

# **Categorization of Website Usability Factors**

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## **Abstract**

The usability of a website refers to the ease of the system use and the ability of the users to complete their tasks efficiently and without error. Websites should be user-friendly while designed to be more multi-functional in conjunction with the increasing user necessities. Herein, understanding website usability-related factors becomes important in designing such usable systems. In the current study, we aim to provide a systematic approach to categorizing website usability factors by referencing the usability problems encountered through a cognitive walkthrough approach. In this study, first, the usability problems of a specific website were identified by three experts and the problems were rated according to the severity levels, from cosmetic problems to catastrophic problems. Then, usability problems were mapped with the website usability factors. In the last step, the categorization of website usability factors according to the severity levels was conducted with a cross-tabulation approach, correspondence and cluster analyses. As a result, Individualization and User Adaptation(IND), Privacy and Business Policies(PRV), Link Design(LNK), Search(SRC), and Help(HLP) were grouped with the severity level of catastrophic problems. These factors are the most significant factors that website developers should think about first in the design and evaluation of websites.

## **Keywords**

website usability; categorization; correspondence analysis; cluster analysis

## **Introduction**

In the present era of digital technology, websites have become a crucial aspect of our lives, providing a vast amount of information and services. Moreover, they are vital for businesses and organizations to establish an online presence and connect with their target audience. The usability of a website plays a critical role in engaging users and achieving their objectives (Lazar 2005). It refers to the extent a website can be used by its users to accomplish specific goals efficiently, effectively, and satisfactorily. According to the research conducted by Nielsen and Loranger (2006), it is a quality attribute that evaluates the ease of use of user interfaces. Poor website usability can cause users to feel frustrated and ultimately give up on using the site, which can negatively affect a business's overall performance. Creating a website is simple, easy to use, and navigating can be challenging for developers. It is revealed that usability evaluation is essential in determining a website's effectiveness, efficiency, and satisfaction. (ISO 9241-11, 2018; Ferreira et al. 2020).

The importance of website usability has been widely recognised by researchers and practitioners in the field of human-computer interaction (HCI). According to a study by Nielsen and Loranger (2006), website usability has a direct impact on user satisfaction, loyalty, and trust. Users tend to abandon websites that are difficult to use or have poor usability, leading to lost business opportunities. It was found that improving website usability can lead to a higher conversion rate and increased revenue for online businesses. Moreover, website usability can also have a significant impact on user behavior and engagement. It is found that users tend to spend more time on websites with high usability

and are more likely to return to them in the future (Cappel and Huang 2007). This can lead to increased engagement, social sharing, and word-of-mouth promotion, which can be valuable for businesses. However, many factors may affect website usability, such as navigation, layout, content, and accessibility. Therefore, it is important to understand the needs and preferences of the intended user and design websites that meet their needs.

In the current study, we aim to reveal significant factors in website design. Therefore, we proposed an approach to categorize website usability factors according to the severity levels of usability problems identified by human-computer interaction experts with a cognitive walkthrough approach. By doing so, website developers may prioritize the usability factors close to catastrophic severity levels of usability problems. Furthermore, this study provides an approach to categorizing website usability factors in terms of their importance.

Through grouping of website usability factors, thereby enabling expedited resolution of targeted issues in a group-oriented manner. The website developers can gain sustainable firsthand experience of the system by conducting their usability evaluations during the development phase according to general aspects within a single website usability framework will be presented.

The subsequent sections of this paper are structured in the following manner: Section 2 provides a literature review, Section 3 details the research methodology, Section 4 presents the collected data, Section 5 is about the analysis results. In final section, the article concludes by discussing the findings and possible future studies.

## **Literature Review**

Website usability is a critical aspect of web design and development that has received significant attention from researchers. The fact that websites serve different purposes and are used by diverse demographic groups makes it difficult to evaluate their usability compared to other software and systems (Nagpal et al. 2017). Thus, understanding significant factors in a website's design may help improve the website according to the specifications.

