebC7	0.965278	1	0.857639	0.572917	0.857639
WebC8	0.936893	0.415049	1	0.800971	1
WebC9	0.701389	1	0.559028	0.385417	0.763889
WebC10	0.684604	0.508221	0.738416	1	0.907324
WebC11	0.753425	0.986301	0.582192	1	0.946918
WebC12	0.425287	1	1	1	0.896552
WebC13	0.652778	1	0.795139	0.965278	0.447917
WebC14	0.510417	0.385417	0.496528	1	0.795139
WebC15	1.42236	2.07764	1	1.78882	1.254658
WebC16	1	2.232558	1.139535	1.27907	1.139535
WebC17	0.331839	1	0.331839	0.331839	0.615845
WebC18	0.77728	0.562033	0.860987	1	0.860987
WebC19	1	0.560132	0.670511	0.504119	0.583196
WebC20	0.508221	0.907324	0.508221	1	0.508221
WebC21	0.326389	1	0.447917	0.572917	0.447917
WebC22	0.355903	0.296875	0.447917	1	0.644097
WebC23	0.489726	0.784247	1	0.380137	0.460616
WebC24	1	0.380137	0.744863	0.986301	0.893836
WebC25	0.489726	0.893836	0.380137	1	0.582192
WebC26	0.789272	0.685824	0.789272	1	0.425287
WebC27	0.493274	0.860987	0.738416	1	0.738416
WebC28	1	0.668016	0.522267	0.927126	0.834008
WebC29	0.835381	0.550369	0.810811	0.835381	1
WebC30	0.848958	1	0.447917	0.590278	0.623264
WebC31	0.902821	0.321317	0.902821	1	0.902821

Table 5. The WSM matrix by the WASPAS method.

	WebA1	WebA2	WebA3	WebA4	WebA5
WebC1	0.035726	0.013339	0.032137	0.032137	0.04493
WebC2	0.011753	0.026238	0.018768	0.018768	0.015032
WebC3	0.034678	0.036545	0.034678	0.013366	0.03516
WebC4	0.010504	0.014975	0.013571	0.016587	0.009334
WebC5	0.009642	0.016334	0.018972	0.014009	0.012478
WebC6	0.008283	0.007104	0.008283	0.009621	0.005925
WebC7	0.012076	0.01251	0.010729	0.007167	0.010729
WebC8	0.028194	0.01249	0.030094	0.024104	0.030094
WebC9	0.024336	0.034698	0.019397	0.013373	0.026505
WebC10	0.013224	0.009817	0.014263	0.019316	0.017526
WebC11	0.010744	0.014064	0.008302	0.01426	0.013503
WebC12	0.012396	0.029148	0.029148	0.029148	0.026132
WebC13	0.018143	0.027794	0.0221	0.026829	0.012449
WebC14	0.023281	0.017579	0.022647	0.045611	0.036267
WebC15	0.034281	0.050075	0.024102	0.043114	0.03024
WebC16	0.036001	0.080375	0.041025	0.046048	0.041025
WebC17	0.028472	0.085801	0.028472	0.028472	0.05284
WebC18	0.009602	0.006943	0.010636	0.012354	0.010636
WebC19	0.024398	0.013666	0.016359	0.0123	0.014229
WebC20	0.018969	0.033865	0.018969	0.037324	0.018969
WebC21	0.019344	0.059265	0.026546	0.033954	0.026546
WebC22	0.026655	0.022234	0.033546	0.074894	0.048239
WebC23	0.024606	0.039404	0.050244	0.0191	0.023143
WebC24	0.03503	0.013316	0.026093	0.034551	0.031311
WebC25	0.023155	0.042262	0.017974	0.047282	0.027527
WebC26	0.020078	0.017446	0.020078	0.025439	0.010819
WebC27	0.009136	0.015947	0.013676	0.018521	0.013676
WebC28	0.018877	0.01261	0.009859	0.017502	0.015744
WebC29	0.010602	0.006985	0.01029	0.010602	0.012691
WebC30	0.02479	0.029201	0.01308	0.017237	0.0182
WebC31	0.038146	0.013576	0.038146	0.042252	0.038146

Table 6. The WPM matrix by the WASPAS method.

