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Indonesian Political Party Website Portal Evaluation Rank Based on Manual and Automated Usability Score

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Abstract

As Indonesia approaches a crucial election year in 2024, the digital engagement of political parties website plays a significant role in shaping the government's future direction. This study evaluates the usability of 17 official political party websites using both manual expert assessments and automated tools, providing insights and recommendations for improving their digital presence on basic layer of information. Based on the study of 17 political party websites in Indonesia, manual usability testing by experts showed an average agreement rate of 80%, with layout receiving the lowest score of 70%. Automated usability testing revealed that 5.9% of the websites received a grade B, 17.6% grade C, 41.2% grade D, 23.5% grade E, and 11.8% grade F, resulting in a comprehensive ranking from two different perspectives.

Keyword: WEQ, political party website, usability testing

1 Introduction

The year of 2024 is an important year that can determine the direction of Indonesian government for the next five years. The democratic party event which is held every five years is crucial considering many strategic government positions which also must be filled through this election process (general election). Political parties as one of the pillars of democracy are important objects that become the main actors as a forum for selecting national and regional leadership [1]. The movements of political parties in preparing for the contest are an interesting object for study amidst the increasingly massive development of digital technology in Indonesia.

Based on survey results from the Indonesian Internet Service Providers Association (APJII), internet users in Indonesia in 2023 have reached 78.19% of the total population of Indonesia. [2]. The trend of using information technology in the e-democracy process by political parties is interesting considering that in the 2024 elections most voters will come from young groups (millennial generation and Gen Z) who are known to be adaptive to technology. [3]. The characteristics of this young group should be able to encourage political parties to offer an attractive, high-quality, and informative forum for those who seek official information, so that it can have an impact on credibility and interest among the largest group of voters.

The basic flow of information that can be utilized by political parties on the internet is through a website page. Holanda and Corrêa revealed that websites for political parties are like places that can be used to build the identity of a party [4]. Šindleryová and Garaj also state that websites are tools that can be used by political parties or politicians to convey opinions, ideas, thoughts, and attitudes related to social and political life that occurs in society [5]. If political party websites can be processed by integrating interesting digital content, the results can increase sustainable engagement between political parties and their supporters [6]. This confirms that political party websites are an important component that political party administrators in Indonesia must also pay attention to.

As a contribution to the process of perfecting e-democracy in Indonesia at the web presence stage on the political party side, this research seeks to evaluate the usability of 17 official websites belong to the political parties participating in the 2024 General Election. Usability evaluation needs to be carried out because it is one of the quality attributes used to measure the ease of a digital product interface when used by users [7]. Redish and Ginny in [8] define that usability is a measure of effective communication between a product and users. Moreover, usability has been proven to have a significantly positive effect on the quality of websites in an organization [9].

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Figure 1. Official website of political party in indonesia [10]

It is unfortunate that most of the research related to evaluating website usability within the scope of the e-democracy pillar focuses more on the government side (executive, legislative and judicial), while research related to websites on the political party side is still rarely found [6]. In fact, based on Norris' opinion in The Virtual Political System in 1998, political parties are also an important pillar in the maturity of e-democracy in a country [11]. Thus, it is important to pay attention to political parties to strengthen one of the pillars that form e-democracy.

Website evaluation in this study used two approaches, namely manual evaluation by experts and automated evaluation by tools. These two evaluations were carried out to obtain a picture that complements each other so that holistic evaluation results are obtained [12]. In the manual evaluation by expert, the evaluation component items used refer to the Website Evaluation Questionnaire (WEQ), which was first discovered by Elling et al as one of the assessment items that specifically used to evaluate the quality of websites within the government sphere [13]. Meanwhile, in automated evaluation, the assessment is carried out using the most used automated usability tool, GTmetrix [14][15][16]. The results of each evaluation will provide values and recommendations for improvement items on each political party website. Furthermore, the values obtained from the two evaluation approaches will be combined to rank all the 17 official websites of national political parties in Indonesia.