ISO proposed a guideline specific to websites and explained website usability with 5 main categories as general aspect, content design, content presentation, navigation and search, and general design aspect, together with 145 subcategories. At the end of this guideline, a checklist was created with detailed subcategories as the key points of the main categories to guide developers. (ISO-9241-151-2008 - Ergonomics of human-system interaction, Part 151: Guidance on Web interfaces). Another guideline usability.gov was created by the U.S. Department of Health and Human Services (Leavitt and Shneiderman 2004) presents an optimal user experience and accessibility to take into consideration hardware and software capabilities, suggests the design process and evaluation with various aspects such as the homepage, page layout, navigation, scrolling and paging, headings, titles, labels, links, text appearance, lists, widgets, graphics, images and multimedia. Additionally, it is important to consider writing web content, organizing content and search functionality. Microsoft Usability Guideline is organized as content, ease of use, promotion, made-for-the-medium, and emotion (Keeker 1997). These guidelines provide a comprehensive explanation for website usability without prioritising the factors. However, in the current study, website usability factors were categorized with statistical methods according to the severity of usability problems encountered by the experts. Sorting factors in terms of their severity becomes important when there are several factors to be considered.

There are comprehensive studies that analyze website usability in different sectors by differentiating them according to their applied scenarios and examining them from various dimensions. Venkatesh, Hoehle, and Aljafari (2014) developed a survey instrument consisting of 16 dimensions to evaluate overall usability by using the usability guidelines on usability.gov to evaluate the usability of the government healthcare website. A total of 374 citizens were surveyed, and the results showed a strong correlation between usability and citizen satisfaction with the website and their intention to use it. Using Microsoft's usability guidelines, Agarwal and Venkatesh (2002) developed a usability guideline consisting of "content, ease of use, promotion, customization, emotion" categories. A heuristic evaluation study is revealed with 1475 users assessed various websites belonging to four distinct industry sectors: airlines, online bookstores, automobile manufacturers, and car rental agencies, using the proposed instrument. Content is the most important category; the second is ease of use. Massey et al. (2013) examined how customer characteristics, such as gender and beliefs about technology, were related with usability requirements based on the Microsoft Usability Guidelines (MUG). The findings from 215 participants indicate that Beliefs that are negative, such as feelings of discomfort and insecurity may have a more significant impact on usability requirements than positive beliefs such as optimism and innovativeness. Torrente et al. (2013) designed an expert usability evaluation system called SIRIUS based on intuitive evaluation of different types of websites considering general aspects in terms of general website

design, language and goals, identity and information, structure and navigation, labelling, page layout, ease of interaction, control feedback, multimedia elements, search and help. Cappel and Huang (2007) investigated website usability in three categories: web design errors in the use of splash screen, horizontal scrolling, self-link on the home page, web design conventions in terms of link appearance, home page links and design features in terms of breadcrumb trail. During the study, INC 500 list's company websites were analysed. In the end, it is revealed that avoiding horizontal scrolling and splash pages are the most frequently followed factors for developers. Palmer (2002) developed website usability, design and performance metrics, which consist of download delay, navigability, site content, interactivity, and responsiveness. As a result of the study, the success of a website is closely linked to several factors, including the speed of access and display rate within the website (download delay), the organization, arrangement, layout, and sequencing of navigation, the amount and variety of product information in the content, the level of customization and interactivity, and the presence of feedback options and FAQs that contribute to its responsiveness. Petrie and Power (2012) investigated the usability problems identified in evaluating six highly interactive websites by 30 users in a task-based evaluation, and 14 experts using three different expert evaluation methods were investigated.

A grounded theory approach was employed to categorize the 935 usability problems from the evaluation, resulting in the emergence of four major categories: physical presentation, content, information architecture, and interactivity. Stowers (2002) provided a set of six criteria for investigating usability concerns, including online services, user assistance, navigation, legitimacy, information architecture, and accessibility. Csontos and Heckl (2021) examined page speed, loading times, size, and the frequency of HTTP queries regarding the usability of websites belonging to the public sector. It was found that nearly half of the websites employ outdated server versions and programming languages, which poses a significant threat to security. This study provided recommendations to improve the accessibility, usability, and security aspects of these websites for website developers and administrators. Nathan and Yeow (2010), evaluated various factors including the use of color and font, incorporation of graphics and multimedia, clarity of website objectives, website credibility, level of interactivity, ease of navigation, and website download speed to prioritize the crucial web usability factors for 36 different website industries.