	WebA1	WebA2	WebA3	WebA4	WebA5
WebC1	0.989753	0.946897	0.985057	0.985057	1
WebC2	0.979147	1	0.991247	0.991247	0.985491
WebC3	0.998086	1	0.998086	0.963909	0.998589
WebC4	0.99245	0.998306	0.996677	1	0.990507
WebC5	0.987241	0.997164	1	0.994263	0.992082
WebC6	0.998561	0.997087	0.998561	1	0.995347
WebC7	0.999558	1	0.998081	0.993056	0.998081
WebC8	0.99804	0.973884	1	0.993344	1
WebC9	0.987768	1	0.980024	0.96746	0.990698
WebC10	0.992708	0.987012	0.99416	1	0.998123
WebC11	0.995971	0.999803	0.992316	1	0.999223

WebC12	0.975387	1	1	1	0.996822
WebC13	0.988215	1	0.993649	0.999018	0.977924
WebC14	0.969791	0.957445	0.968571	1	0.989599
WebC15	1.008528	1.01778	1	1.014115	1.005483
WebC16	1	1.029336	1.004714	1.0089	1.004714
WebC17	0.909693	1	0.909693	0.909693	0.95926
WebC18	0.996892	0.992907	0.998153	1	0.998153
WebC19	1	0.985959	0.990295	0.983428	0.98693
WebC20	0.975054	0.996377	0.975054	1	0.975054
WebC21	0.935796	1	0.953516	0.967527	0.953516
WebC22	0.925545	0.913059	0.941622	1	0.967591
WebC23	0.964766	0.987863	1	0.952564	0.9618
WebC24	1	0.966685	0.989735	0.999517	0.996076
WebC25	0.966808	0.994707	0.955298	1	0.974747
WebC26	0.993998	0.990452	0.993998	1	0.978485
WebC27	0.986996	0.997232	0.994399	1	0.994399
WebC28	1	0.992413	0.987813	0.998573	0.996579
WebC29	0.99772	0.99245	0.997342	0.99772	1
WebC30	0.99523	1	0.97682	0.984724	0.986289
WebC31	0.99569	0.953162	0.99569	1	0.99569

In this paper Shannon's entropy method is used to rank the usability criteria of academic websites by calculating their objective weights, The main criteria contributing to the usability of academic websites were earlier identified as Content, Organization, Presentation and Interaction, and Trustworthiness, with 31 sub-criteria that were rated by usability experts using the linguistic term to incorporate the vagueness in the experts' opinions. Based on the evaluation of the three experts, the "Presentation and Interaction" criteria are of the highest importance, followed by "Content" and then "Trustworthiness". The "Organization" came with the lowest importance compared to the other three main criteria. In the sub-criteria, "Ease-of-use" scored the highest importance, followed by "Interactivity" and "Attractiveness", While "Updates" scored the lowest importance in 31 criteria. The entropy method was found easier for decision-makers and more meaningful than performing pair-wise comparisons between the sub-criteria which is a tedious task and can be subject to personal opinions. Also, it wouldn't make sense to ask someone for example whether they think content or organization is more important, unlike the process followed in the entropy method where the experts evaluate existing websites according to the usability criteria and based on that the objective weights of the criteria are computed.

The WASPAS was later used to evaluate five Egyptian university websites based on the weights of the 31 usability criteria identified by the entropy method. Based on this evaluation, the fourth website scored the highest rank, followed by the second website, while the first website had the lowest rank. This method makes it easier to choose the best design from multiple alternatives based on their usability.

