Harmony haven: usability evaluation of matrimonial websites for cultural sensitivity in Bangladesh

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Article Info

ABSTRACT

In the digital age, matrimonial websites have become essential platforms for matchmaking, particularly in culturally diverse societies like Bangladesh. This study explores the usability and cultural sensitivity of five popular matrimonial websites—Biyeta, OrdhekDeen, SensibleMatch, Shaadi.com, and Bangladeshi Matrimony—tailored for Bangladeshi users. Using Nielsen's Heuristics, the research identifies key usability issues and cultural misalignments. Data were collected via a questionnaire with 105 respondents, focusing on usability and cultural relevance. The results revealed that OrdhekDeen was the most used platform, with 40% of users preferring it, followed by Bangladeshi Matrimony at 23.8%. Usability issues were categorized, with 46.7% of users reporting challenges in navigating websites and 44.8% finding design consistency lacking. However, error prevention was highly rated, with 54.3% stating they never mistakenly sent messages due to unclear prompts. The study concludes with recommendations for improving cultural alignment and usability to enhance user satisfaction.

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1. INTRODUCTION

The human-computer interaction (HCI) has evolved into a pivotal field in understanding and optimizing how humans interact with technology. Usability evaluation has emerged as a core component of HCI, ensuring that digital systems are intuitive, efficient, and aligned with user needs. In the context of online matrimonial websites, studies have emphasized both technical and socio-cultural dimensions of platform design. For instance, Sharma *et al*. [1] examined the balance between emotional and economic factors in matrimonial websites, while Abdallah and Jaleel [2] developed frameworks for assessing e-marketing website appeal. Research on matrimonial sites has grown in recent years, with Krishnan *et al*. [3] analyzing Indian platforms, and Bajnaid and Aljasir [4] highlighting the role of gender and cultural expectations in Islamic societies. Mishra and Basu [5] further demonstrated how cultural norms and family honor shape online self-presentation among Indian Muslim women. Seth [6] and Titzmann [7] explored how online matrimonial platforms have transformed arranged marriage practices in India, while Bajnaid *et al*. [8] examined Saudi users' online courtship behaviors.

Although cultural alignment is crucial, technical issues also play a role in shaping usability. Ding *et al*. [9] investigated user pairing in digital communication systems, and Zhang *et al*. [10] proposed advanced methods for evaluating image quality—both relevant for improving matrimonial platforms'

multimedia features. Similarly, Bonneau *et al.* [11] offered a framework for evaluating authentication schemes, which has implications for the security of personal data in matrimonial systems. Cross-cultural perspectives also enrich understanding of online interaction. Jackson and Wang [12] compared social networking use across China and the U.S., while Bonilla-Zorita *et al.* [13] conducted a systematic review of problematic online dating use. Hassouneh and Brengman [14] studied the influence of moderator visibility on online behavior, showing how governance affects trust. Meena *et al.* [15] extended usability evaluation into interactive surfaces, and Sharma *et al.* [16] focused specifically on safe spaces within Indian matrimonial websites. Beyond matrimonial contexts, broader usability and design perspectives provide useful insights. Carter *et al.* [17] applied design science to e-government systems, and Tanner [18] examined racialized experiences in digital dating. Dzatama *et al.* [19] evaluated usability in an online marriage registration system, while Corry *et al.* [20] demonstrated the application of user-centered design in web development. Alenljung *et al.* [21] explored user experience in social human-robot interaction, illustrating parallels between interpersonal and digital interactions. Recent advancements in design emphasize unsupervised discovery of website features [22], language accessibility in online systems [23], and specialized usability evaluations such as wellness communication in medical websites [24]. Herrada-Lores *et al.* [25] highlighted the role of dialogic potential in corporate website sustainability communication, underscoring the need for inclusivity, transparency, and user trust.

Building on these works, the present study evaluates the usability and cultural alignment of five Bangladeshi matrimonial websites: Biyeta, OrdhekDeen, SensibleMatch, Shaadi.com, and Bangladeshi Matrimony. By integrating usability heuristics with cultural sensitivity, this research addresses an underexplored area in HCI, offering practical recommendations for designers and developers seeking to enhance both accessibility and user satisfaction.