According to the findings, the participants' inclination towards web usability parallels that of the general internet users regarding the significance of color, fonts, graphics, multimedia, clarity of website objectives, interactivity, and ease of navigation. Nonetheless, they differ in their preference for website trustworthiness as they place greater importance on the typical internet user. Moreover, the study revealed that website download speed is the least significant factor in web usability since internet connections nowadays are faster than in the past. In the study of Nagpal et al. (2015), four university websites evaluated on some usability criteria with the Fuzzy TOPSIS method for ranking. As a result, it is found that response time, ease of use, ease of navigation, and informativeness are the most significant factors for determining the usability of websites in higher education institutes. Alexander et al. (2021) conducted a study utilizing unmoderated user testing to investigate the impact of user culture on website usability. The significance of cultural and HCI factors in enhancing user performance and satisfaction in cross-cultural websites has been examined in this study. The study demonstrates that cultural disparities influence the selection of website usability features, resulting in culturally specific websites. Kous et al. (2020) conducted a usability evaluation establishing a link between the theoretical definition and practical implementation of ISO 9241-11 attributes. The evaluation utilized a comprehensive measurement framework which involved formal usability testing, the think-aloud protocol, log analysis, and questionnaires. The most common problems were revealed as warning notices in case of an error, personal account settings and content's semantic meaning.

Our study proposed a systematic approach to reveal significant factors in the design of websites. Furthermore, the factors considered from the study of Toraman (2023), who proposes a comprehensive study to reveal significant website usability factors. In addition, the categorization of the website usability factors was based on the usability problems encountered by the experts. The results of our empirical study can assist designers in identifying the crucial website usability factors associated with electronic shopping. This guidance can be used to improve usability in this specific domain as well as other web-based applications. The grouping of the website factors is useful for designers who must quickly identify and address usability issues. Furthermore, identifying and prioritizing usability problems based on their severity is crucial for improving the overall user experience and achieving the desired goals of the website. With the help of our study, designers can now more effectively detect and prioritize usability problems, ultimately leading to a more positive and satisfactory user experience.

## Methodology

This study aims to categorize website usability factors according to the severity level of usability issues defined through a cognitive walkthrough of a website. A five-step methodology was applied as given in Figure 1 and the steps are as the following:

- Step 1: Three HCI experts analyzed the websites individually and defined encountered usability issues. The problems were pooled, and three experts discuss the usability issues to have a consensus about the problems.
- Step 2: Three experts mapped the problems with the website usability factors.
- Step 3: The severity of the problems was determined with the consensus of three experts.
- Step 4: A cross-tabulation table that shows frequencies was prepared. The frequencies were calculated according to the severity of usability problems and website usability factors.
- Step 5: The website usability factors and severity levels were categorized using two analytical models: correspondence and cluster analyses.