5. Sensitivity Analysis

In this section, the sensitivity analysis of the α value is performed to show the robustness and reliability of the proposed entropy and WASPAS model. The goal of the sensitivity analysis is to show how the rank of alternatives change when changing the α value. The α value changes between 0.1 and 0.9. Table 8 shows the rank of alternatives

according to the different α values. From Figure 4, The rank of the alternatives doesn't change in the α value between 0.1 and 0.7. But when the α value was equal to 0.8 and 0.9, the rank of the alternatives changed, the second website became the best, followed by the fourth website, with the first website being the worst. All α values resulted in the first alternative being the worst, and all α values between 0.1 and 0.7 agreed the fourth alternative is the best. However, the α value of 0.8 and 0.9 agreed the second alternative is the best. From this analysis, the alternatives' rank is not sensitive to the α change.

Table 8. The rank of alternatives after changing the α value

	$\alpha = 0.1$	$\alpha = 0.2$	$\alpha = 0.3$	$\alpha = 0.4$	$\alpha = 0.5$	$\alpha = 0.6$	$\alpha = 0.7$	$\alpha = 0.8$	$\alpha = 0.9$
WebA1	27.52037	24.53534	21.55031	18.56529	15.58026	12.59523	9.610204	6.625177	3.64015
WebA2	27.68274	24.69751	21.71227	18.72703	15.74179	12.75656	9.77132	6.786082	3.800845
WebA3	27.57273	24.58489	21.59705	18.60922	15.62138	12.63354	9.6457	6.657862	3.670023
WebA4	27.71423	24.72434	21.73445	18.74456	15.75468	12.76479	9.774902	6.785015	3.795127
WebA5	27.65553	24.66381	21.67209	18.68037	15.68865	12.69693	9.705207	6.713487	3.721766

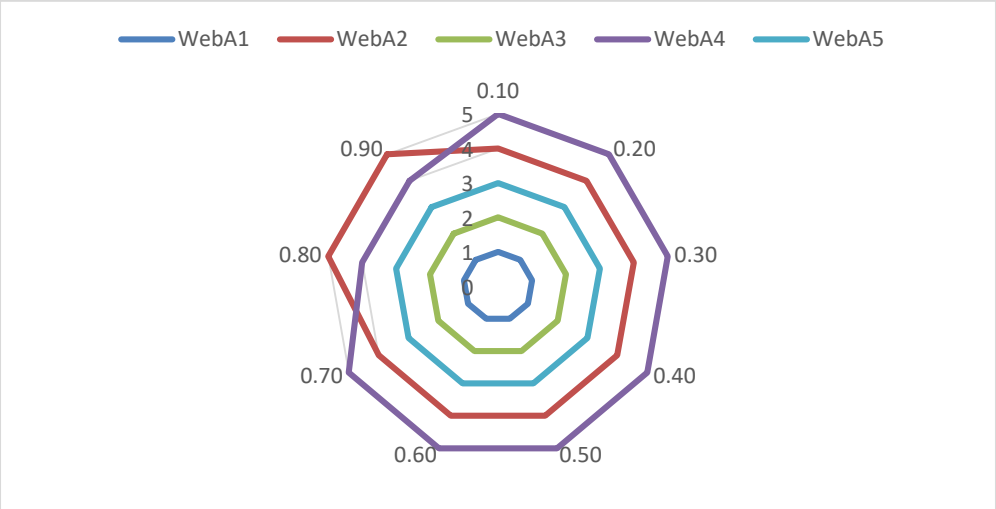

Figure 5. The rank of alternatives by sensitivity analysis.

6. Conclusion and Future work

This study was conducted methodically to propose a multi-stage MCDM framework using Shannon's entropy method and the WASPAS method under the type-2 neutrosophic environment for evaluating the usability of academic websites. First, the usability criteria relevant to academic websites were identified through secondary research and literature review and were further validated by usability experts and websites' users through a survey study which narrowed them down to four main usability criteria namely, Content, Organization, Presentation and Interaction, and Trustworthiness, with 31 sub-criteria. The usability criteria weights were then computed using the entropy method to understand their relative importance. This study found that the most important criteria among the four main criteria were Presentation and Interaction; The least critical criteria of the main criteria was Organization. Meaning that the website's organization is important but only after the content provided meets the users' needs and is easy to comprehend and act on and can be trusted. Only then the organization would make sense. In terms of the sub-criteria, Ease of use scored the highest importance while updates were the least important sub-criteria. Five Egyptian university websites were ranked using the WASPAS method based on the criteria weights identified.