2.　METHOD
2.1.　Research design
This study employs a quantitative research design aimed at evaluating the usability and cultural sensitivity of five prominent matrimonial websites—Biyeta, OrdhekDeen, SensibleMatch, Shaadi.com, and Bangladeshi Matrimony. The primary focus is on gathering user feedback to assess the effectiveness of each website in meeting usability standards and accommodating cultural nuances. To achieve this, the research applies Nielsen's usability heuristics as a framework for data collection and evaluation, ensuring a systematic approach to identifying the strengths and weaknesses of these platforms.

2.2.　Population and sample
The target population for this study includes individuals who have used at least one of the selected matrimonial websites. The sample consists of 105 participants, who were recruited through various online platforms to ensure diversity in demographic representation. Participants were drawn from social media groups, matrimonial forums, and personal networks, ensuring a mix of users with varying levels of experience across the five websites. The sample was designed to be representative of the typical user base of matrimonial services in Bangladesh.

2.3.　Data collection methods
Data collection was conducted through an online survey using Google Forms, consisting of 37 questions divided into two sections: demographic information and heuristic evaluation. The first section collected data on respondents' age, gender, location, marital status, and primary website used, while the second part focused on usability evaluation based on Nielsen's Heuristics. This section included 30 questions assessing key aspects such as visibility of system status, user control, consistency, error prevention, and aesthetic design. The survey was open for two months, during which 105 valid responses were collected.

2.4.　Data analysis techniques
The collected data were analyzed using a combination of descriptive and heuristic analysis. Demographic data was summarized to understand the user profile, while responses to the heuristic evaluation questions were analyzed to identify patterns in user satisfaction and usability issues across the five websites. Responses were reviewed for completeness, and the data was analyzed in aggregate form to maintain confidentiality. The results provided insights into usability strengths and weaknesses, guiding recommendations for improving the cultural alignment and functionality of these platforms. The selection of matrimonial websites for this study was a deliberate process designed to ensure a comprehensive analysis of usability and cultural.

Sensitivity within the Bangladeshi context. The five platforms chosen—Biyeta, OrdhekDeen, SensibleMatch, Shaadi.com, and Bangladeshi Matrimony—were selected based on their popularity, user base

diversity, and relevance to the Bangladeshi matrimonial market. Biyeta was included due to its local relevance and substantial user base within Bangladesh. As a homegrown platform, Biyeta is tailored specifically to Bangladeshi cultural norms and values, providing valuable insights into local user preferences and experiences. OrdhekDeen was selected for its niche focus on religious compatibility and Islamic values. This platform's integration of religious guidelines into its services offers a unique perspective on how cultural and religious considerations influence user experience.

Sensible Match represents a hybrid approach by combining traditional matchmaking methods with modern technology. Its active user engagement and customer support were key factors in its selection, providing insights into how these elements affect user satisfaction and usability. Shaadi.com, with its international reach and significant user base in Bangladesh, was included for its global perspective. The platform's inclusion allows for a comparative analysis of how well an internationally recognized site meets regional and cultural needs. Bangladeshi Matrimony, part of the BharatMatrimony network, was chosen for its focus on Bengali-speaking users. Its emphasis on Bengali traditions and customs makes it highly relevant for examining how well matrimonial websites can incorporate cultural nuances into their design and usability. The criteria for selection included popularity and user base, cultural relevance, usability features, and accessibility and engagement strategies. By including both locally developed and internationally recognized platforms, the study captures a broad spectrum of usability issues and cultural sensitivities. This diverse selection aims to provide a holistic understanding of how cultural factors influence user experience in the context of matrimonial services in Bangladesh. The insights gained from this research will contribute to practical recommendations for improving the usability and cultural sensitivity of matrimonial websites, ultimately enhancing the user experience for Bangladeshi users.