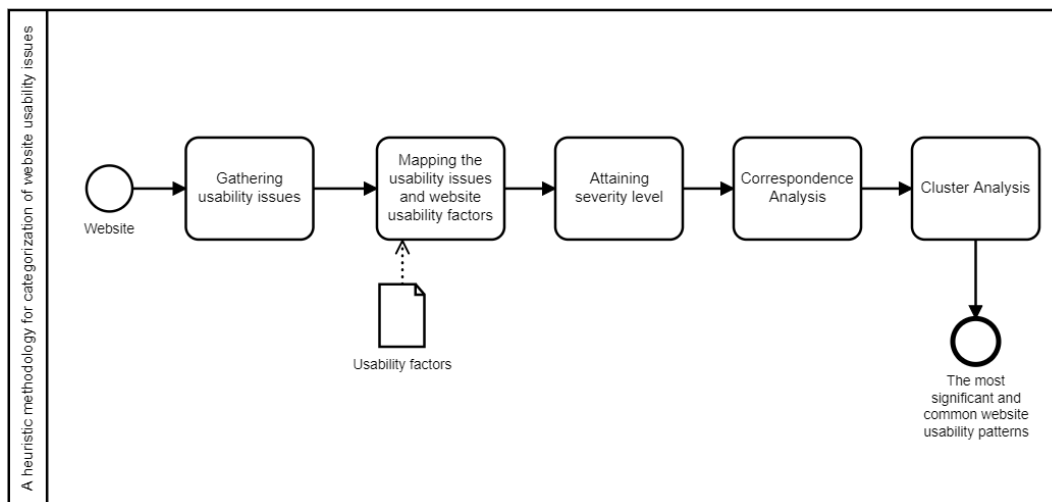


Figure 1. The Flowchart of the Proposed Methodology

The usability problems of a website were determined by experts in the field of human-computer interaction (HCI) with the cognitive walkthrough approach. In this study, three experts define usability problems individually from their perspectives by examining the website in detail. The usability problems defined by the experts were pooled to eliminate duplicate problems and discuss the problems. The majority rule was applied in which two of the three experts decide that the particular problem is a usability problem then it is noted as a usability problem encountered on that website. In the second step, the usability problems were associated with the website usability factors defined in the study of Toraman (2023). In the third step, the usability problems were categorized according to their severity level. In this step, the severity levels were determined according to the ratings defined by Nielsen (1995), as shown in Table 1. In this step, again, the majority rule was applied in which the severity level of a specific problem was determined at least two of the three experts agreed on the severity level. Then, a list of website usability problems with their corresponding severity levels was defined.

In categorizing website usability factors concerning severity levels, a cross-tabulation table was prepared, which shows the frequencies of usability problems according to severity levels and website usability factors. Then two statistical techniques were utilized to identify the association between the severity levels of usability problems and website usability factors due to the complex nature of cross-tabulation analysis. Correspondence analysis, a dimensional reduction and perceptual mapping method, was employed to expose the proximity between each severity rating of usability problems and the website usability factors. Nonetheless, interpreting the website usability factors and problem severity ratings through perceptual mapping poses a challenge. As a solution, cluster analysis is utilized as a supplementary method to categorize the severity rating of usability problems based on website usability factors. In this process, the dimensions' scores in correspondence analysis are utilized as input for the cluster analysis.

Table 1. Severity ratings of usability problems (Nielsen 1995).

<b>S0 – Not a usability problem</b>	This is not a usability issue.
<b>S1 - Cosmetic problem only</b>	A minor issue. Not require immediate attention unless extra time available.
<b>S2 - Minor usability problem</b>	Low priority issue. There is a non-urgent issue but it should be fixed.
<b>S3 - Major usability problem</b>	High-priority issue. It is important to fix issue.
<b>S4 - Usability catastrophe</b>	It is imperative to address this issue before releasing the website.

## Data Collection

To determine usability problems, three experts examined one of the e-shopping websites in Turkey. Specifically, this website serves for buying and selling books. The experts carried out all potential transactions, such as buying books, searching, and filtering book genres. The possible usability problems were noted by each expert, and with a meeting, the problems were discussed about their existence. The final decision was given if two experts agreed on the usability problem. A total of 90 usability problems were identified. One instance of a potential usability problem; is related to the system’s response to the user such as in the case of a message like "You don't have any orders yet!!!" which contains multiple points and exclamation marks may cause the users to feel concerned about their actions. Another example of a usability issue is when the icon used on a website is inconsistent with the content it represents.

In the second step, these problems were mapped with the website usability factors, shown in Table 2. The usability factors were revealed by the study of Toraman (2023). The majority rule in which at least two of the three experts agreed on the mapping was applied in the decision. All the usability problems were associated with the factors with a consensus of three experts. For example, the usability problem of ‘The system does not propose alternative search keywords when an error was made while writing the search text’ is associated with the factor ‘Search’.

Table 2. Website usability factors and their explanations

<b>Website Usability Factors</b>	<b>Explanations (Toraman, 2023)</b>
Identity and Information(IDN)	User perception regarding website identity and distinctiveness.
Content Design(CNT)	Convenient and well-organized content structure, unity, and up-to-dateness of website.
Individualization and User Adaptation(IND)	Personalized options based on a customized website experience that aligns with each user’s unique profile.
Privacy and Business Policies(PRV)	Establish trust and transparency regarding accessibility, compliance, data security, and business practices.
Page Design(PAG)	Balance the page layout to be compatible with the content structure.
Text Design(TXT)	Provide readable and comprehensible text to users.
Link Design(LNK)	Design clear, predictable, and consistently working links for easy navigation.
Interaction Objects(INT)	Create well-designed objects that allow users to interact with the website seamlessly.
Graphics, Images and Multimedia(MLT)	Ensure visual appeal and interactivity of the website to enhance user experience.
Navigation(NVG)	Enable users to navigate via logically structured menus to find the information they need quickly and easily.
Search(SRC)	Incorporate search functionality to facilitate information retrieval.
Help(HLP)	Create an extensive assistance and support mechanism for users to resolve their inquiries and issues.
Responsiveness(RSP)	Ensure that the website performs well on different devices and screen sizes.