2 Literature Review

Research regarding evaluating website usability in terms of e-democracy has been carried out for many years. The techniques applied in usability evaluation also vary. Most components in usability research come from Nielson's Heuristics which include the principles of simplicity, effectiveness, content relevance, user interface consistency, look and feel of website, help and support features, and

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user satisfaction [17]. In other research, Ashraf et al in 2017 made an evaluation to compare the Pakistan government website template after and before the redesign using the Usability Heuristic component so that it could be seen that there was an improvement in terms of usability heuristics [7]. Evaluation of government institutions in Indonesia was also carried out by Moersahit and Persada in 2022, where they evaluated 28 provincial government websites in Indonesia using the Heuristic Usability technique with three evaluators. The results of this research are in the form of a severity levels ranking on 28 government websites [18]. Another example of research on government institutions in Indonesia was carried out by Hasnanursanti et al in 2022, where they carried out an evaluation of the website belong to the Surakarta City government involving four expert evaluators. The results of this research succeeded in detecting 21 problem points which included cosmetic issues, minor issues, major issues, and usability catastrophe [19]

Research in e-democracy on the political party side has also been done. For example, research by Ayub Tayyaba et al in 2014 carried out an evaluation of the three largest political party websites in Pakistan using Nielson's Heuristics and found that these websites generally showed quite good evaluation results [17]. Another research was by Sajna-Kosobucka & Sajna-Kunowsky in 2023 who conducted an Information Architecture (IA) evaluation of two political parties (Republican and Democrat) in the United States using heuristic qualitative methods by expert evaluators. The results of this research found that the Republican party website was around 14.09% better than the Democratic party website [20].

Other research related to usability uses a derivative of heuristic evaluation, namely the Website Evaluation Questionnaire (WEQ) which was initiated by Elling et al in 2007. Among them is research conducted by Van Gelder et al in 2020 regarding the evaluation process of the SAFE application (eHealth application for women who experience violence by an intimate partner) which is carried out using several methods, one of which is by using the Website Evaluation Questionnaire (WEQ) questionnaire component related to items of relevance, language, layout, understanding, completeness, structure, discoverability and ease of use [21]. In 2021, Al-Sakran and Al Sudairi carried out a usability and accessibility evaluation of the Saudi Unified National Platform, a mobile-based platform of Saudi government, by combining usability-accessibility using two approaches, namely manual evaluation by expert and automated evaluation. In the manual evaluation, Website Evaluation Questionnaire (WEQ) question items are used, while in the automated evaluation, GTmetrix, Wave, Dareboost and Google mobile-friendly tests are used. This research succeeded in uncovering deficiencies related to lack of compliance with international web standard recommendations on the Saudi Unified National Platform website [22]. The study by Youhasan et al. in 2022 also employed the Website Evaluation Questionnaire (WEQ) with expert evaluators. The results of this study showed a satisfaction rate ($\geq$ 80%) for usability, hyperlinks, structure, relevance, comprehension, completeness, and layout [23].

Most usability evaluations conducted in previous studies have used Nielsen's heuristic usability method. This method primarily emphasizes assessments based on the learnability component, while evaluations of other components, such as efficiency, satisfaction, error, utility, and memorability, are given lower weight [24]. Furthermore, according to the study by Kumar et al. (2023), it is mentioned that evaluations using Nielsen's heuristic usability are more suitable for conducting assessments during the early design stages or for prototypes [25]. However, in this case, the object being evaluated is the website of a political party that has already reached the product release phase. Given this consideration, the use of the Website Evaluation Questionnaire (WEQ), which is specifically designed for evaluating websites, is deemed more relevant. The WEQ offers a multidimensional framework that captures various aspects of website quality in a balanced manner [26]. The contribution of this research lies in the use of a new object for WEQ testing within the realm of e-democracy, specifically focusing on political parties in Indonesia. Additionally, this study aims to provide a valuable reference in an area where research has been previously limited, as evaluations in the e-democracy pillar have mostly focused on the government side. In contrast, this study also integrates automated evaluation using GTMetrix, as proposed by Al-Sakran and Al Sudairi (2021), to provide a combined perspective on the evaluation of political party websites in Indonesia.

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3 Research Methodology

This research began with a literature study to identify problems by looking for references that support research in the form of international and national journals, as well as articles related to the research topic. Furthermore, 17 official websites belonging to national political parties that will take part in the General Election in 2024 were documented. In line with the documentation process, an initial analysis process is also carried out, namely ensuring the website is active and accessible. The next step is to carry out a usability assessment process using two methods, which are manual evaluation by experts and automated evaluation by tools.

At the manual evaluation stage, expert evaluators were instructed to carry out the evaluation process using the help of Website Evaluation Questionnaire (WEQ) items (Table 1). The WEQ item consists of 26 questions covering the components ease of use, hyperlinks, structure, relevance, comprehension, completeness, and layout [26]. Expert evaluators fill in the WEQ using five Likert scales, starting from 1 (strongly disagree) to 5 (strongly agree) online starting from August 5, 2023, to September 5, 2023. A short briefing is then carried out with the evaluators to carry out observations and fill in the results evaluation of 17 political party websites. From the results of the manual evaluation feedback, the expert agreement rate will be calculated by adding up the responses from the Likert scale divided by the number of expert evaluators. An agreement rate value on a scale of 75% or above is considered good and a value above 90% is considered excellent [23].