The Figure 1 illustrates the process of evaluating the usability of matrimonial websites, specifically focusing on cultural sensitivity in Bangladesh. The evaluation process is divided into two parallel approaches: heuristic evaluation and user study through questionnaires. On one side, experts conduct a heuristic evaluation, assessing the websites based on predefined usability principles. This data is then analyzed to uncover trends and areas where the websites may lack cultural sensitivity or usability features. On the other side, a user study is conducted where real users provide feedback through questionnaires. This collects insights directly from the users on how culturally aligned and user-friendly they find the websites. The collected responses are also analyzed. Finally, the process converges at the bottom, where a comparative analysis is performed to compare the findings from both expert evaluations and user feedback, providing a comprehensive view of the websites' usability in the context of cultural sensitivity.
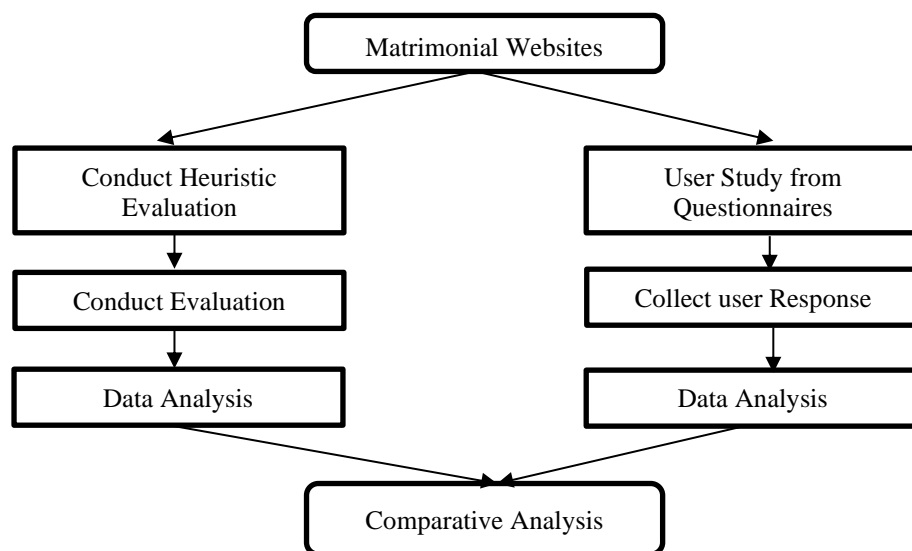

Figure 1. User's evaluation process across matrimonial websites

3. RESULTS AND DISCUSSION

Table 1 demonstrates the summary of responses from users regarding system usability on various platforms that OrdhekDeen is the most frequently used matrimonial website among the respondents, followed by Bangladeshi Matrimony.

Table 1. Usability ratings based on Nielsen's heuristics

Website	Percentage of users (%)
Biyeta	12.4
OrdhekDeen	40
Bangladeshi Matrimony	23.8
Shaadi.com	12.4
SensibleMatch	8.6

The results of the usability evaluation provide several key insights into the performance of matrimonial websites. Table 2 summarizes the usability feedback collected from users, organized by different heuristic categories (see in Appendix). Overall, users were moderately satisfied with the visibility of loading indicators and error messages, though there is room for improvement in making these elements clearer. The terminology used on these platforms, along with the navigation, was generally familiar and intuitive, aligning well with user expectations. However, further refinements could enhance user comfort and ease of interaction. Users also reported feeling in control of their interactions, finding the websites responsive and relatively easy to navigate. This suggests a positive experience in terms of user freedom, though the consistency of design elements, such as buttons and navigation bars, could be improved. Some users noticed variations in menu layouts, which could affect confidence and ease of use. In terms of error prevention, most users rarely encountered accidental actions or miscommunications, indicating effective safeguards. However, the prompts and confirmations could still be more sufficient to prevent unintended actions. Recognition of features was generally straightforward, although some users occasionally forgot the location of certain functions, suggesting a need for better visibility and accessibility of features. Flexibility and efficiency in use were rated moderately, with limited customizable shortcuts available, which points to the potential for more adaptable features to improve navigation. While the design leaned toward a minimalist approach, some users found it somewhat cluttered, indicating that a cleaner, more streamlined design could enhance visual appeal and satisfaction. Additionally, the help and documentation resources were seen as moderately useful, but improvements in clarity and comprehensiveness could provide better support for users encountering issues. Addressing these areas for improvement can significantly boost the usability and user experience of matrimonial websites.