Error Prevention(ERR)	Prevent errors caused by the system or users by incorporating validation checks and providing clear instructions.
Collaboration(COL)	Enable users to rate and collaborate through the website.
Cultural Diversity and Multilingual Use Design(CLT)	Consider cultural norms, values, and sensitivities and adapt the website for different languages to enhance global accessibility.

## Results and Discussion

The categorization of the website usability factors according to the severity levels of usability problems was conducted with a cross-tabulation approach, correspondence analysis and clustering.

The cross-tabulation, as shown in Table 3, shows the frequencies of usability problems. The columns show the website usability factors, and the rows show the severity levels. According to the results, 11 usability problems were categorized as purely cosmetic (S1), 20 as minor usability problems, 39 as major, and 20 as usability catastrophes. Although the severity and open code frequency are formed, determining the proximity among website usability factors and severity levels were hard to determine. Thus, correspondence and cluster analyses were employed as two analytical techniques to reveal relative distances between the factors and the severity levels.

Table 3. Cross-tabulation between severity levels and website usability factors

	IDN	CNT	IND	PRV	PAG	TXT	LNK	INT	MLT	NVG	SRC	HLP	RSP	ERR	COL	CLT	Percentages
<b>S1</b>	0	1	0	0	2	4	0	3	0	0	0	0	0	1	0	0	12%
<b>S2</b>	1	4	0	0	1	4	1	6	0	0	1	0	1	0	1	0	22%
<b>S3</b>	2	3	1	1	3	2	2	3	1	15	0	0	1	3	1	1	43%
<b>S4</b>	0	0	1	1	0	1	4	1	0	7	2	1	0	2	0	0	22%
<b>Pcent.</b>	3%	9%	2%	2%	7%	12%	8%	14%	1%	24%	3%	1%	2%	7%	2%	1%	100%

Correspondence analysis was performed to uncover the proportionate impact of each dimension in elucidating the variance (inertia). Correspondence analysis is a multivariate statistical technique to explore the relationship between two or more categorical variables. The goal of CA is to represent the joint distribution of the variables in a low-dimensional space while preserving the information contained in the original contingency table (Greenacre 2017). Before correspondence analysis, the frequency values were weighted. Then, correspondence analysis was performed using SPSS statistical package program. The concept of inertia in correspondence analysis refers to the proportional significance of each dimension in clarifying the variability among the categories (Hair et al. 1998). Based on the information provided in Table 4, it can be observed that a two-dimensional solution explains 88.2% variance. The researchers opted for a two-dimensional solution to balance the interpretability and explained variance in this study.

Table 4. Explained variance of dimensions

Dimension	Inertia	Proportion of Inertia	
		Explained Variance (%)	Cumulative Explained Variance (%)
1	0.681	%70.4	%70.4
2	0.172	%17.8	%88.2
3	0.114	%11.8	%100
Total	0.966	%100	%100

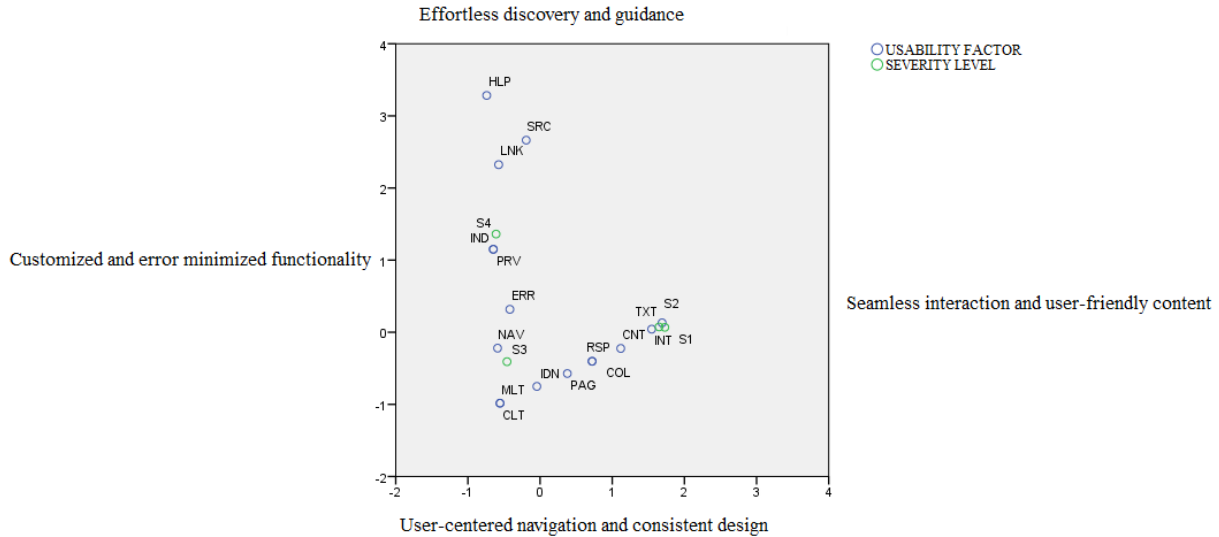
Table 5 illustrates how the severity level of usability problems and the website usability factors contribute to the inertia of each dimension.