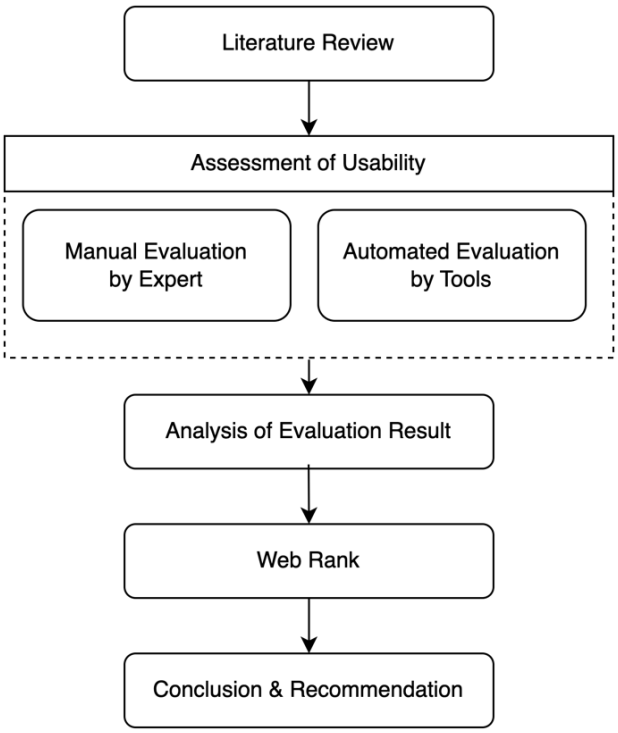

Figure 2. Research flow

In line with the manual evaluation process by experts, the automated evaluation process is carried out with the help of the GT Metrix tool (https://gtmetrix.com/) to obtain evaluation components related to performance, load time, page size, and total page requests [14][15][16]. In the performance component, the higher the value, the better the website performance (0-100%). In the load time component, the shorter the resulting time, the better the website. In the page size and page request components, the smaller the website size, the better it is considered.

After the two evaluation stages have been carried out, the next process is to combine the results from the manual evaluation and automated evaluation so that the websites of the 17 political parties can be ranked. The combination of two different score components is normalized using Min-Max normalization so that later the two components can be combined, or the average value of the usability score obtained can be calculated [27] .

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$$x' = \frac{x - min(x)}{max\,(x) - min(x)}$$ [27] (1)

In the final stage, recommendations for improvements will be provided regarding the usability of the official websites of each political party.

Table 1. Item website evaluation questionnaire (WEQ) [13]

	Ease of Use
WEQ 1	I find this website easy to use
WEQ 2	I had not difficulty using this website
WEQ 3	I consider this website user friendly
	Hyperlinks
WEQ 4	The homepage clearly directs me towards the information I need
WEQ 5	The homepage immediately points me to the information I need
WEQ 6	It is clear which hyperlink will lead to the information I am looking for
WEQ 7	Under the hyperlinks, I found the information I expected to find there
	Structure
WEQ 8	I know where to find the information I need on this website
WEQ 9	I was not constantly being redirected on this website while I was looking for information
WEQ 10	I find the structure of this website clear
WEQ 11	The convenient set-up of the website helps me find the information I am looking for
	Relevance
WEQ 12	I find the information in this website helpful
WEQ 13	The information in this website is of little use to me
WEQ 14	This website offers information that I find useful
	Comprehension
WEQ 15	The language used in this website is clear to me
WEQ 16	I find the information in this website easy to understand
WEQ 17	I do not find many words in this website difficult to understand
	Completeness
WEQ 18	This website provides me with sufficient information
WEQ 19	I find the information in this website incomplete
WEQ 20	I find the information in this website precise
	Lay out
WEQ 21	I think this website looks unattractive
WEQ 22	I like the way this website looks
WEQ 23	I find the design of this website appealing

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WEQ 24	The search option on this website helps me to find the right information quickly
WEQ 25	The search option on this website gives me useful results
WEQ 26	The search option on this website gives me too many irrelevant results

4 Result and Analysis

The results and analysis of this study are divided into three sections. The first section covers the manual evaluation by experts using the Website Evaluation Questionnaire (WEQ). The second section addresses the automated evaluation using GT-Metrix Tools. The third section presents the web usability rank based on the combination of the manual evaluation score by experts and the automated usability score by GT-Metrix.