The usability evaluation data for the selected matrimonial websites reveals varying degrees of adherence to established usability principles. Table 3 compares usability performance across multiple matrimonial websites based on specific heuristic components. For the "Visibility of System Status" criterion, Biyeta and SensibleMatch demonstrate lower percentages of issues, indicating relatively better performance in keeping users informed about system activities. Notably, SensibleMatch shows a lower total worst-case percentage, reflecting fewer visibility issues compared to the other platforms. In contrast, Shaadi.com and Bangladeshi Matrimony have slightly higher percentages, particularly for Q1 and Q2, suggesting areas for improvement in real-time feedback mechanisms. Regarding "Match between System and the Real World," most platforms, including Biyeta, OrdhekDeen, and Shaadi.com, reported minimal issues. However, the overall worst-case percentage for this criterion remains low, highlighting that these websites effectively align their interfaces with users' expectations and real-world conventions. On the other hand, "User Control and Freedom" shows marginal discrepancies across the platforms, with minimal issues reported, but still, room for enhancement exists. The data for "Flexibility and Efficiency of Use" and "Aesthetic and Minimalist Design" reveals higher worst-case percentages, particularly for platforms like Bangladeshi Matrimony and Shaadi.com. This suggests that improvements in streamlining user interactions and adopting more minimalist design principles could benefit these platforms. Finally, the "Help and Documentation" category shows a relatively higher worst-case percentage across all platforms, indicating a need for more comprehensive and accessible help resources. Overall, while the evaluation highlights areas of strength, it also underscores the need for targeted improvements to enhance usability across these matrimonial websites.

The usability evaluation of matrimonial websites for cultural sensitivity in Bangladesh, based on Nielsen's Heuristics, reveals varying levels of compliance with key usability principles. The Figure 2 appears to display the "Total Worst Points" for different heuristic categories, represented by H1 through H10. "Total Worst Point" highlights the most problematic aspects of the websites, with "Error Prevention" (H5) standing out significantly. With a peak score of 23 points, this indicates a critical challenge in preventing user errors, such as form input mistakes or miscommunication of system feedback. Error prevention is crucial in matrimonial websites, where users may feel sensitive about sharing personal information. Failing in this area could severely hinder the user experience and trust in the platform. On the other hand, heuristics like "Recognition Rather Than Recall" (H6), "Consistency and Standards" (H4), and "User Control and Freedom" (H3) received lower worst-point scores, indicating fewer usability issues. These findings suggest that the websites generally follow standard design practices and offer users some degree of control, reducing

cognitive load. However, the moderately high scores for "Help and Documentation" (H10) and "Help Users Recognize, Diagnose, and Recover from Errors" (H9) suggest that users might struggle to find clear instructions or recovery options when problems occur. The overall trend implies that while the websites exhibit adequate consistency and simplicity, critical areas like error prevention and user support need significant improvement. To create a culturally sensitive and user-friendly platform, developers should focus on enhancing error prevention mechanisms and providing clearer help features, ensuring that users feel confident navigating the site without frequent errors or confusion.The data from the heuristic evaluation of matrimonial websites for cultural sensitivity in Bangladesh highlights varying degrees of usability challenges across different platforms. Biyeta shows significant issues in two key areas: "Visibility of System Status" (H1) and "Error Prevention" (H9). These results suggest that users often struggle to receive timely feedback from the system, and the platform lacks adequate mechanisms to help users avoid or recover from errors.

Table 3. Comparative usability analysis of matrimonial websites by heuristic components