Table 5. The severity level of usability problems and heuristic codes adherence to the inertia of each dimension

Severity Levels and Usability Heuristic Codes	Marginal Profile	Dimension-1	Dimension-2
S1:Cosmetic problem only	0.065	1.729	0.068
S2:Minor usability problem	0.162	1.648	0.074
S3:Major usability problem	0.604	-0.458	-0.408
S4:Usability catastrophe	0.169	-0.61	1.362
Identity and Information(IDN)	0.011	-0.045	-0.751
Content Design(CNT)	0.056	1.118	-0.224
Individualization and User Adaptation(IND)	0.004	-0.648	1.15
Privacy and Business Policies(PRV)	0.004	-0.648	1.15
Page Design(PAG)	0.030	0.377	-0.572
Text Design(TXT)	0.080	1.69	0.13
Link Design(LNK)	0.045	-0.574	2.323
Interaction Objects(INT)	0.119	1.546	0.042
Graphics, Images and Multimedia(MLT)	0.002	-0.556	-0.984
Navigation(NVG)	0.593	-0.589	-0.22
Search(SRC)	0.011	-0.192	2.663
Help(HLP)	0.002	-0.74	3.284
Responsiveness(RSP)	0.004	0.721	-0.402
Error Prevention(ERR)	0.030	-0.419	0.318
Collaboration(COL)	0.004	0.721	-0.402
Cultural Diversity and Multilingual Use Design(CLT)	0.002	-0.556	-0.984

According to the perceptual mapping, problems splitted around the severity levels, and they were named “Effortless discovery and guidance”, “Seamless interaction and user-friendly content”, “User-centered navigation and consistent design”, and “Customized and error minimized functionality” as given in Figure 2.

“*Customized and error minimized functionality*” means to design and implement the features on a website that are tailored to the needs and preferences of its users while minimizing the likelihood of errors occurring. “*Effortless discovery and guidance*” refers to easily accessible or located information via the search function and consistent links and helpful guidance provided to ensure a smooth experience in terms of website design. “*Seamless interaction and user-friendly content*” refers to a website with quality and easy-to-understand content and user-friendly interface elements that allow users to interact with the system seamlessly and intuitively. The website should have a clear and logical structure that organizes its content meaningfully. “*User-centered navigation and consistent design*” means that the navigation system can be designed to meet the needs and expectations of the users, making it easier to find what they are looking for and complete their desired actions. Additionally, the design style, colors, and imagery across all website pages should be consistent and well-organized.



○ Severity Levels	○ Usability Factors
S1: Cosmetic problem only	Identity and Information(IDN)
S2: Minor usability problem	Content Design(CNT)
S3: Major usability problem	Individualization and User Adaptation(IND)
S4: Usability catastrophe	Privacy and Business Policies(PRV)
	Page Design(PAG)
	Text Design(TXT)
	Link Design(LNK)
	Interaction Objects(INT)
	Graphics, Images and Multimedia(MLT)
	Navigation(NVG)
	Search(SRC)
	Help(HLP)
	Responsiveness(RSP)
	Error Prevention(ERR)
	Collaboration(COL)
	Cultural Diversity and Multilingual Use Design(CLT)

Figure 2. Perceptual map of severity levels and website usability factors

Although correspondence analysis may reveal the proximity of website usability factors and severity levels, there may be ambiguity because it is not easy to recognise which factor is close to the other. For example, it is not easy to understand if the usability factor Responsiveness(RSP) is close to S3 or S2-S1 severity levels. That is why a complementary technique of correspondence analysis, which is cluster analysis, was applied for further understanding. Cluster analysis was used to understand the categorization of website usability factors according to the severity of usability problems. Hierarchical clustering analysis was used, and the features of clustering analysis are extracted from the revealed dimension weights from correspondence analysis.