4.1 Manual Evaluation

The debate regarding the sample size of testers used in usability testing has been extensively discussed in various research studies and conferences related to usability engineering. According to the research conducted by Alroobaea and Roobaea, employing five expert evaluators is deemed sufficient to identify usability issues concerning the appearance, structure, and content of a digital product [28]. Thus, in this study, it was decided to use five expert evaluators [23]. Efficiency in determining the number of evaluators for usability testing is also a consideration, given that the evaluation involves 17 political party websites, with each evaluator required to review and complete 26 items on the WEQ. The criteria for evaluators in this study are a minimum of a bachelor's degree in computer science and at least two years of professional experience in UI/UX, quality assurance, or front-end web development.

Table 2. List of expert evaluator [23]

	Expert 1	**Expert 2**	**Expert 3**	**Expert 4**	**Expert 5**
Role	System Analyst	Product Designer	Quality Assurance	System Analyst	Product Designer
Institution	Vascom	Telkom Foundation	PUTI Telkom University	PUTI Telkom University	Informatika Media Pratama
Eduaction	S1- Teknik Informatika	S1- Sistem Informasi	S2- Sistem Informasi	S1- Informatika	S1- Sistem Informasi
Years Experienced	3 tahun	2 tahun	3 tahun	2 tahun	3 tahun
Skills	System Analyst, User Experience	System Analyst, UI/UX	Senior Quality Assurance	System Analyst	Mid UI/UX Designer

Based on the results of the manual evaluation using WEQ conducted by expert evaluators, the interpretation of the results is presented in two forms: the agreement rate to detect items requiring improvement, and the average WEQ scores across seven components, which serve as the basis for ranking the 17 political party websites in Indonesia.

Figure 3 illustrates the visualization of the grouping of scores for the 26 WEQ items across each political party website, based on the agreement rate assessment. Generally, it can be observed that most of the agreement rate evaluations for each political party website fall within the "good" category at 80%. However, there are also items that fall into groups with lower agreement rates, specifically in the 60% and 40% ranges, indicating areas that still require improvement.

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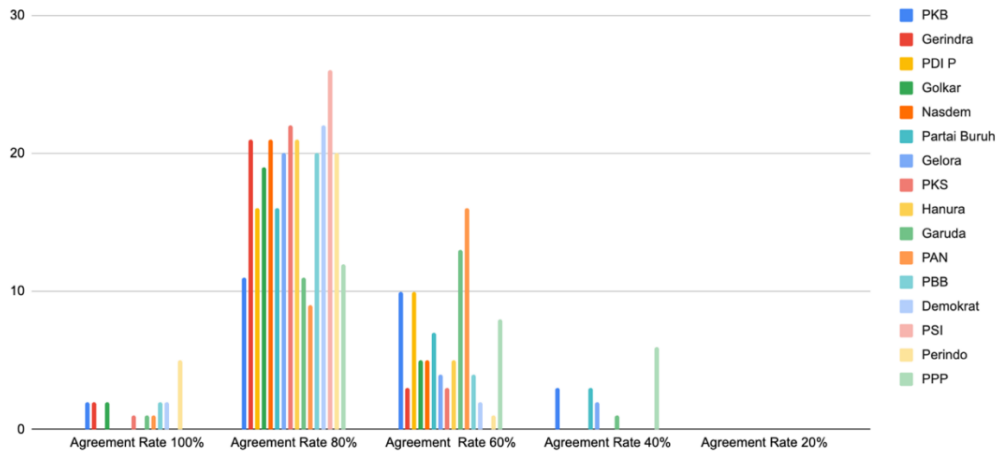

Figure 3. Distribution of agreement rate for WEQ items across political party websites in indonesia

In this section, the focus on improvement is directed towards WEQ items that received an agreement rate of less than 75%. Specifically, this includes items that fall within the 60%, 40%, and 20% agreement rate ranges [23]. In the 20% agreement rate group, no political party websites fell into this category. In the 40% agreement rate group, five political party websites were identified: PPP (6 items), PKB (3 items), Partai Buruh (3 items), Partai Gelora Indonesia (2 items), and Partai Garuda (1 item). In the 60% agreement rate group, all political party websites had items requiring improvement within this category, except for PSI. Specifically, the distribution of items needing improvement is as follows: PAN (16 items), Garuda (13 items), PKB (10 items), PDI P (10 items), PPP (8 items), Partai Buruh (7 items), Golkar (5 items), Nasdem (5 items), Hanura (5 items), Gelora (4 items), PBB (4 items), Gerindra (3 items), PKS (3 items), Demokrat (2 items), Perindo (1 item), and PSI (0 items). Detailed information on the items needing improvement for each party can be found in the table in the appendix.