The major strength of this work in relation to previous studies to the best of our knowledge is that it is the first framework to address this large number of criteria; 31, covering almost all aspects of a university website in detail and precisely, instead of addressing few major usability criteria that can be interpreted differently by different designers.

To further verify the soundness of this framework regarding the ranking of the usability criteria, it will be tested with a larger number of university website users. As for future work, the DEMATEL method can be used to explain the dependency between the identified usability criteria which will further help designers understand their contribution to the overall usability of academic websites.

The contribution of this research study can be summarized as follows:

1. The proposed framework provides an evaluation tool to diagnose weak usability areas of academic websites, so designers, developers, and universities can use it to improve the experiences provided through their websites. 2. This framework will help designers understand the key usability criteria to consider when designing new or evaluating existing academic websites, which is more suitable compared to the general usability heuristic rules used currently. 3. Providing designers with the relative importance of the different usability criteria contributing to academic websites, will help them prioritize and make educated design decisions and tradeoffs between the criteria, which in real-life scenarios it can be challenging to address all these criteria as they can be conflicting.

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Appendix

Table 1. The 4 main criteria and 31 sub criteria

Trustworthiness WebC1	Content WebC2	Presentation & Interaction WebC3	Organization WebC4
Does the website convey a good and trustworthy image?	Is it what the user wants?	Is it easy to comprehend and can the user act on it?	Can the user find it?
Security & privacy	Updates	Load time	Design optimization
Confirmation	Personalization	Response time	Helpfulness
Reliability	Accuracy	Ease of use	Functionality
Web credibility	Use of technology and innovation	Systematic cues	Broken links
Traffic	Coverage	Memorability	Efficiency
	Readability & legibility	Services	Ease of navigation
	Availability	Attractiveness	
	Search engine friendliness	Interactivity	
	Informative	Accessibility	
		Markup validation	
		Learnability	

Table 2. The decision matrix by the first expert

	WebA1	WebA2	WebA3	WebA4	WebA5
WebC1	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC3	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05
WebC4	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7
WebC5	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC7	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC8	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC9	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC10	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05
WebC11	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05
WebC12	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC13	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC14	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC15	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC16	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC17	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC18	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC19	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7
WebC20	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC21	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC22	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05
WebC23	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7
WebC24	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC25	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC26	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC27	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC28	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC29	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC30	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7
WebC31	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2

Table 3. The decision matrix by the second expert

	WebA1	WebA2	WebA3	WebA4	WebA5
WebC1	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC3	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05
WebC4	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC5	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC8	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC9	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC10	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC11	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC12	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC13	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC14	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC15	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC16	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC17	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC18	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC19	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05
WebC20	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC21	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC22	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC23	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC24	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC25	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC26	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC27	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC28	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC29	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC30	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC31	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2

Table4. The decision matrix by the third expert

	WebA1	WebA2	WebA3	WebA4	WebA5
WebC1	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC3	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC4	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC5	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC7	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC8	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC9	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC10	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC11	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC12	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC13	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC14	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC15	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.5,0.45,0.5,0.4,0.35,0.5,0.35,0.3,0.45
WebC16	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC17	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC18	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC19	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC20	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC21	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC22	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC23	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC24	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC25	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC26	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65
WebC27	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2
WebC28	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC29	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05
WebC30	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6	0.35,0.35,0.1,0.5,0.75,0.8,0.5,0.75,0.65	0.4,0.3,0.35,0.5,0.45,0.6,0.45,0.4,0.6
WebC31	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.2,0.2,0.1,0.65,0.8,0.85,0.45,0.8,0.7	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2	0.95,0.9,0.95,0.1,0.1,0.05,0.05,0.05,0.05	0.7,0.75,0.8,0.15,0.2,0.25,0.1,0.15,0.2

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