The hierarchical cluster analysis's results are shown as a dendrogram in Figure 3. According to the dendrogram, there are three clusters. The first cluster occurs around cosmetic or minor problems, and they are related to Text Design(TXT), Interaction Objects(INT), Responsiveness(RSP), Collaboration(COL), Content Design(CNT) and Page Design(PAG). The second cluster contains S3: major usability problems which are associated with Navigation(NVG), Error Prevention(ERR), Identity and Information(IDN), Cultural Diversity and Multilingual Use Design(CLT) and Graphics, Images and Multimedia(MLT). The third one is usability problems that cause catastrophic usability are Search(SRC), Help(HLP), Link Design(LNK), Individualization and User Adaptation(IND) and Privacy and Business Policies(PRV). On the other hand, dividing severity levels and related usability heuristic codes into two clusters (catastrophe usability problems and others) may result in a more robust solution about what the most important usability problems are before website releases for the website developers and designers who need to make final check but does not have enough time.



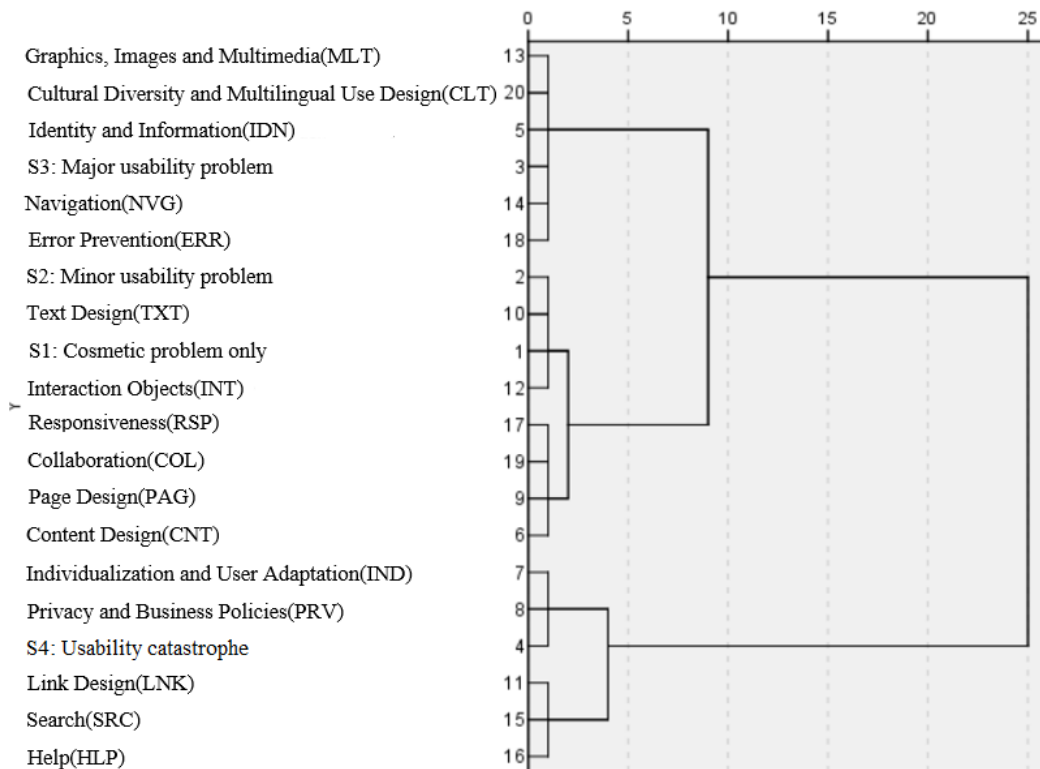


Figure 3. Hierarchical Clustering Analysis - Dendrogram

Overall, using both correspondence analysis and cluster analysis together can provide a more comprehensive understanding of the relationships between website usability factors and severity levels of usability problems and help inform the design of more usable products or systems.