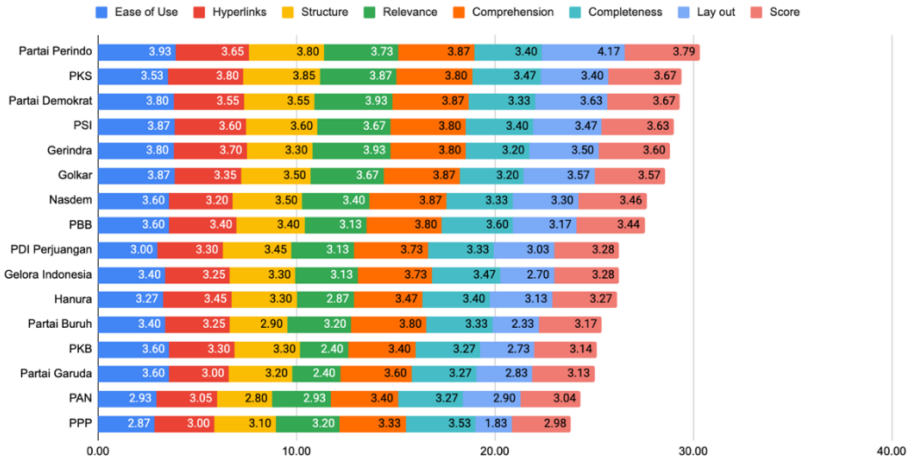

Figure 4. Ranking of 17 political party websites based on WEQ components

After calculating the average scores for each WEQ component—namely ease of use, hyperlinks, structure, relevance, comprehension, completeness, and layout—the results are presented in Figure 4. This graph illustrates the scores for each political party website across the seven components of the Website Evaluation Questionnaire (WEQ). For example, the Gerindra Party website received an overall manual usability score of 3.6, with the lowest score in the "completeness" component (concerning the completeness of information on the website) at 3.2, and the highest score in the "relevance" component (pertaining to the usefulness of information on the website) at 3.93. Thus, it can be concluded that the Gerindra Party website should prioritize improvements related to the completeness of the information presented on the site.

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In general, the graph in Figure 4 illustrates the ranking of manual evaluations by experts. The ranking, from the highest to the lowest manual evaluation scores, is as follows: Perindo (3.79), PKS (3.67), Partai Demokrat (3.67), PSI (3.63), Partai Gerindra (3.60), Partai Golkar (3.57), Partai Nasdem (3.46), PBB (3.44), PDI Perjuangan (3.28), Partai Gelora Indonesia (3.28), Partai Hanura (3.27), Partai Buruh (3.17), PKB (3.14), Partai Garuda (3.13), PAN (3.04), and PPP (2.98). The average final usability score is 3.38, indicating that 50% of the evaluated political party websites fall below this average usability score.

The lowest-rated component across all parties was found to be "layout," with an average score of 3.11, corresponding to an agreement rate of 70%. This component includes items related to the website's visual design or interface (WEQ21, WEQ22, WEQ23) and search options for finding accurate information (WEQ24, WEQ25, WEQ26). Based on these findings, it can be concluded that, on average, the 17 political party websites exhibit less appealing interface designs and less precise search options.

On the other hand, an interesting finding among the top five rankings is the presence of two relatively new parties: Perindo, which occupies the first position, and PSI, which is in fourth place. For the Perindo party, the most notable aspect is its score for the "layout" component, which achieved the highest rating of 4.17. When converted to an agreement rate, this translates to 80%, the highest score compared to other political party websites.

4.2 Automated Evaluation

The automated evaluation was conducted on August 11, 2023, using the GTmetrix web page performance test tool in unthrottled connection mode. The evaluation index for automated usability includes performance with a weight of 60% and structure with a weight of 40%. The performance metrics cover Largest Contentful Paint (LCP), Total Blocking Time (TBT), Cumulative Layout Shift (CLS), First Contentful Paint (FCP), Speed Index, and Time to Interactive (TTI). Meanwhile the structure metrics address the efficiency of website scripts, image usage, caching, and standardization in website development.

In general, the average grade score for the 17 political party websites is 64, which falls into category D. One party received a grade of B (Partai Demokrat), three parties received a grade of C (PSI, Partai Garuda, and Partai Perindo), seven parties are categorized under D (PPP, Gelora Indonesia, Hanura, Golkar, PKB, Nasdem, and PDI Perjuangan), Four parties are in category E (PKS, PKN, Gerindra, and PAN) and Two parties are in category F (PBB and Partai Buruh).

Table 3. Automated usability test rank result with gtmetrix (Source: https://gtmetrix.com/)

Nama Partai	Performance	Structure	Score	Grade
Partai Demokrat	84	97	89.2	B
PSI	82	74	78.8	C
Partai Garuda	82	74	78.8	C
Partai Perindo	76	81	78	C
PPP	57	89	69.8	D
Gelora Indonesia	69	66	67.8	D
Hanura	56	78	64.8	D
Golkar	55	75	63	D
PKB	70	52	62.8	D
Nasdem	56	72	62.4	D
PDI Perjuangan	64	56	60.8	D
PKS	43	82	58.6	E
PKN	61	54	58.2	E

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Gerindra	34	90	56.4	E
PAN	41	74	54.2	E
PBB	27	78	47.4	F
Partai Buruh	36	59	45.2	F

Based on the results, only Partai Demokrat achieved a safe score with a performance rating of 84 and a structure rating of 97, resulting in a grade of B. In contrast, the other 15 parties received grades of C, D, E, or F. This indicates that most party websites require improvements in both performance and structure according to GTmetrix audit criteria to enhance their scores.

4.3 Website Usability Rank

The scores from the manual usability evaluation by experts and the automated evaluation were combined to obtain the overall usability ranking for the 17 political party websites in Indonesia. Given that the scores from the manual evaluation and the automated evaluation were in different formats, a Min-Max normalization method was employed to standardize the scores (1).

Table 4. Usability score metric rank

Partai Politik	Manual Evaluation	Automated Evaluation	Manual Evaluation'	Automated Evaluation'	Usability Score
Partai Demokrat	3.67	89.20	0.84	1.00	0.92
Partai Perindo	3.79	78.00	1.00	0.75	0.87
PSI	3.63	78.80	0.80	0.76	0.78
PKS	3.67	58.60	0.85	0.30	0.58
Golkar	3.57	63.00	0.73	0.40	0.57
Gerindra	3.60	56.40	0.77	0.25	0.51
Nasdem	3.46	62.40	0.59	0.39	0.49
Partai Garuda	3.13	78.80	0.18	0.76	0.47
Gelora Indonesia	3.28	67.80	0.37	0.51	0.44
Hanura	3.27	64.80	0.35	0.45	0.40
PDI Perjuangan	3.28	60.80	0.37	0.35	0.36
PBB	3.44	47.40	0.57	0.05	0.31
PKB	3.14	62.80	0.20	0.40	0.30
PPP	2.98	69.80	0.00	0.56	0.28
PAN	3.04	54.20	0.07	0.20	0.14
Partai Buruh	3.17	45.20	0.24	0.00	0.12

As shown in Table 4, the values from the manual evaluation and the automated evaluation tend to be non-linear. A political party website might receive a high score in the manual evaluation but have a low score in the automated evaluation. On average, the difference between the two evaluations is about 3.5%. Some political party websites, such as Partai Demokrat, Partai Perindo, PSI, and PDI Perjuangan, exhibit only a slight difference between manual and automated evaluations. However, most other party websites show a significant disparity between the results of the two evaluation methods.

At this stage, the combined scores cannot be used as a definitive criterion to categorize political party websites as excellent, good, neutral, or bad. The rankings mainly indicate the overall usability

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efforts of the 17 parties. The top five rankings based on the combined scores are as follows: Partai Demokrat (0.92), Partai Perindo (0.87), PSI (0.78), PKS (0.58), and Golkar (0.51).

5 Conclusion

Based on the research conducted on the 17 political party websites in Indonesia, the following conclusions can be drawn: (1) Manual Usability Testing by Experts: The evaluation based on the Website Evaluation Questionnaire (WEQ) revealed that some items still received an agreement rate below 75%, specifically in the 60% and 40% ranges. However, the average agreement rate across all components—ease of use, hyperlinks, structure, relevance, comprehension, completeness, and layout—was 80%. A detailed examination of all political party websites indicates that the lowest scoring component is the website layout, with an average score of 3.11, which translates to a 70% agreement rate; (2) Automated Usability Evaluation: For the 17 political party websites in Indonesia, the automated evaluation scores on performance and structure using GTMetrix yielded the following grades: 5.9% received a grade of B, 17.6% received a grade of C, 41.2% received a grade of D, 23.5% received a grade of E, and 11.8% received a grade of F; (3) Combined Manual and Automated Usability Testing: The integration of manual and automated usability testing has successfully provided a ranking map of political party websites in Indonesia from two distinct perspectives.