## Conclusion and Future Research

In the current study, we aim to provide a way for website designers to propose a list of website usability factors that are more severe than the others. In doing this, the first real-life usability problems were identified through a cognitive walkthrough approach with three experts. The problems were grouped according to their severity levels proposed by Nielsen (1995). Then, these problems were associated with the website usability factors to reveal which problems are related to which factors and also usability problems' severity levels were also taken into consideration. According to the results, catastrophic usability problems are associated with the factors; Individualization and User Adaptation(IND) and Privacy and Business Policies(PRV), Link Design(LNK), Search(SRC) and Help(HLP).

Individualization and User Adaptation(IND) describes the process of generating a unique and customized experience for website users, utilizing information such as their preferences, behaviors, and other relevant data. The principle of individualization suitability is among the dialogue principles outlined in the ISO 9241-110 standard for designing user-friendly interfaces. Similarly, according to ISO BS EN ISO-9241-151 (2008) adapting a website's user interface to individual users or groups can enhance usability by providing relevant information efficiently. Martin et al.'s (2021) novel software approach enhances and streamlines the customer journey combines the analysis of existing customer data, persona-based design, and situation-aware runtime adaptations, allowing for improved task completion for both the e-commerce provider and the client. In the study of Janavery et al. (2009), a conceptual design that reflects user experiences was created by merging a set of patterns with personas.

The study's findings aid designers in developing designs that are user-friendly. It is highlighted that personalization impacts trust perception (Briggs et al. 2004) and provides user to get most affinity desires in a shorter time (Venkatesh and Ramesh 2006). Additionally, being aware of balanced customization is crucial for usability to ensure that users

are not bombarded with excessive options or information (Bodoff and Ho 2015). By the findings in the literature (Martin et al. 2021; Bodoff and Ho 2015; Briggs et al. 2004; Venkatesh and Ramesh 2006; Bodoff and Ho 2015), the factors related to tailored experience in terms of individualization and user adaptation is significant in eliminating catastrophic website usability problems.

Another factor in eliminating significant usability problems in website design is related to privacy. This finding is similar to the findings in the literature (Dabrowski et al. 2014; Proctor et al. 2008; Miller et al. 2012; Brunetto et al., 2022). According to Dabrowski et al. (2014), there is a risk associated with customers serving themselves through a website, as they may not be adequately trained to do so (Dabrowski et al. 2014). In the study of Proctor et al. (2008), it is revealed that most privacy policies are addressed to more educated users, which means that the likelihood of an average user understanding them is quite low. Thus, it is argued in the study of Miller et al. (2012) that numerous issues arise when users do not completely comprehend a website's privacy practices or fail to use the privacy features to align with their objectives. Therefore, it is important to obtain users' understanding of privacy policies and their attitudes toward the policies and the websites they are hosted on to ensure effective usability. Additionally, the findings in the study of Brunotte et al. (2022) aid users in locating privacy policies more quickly and facilitates a better understanding of the pertinent information.

Another important website usability factor is having predictable and consistently working links that help users easily identify clickable elements and understand where each link will take them. According to W3C (2008), proficiently crafted links can facilitate efficient navigation for website users, while inadequately crafted links can confuse. Research by Nielsen (1999) and Kirschner et al. (2011) has shown that utilizing descriptive links instead of generic phrases can enhance users' comprehension of the link's destination and confidence in the website.

The search function that conforms to usability is found to be important in the design of a usable website. Similarly, Zhang and Adipat (2005) found that the search functionality can improve the overall user experience by providing a sense of control to the user (Zhang and Adipat 2005). When users cannot find what they are looking for, they may feel powerless and disoriented. Visser and Weideman's (2014) research showed a complementary relationship between website usability and search engine optimization.

Although this study proposed a way to understand the significant factors in the design of a website, as a further study, we have some recommendations. First, the usability problems were defined by analyzing one type of website. This study can be enhanced by including different types of websites to generalize the findings. Furthermore, more usability problems may be defined by extending this study. Besides, the usability problems may be collected from the real users of the websites through user testing to get the opinions of another group of stakeholders, not only from experts. Additionally, the group differences may be analyzed by collecting data from real users, experts and website programmers. By doing so, whether the usability problems encountered by these groups differ from each other may be revealed.

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