Reference

[1] W. Setiadi, “Peran Partai Politik dalam Penyelenggaraan Pemilu yang Aspiratif dan Demokratis,” Artikel Hukum Tata Negara dan Peraturan Perundang-undangan. Accessed: Jun.27,2023.[Online].Available: https://ditjenpp.kemenkumham.go.id/index.php?option=com_content&view=article&id=507:peran-partai-politik-dalam-penyelenggaraan-pemilu-yang-aspiratif-dan-demokratis&catid=100:hukum-tata-negaraperundang-undangan&Itemid=180&lang=en

[2] F. Andrean W, “Pengguna Internet di Indonesia Makin Tinggi,” Indonesiabaik.id. Accessed: Jun. 25, 2023. [Online]. Available: https://indonesiabaik.id/infografis/pengguna-internet-di-indonesia-makin-tinggi#:~:text=Berdasarkan%20hasil%20survei%20Asosiasi%20Penyelenggara,sebanyak%20210%2C03%20juta%20pengguna.

[3] P. Safira, “Pemilu 2024 Semakin Dekat, Berapa Jumlah Pemilih Muda dan Perempuan?,” Tempo.co. Accessed: Jun. 27, 2023. [Online]. Available: https://nasional.tempo.co/read/1725110/pemilu-2024-semakin-dekat-berapa-jumlah-pemilih-muda-dan-perempuan

[4] A. F. B. de Holanda and C. H. W. Corrêa, “Websites as Spaces for Building the Identities of Political Parties,” 2021, pp. 55–78. doi: 10.4018/978-1-5225-8024-9.ch004.

[5] I. B. Šindleryová and M. Garaj, “The Potential of using Websites for Communication of Political Parties: the Case of Slovakia before the 2020 Elections,” *Slovak Journal of Political Sciences*, vol. 22, no. 2, pp. 209–242, 2022, doi: 10.34135/sjps.220203.

[6] V. Mochla and G. Tsourvakas, “Quality Dimensions of Political Parties’ Website Services that Satisfy Voters in the Political Marketing,” *Journal of Political Marketing*, pp. 1–13, 2020, doi: 10.1080/15377857.2020.1790470.

[7] M. Ashraf, F. S. Cheema, T. Saba, and A. Mateen, “Usability of Government Websites,” 2017. [Online]. Available: www.ijacsa.thesai.org

[8] H. B. S. Reddy, R. R. S. Reddy, R. Jonnalagadda, P. Singh, and A. Gogineni, “Usability Evaluation of an Unpopular Restaurant Recommender Web Application Zomato,” *Asian Journal of Research in Computer Science*, pp. 12–33, May 2022, doi: 10.9734/ajrcos/2022/v13i430319.

[9] A. F. B. de Holanda and C. H. W. Corrêa, “Websites as Spaces for Building the Identities of Political Parties,” 2021, pp. 55–78. doi: 10.4018/978-1-5225-8024-9.ch004.

[10] Satu Data Indonesia, “Data Profil Partai Politik Peserta Pemilu 2024.” Accessed: Jan. 13, 2025. [Online]. Available: https://katalog.data.go.id/kurasi_stages/data-profil-partai-politik-peserta-pemilu-20241

 ISSN:2302-8149
e-ISSN:2540-9719

[11] P. Norris and D. Jones, "Editorial : Virtual Democracy," *Harvard International Journal of Press/Politics*, vol. 3, no. 2, pp. 1–4, 1998, doi: 10.1177/1081180X98003002001.
[12] C. Özgür Yilmaz and C. Özgür Yilmaz Allan Hanbury, "Merging the Gap Between Automated and Human Centered Usability Testing DIPLOMARBEIT zur Erlangung des akademischen Grades Software Engineering & Internet Computing." [Online]. Available: www.tuwien.at
[13] S. Elling, L. Lentz, and M. De Jong, "Website evaluation questionnaire: Development of a research-based tool for evaluating informational websites," in *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, Springer Verlag, 2007, pp. 293–304. doi: 10.1007/978-3-540-74444-3_25.
[14] B. Ivy Belinda, A. Boniface Kayode, N. Solomon, and T. Aderonke Favour-Bethy, "ISSN : 2394-4714 Foundation of Computer Science FCS," 2021. [Online]. Available: www.caeaccess.org
[15] R. Abdulla, H. A. Faraj, K. O. Mohammed, and M. M. Younis, "Usability Evaluation of the Top 10 Universities in Iraq using Heuristic Methods," *Al-Mustansiriyah Journal of Science*, vol. 34, no. 2, pp. 50–59, Jun. 2023, doi: 10.23851/mjs.v34i2.1234.
[16] N. A. Ismail, F. I. Jamaluddin, A. H. Hamidan, A. F. Ali, S. E. Mohamed, and C. S. Said, "Usability Evaluation of Encyclopedia Websites," *International Journal of Innovative Computing*, vol. 11, no. 1, pp. 21–25, Apr. 2021, doi: 10.11113/ijic.v11n1.282.
[17] T. Ayub, K. Nazeer, and S. Saeed, "Understanding Web Usability Issues: A Case Study of Pakistani Political Parties," in *User-Centric Technology Design for Nonprofit and Civic Engagements*, S. Saeed, Ed., Cham: Springer International Publishing, 2014, pp. 187–194. doi: 10.1007/978-3-319-05963-1_11.
[18] V. A. F. Moersahit and A. G. Persada, "Analysis of Website Usability of Provincial Governments in Indonesia with the Heuristic Evaluation Method," *Journal of Information System Research (JOSH)*, vol. 3, no. 4, pp. 380–387, Jul. 2022, doi: 10.47065/josh.v3i4.1794.
[19] A. R. Hasnanursanti, B. T. Hanggara, and A. R. Perdanakusuma, "Analisis Usability Website Resmi Pemerintah Kota Surakarta Menggunakan Metode Heuristic Evaluation," 2022.
[20] P. Sajna-Kosobucka and R. Sajna-Kunowsky, "Information architecture on the websites of major American political parties: Qualitative-heuristic assessment and comparative analysis," *J Inf Sci*, 2023, doi: 10.1177/01655515231196392.
[21] N. E. Van Gelder, K. A. W. L. Van Rosmalen-Nooijens, S. A Ligthart, J. B. Prins, S. Oertelt-Prigione, and A. L. M. Lagro-Janssen, "SAFE: An eHealth intervention for women experiencing intimate partner violence - Study protocol for a randomized controlled trial, process evaluation and open feasibility study," *BMC Public Health*, vol. 20, no. 1, May 2020, doi: 10.1186/s12889-020-08743-0.
[22] H. O. Al-Sakran and M. A. Alsudairi, "Usability and Accessibility Assessment of Saudi Arabia Mobile E-Government Websites," *IEEE Access*, vol. 9, pp. 48254–48275, 2021, doi: 10.1109/ACCESS.2021.3068917.
[23] P. Youhasan, M. A. Henning, Y. Chen, and M. P. Lyndon, "Developing and Evaluating an Educational Web-Based Tool for Health Professions Education: the Flipped Classroom Navigator," *BMC Med Educ*, vol. 22, no. 1, Dec. 2022, doi: 10.1186/s12909-022-03647-6.
[24] R. Khajouei and F. Farahani, "A combination of Two Methods for Evaluating the Usability of a Hospital Information System," *BMC Med Inform Decis Mak*, vol. 20, no. 1, p. 84, 2020, doi: 10.1186/s12911-020-1083-6.
[25] R. S. Kumar, S. Srivatsa, E. Baker, M. Silberstein, and D. Selva, "Identifying and Leveraging Promising Design Heuristics for Multi-Objective Combinatorial Design Optimization," *Journal of Mechanical Design*, vol. 145, no. 12, Dec. 2023, doi: 10.1115/1.4063238.
[26] S. Elling, L. Lentz, M. de Jong, and H. van den Bergh, "Measuring the Quality of Governmental Websites in a Controlled Versus an Online Setting with the 'Website Evaluation Questionnaire,'" *Gov Inf Q*, vol. 29, no. 3, pp. 383–393, Jul. 2012, doi: 10.1016/j.giq.2011.11.004.
[27] X. Pei *et al.*, "Robustness of Machine Learning to Color, Size Change, Normalization, and Image Enhancement on Micrograph Datasets with Large Sample Differences," *Mater Des*, vol. 232, Aug. 2023, doi: 10.1016/j.matdes.2023.112086.

ISSN:2302-8149
e-ISSN:2540-9719

[28] R. Alroobaea and P. J. Mayhew, "How many Participants are Really enough for Usability Studies?," in *Proceedings of 2014 Science and Information Conference, SAI 2014*, Institute of Electrical and Electronics Engineers Inc., Feb. 2014, pp. 48–56. doi: 10.1109/SAI.2014.6918171.