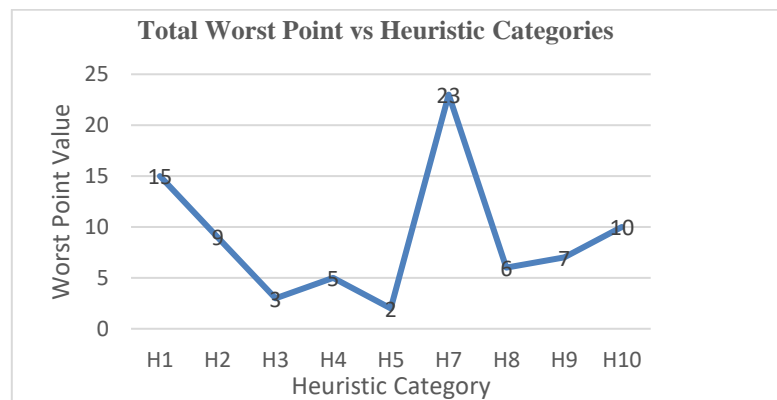| Usability components (%)	Question (%)	Biyeta (%)	Ordhek Deen (%)	Bangladeshi Matrimony (%)	Shaadi.com (%)	Sensible match (%)	Worst case (%)	Total worst case (%)
Visibility of system	Q1	1.42	4.56	2.71	1.42	1.29	11.4	14.3
status	Q2	0.36	1.16	0.69	0.36	0.33	2.9	
Match between	Q4	0	0	0	0	0	0	8.6
system and the real	Q5	0	0	0	0	0	0	
world	Q6	1.06	3.44	2.05	1.06	0.99	8.6	
User control and	Q7	0.12	0.4	0.24	0.12	0.12	1	2.9
freedom	Q8	0.24	0.76	0.45	0.24	0.21	1.9	
Consistency and	Q10	0	0	0	0	0	0	4.8
standards	Q11	0.59	1.92	1.14	0.59	0.59	4.8	
Error prevention	Q13	0.24	0.76	0.45	0.24	0.21	1.9	1.9
Flexibility and	Q19	0	0	0	0	0	0	22
efficiency of use	Q20	0.12	0.4	0.24	0.12	0.12	1	
	Q21	2.6	8.4	5	2.6	2.4	21	
Aesthetic and	Q22	0.12	0.4	0.24	0.12	0.12	1	5.8
minimalist design	Q23	0.47	1.52	0.87	0.47	0.47	3.8	
	Q24	0.12	0.4	0.24	0.12	0.12	1	
Help users recognize,	Q25	0.12	0.4	0.24	0.12	0.12	1	6.7
diagnose, and recover	Q26	0.47	1.52	0.87	0.47	0.47	3.8	
from errors	Q27	0.24	0.76	0.45	0.24	0.21	1.9	
Help and	Q28	0.24	0.76	0.45	0.24	0.21	1.9	9.6
documentation	Q29	0.36	1.16	0.69	0.36	0.33	2.9	
	Q30	0.59	1.92	1.14	0.59	0.59	4.8	

Figure 2. Total worst points distribution across heuristic categories

This could greatly affect user confidence, especially in a culturally sensitive context like matrimonial websites, where users are entering personal information and expect a smooth, error-free experience. Figure 3 shows the comparison of responses to specific questions across multiple matrimonial websites. On the other hand, OrdhekDeen and Shaadi.com reveal a different set of challenges. OrdhekDeen has the highest score in "Aesthetic and Minimalist Design" (H8), suggesting that while its interface might be clean, the simplicity may come at the expense of essential functionality or clarity. It also struggles with "Match between System and Real World" (H2), indicating that users may find the platform unintuitive or

misaligned with their cultural expectations. Shaadi.com, while not facing extreme issues, has a moderate score in both "Aesthetic Design" and "Match between System and Real World," which could indicate a need for more culturally resonant design choices or a better flow of interactions. Bangladeshi Matrimony and Sensible Match show relatively balanced results, though Bangladeshi Matrimony experiences notable problems in "Error Prevention" (H9). This indicates a need for enhanced feedback and assistance to prevent user mistakes, which could deter users from completing their tasks on the platform. Sensible Match appears to have the most balanced usability profile, with relatively fewer severe issues across all categories, making it a more stable option. However, minor improvements could still be made in areas such as "User Control and Freedom" (H3) and "Consistency and Standards" (H4). In summary, while each website has its unique strengths and weaknesses, the evaluation shows that Sensible Match offers the most consistent usability experience, whereas platforms like Biyeta and OrdhekDeen need significant improvements in system feedback, error prevention, and design alignment with user expectations. This comparative analysis underscores the importance of addressing usability issues, particularly in a culturally sensitive domain like matrimonial websites, where user experience directly impacts trust and satisfaction. This study offers valuable insights into the usability of Bangladeshi matrimonial websites but is limited in scope and generalizability. It focuses on a few selected platforms—Biyeta, Shaadi.com, Bangladeshi Matrimony, OrdhekDeen, and SensibleMatch—which may not represent all matchmaking services. The user sample may not reflect the broader demographic diversity, and cultural nuances might not be fully captured. Methodological constraints, limited resources, and external factors like internet access and digital literacy also affect the findings. Nonetheless, the research contributes to understanding usability and cultural considerations in this context.
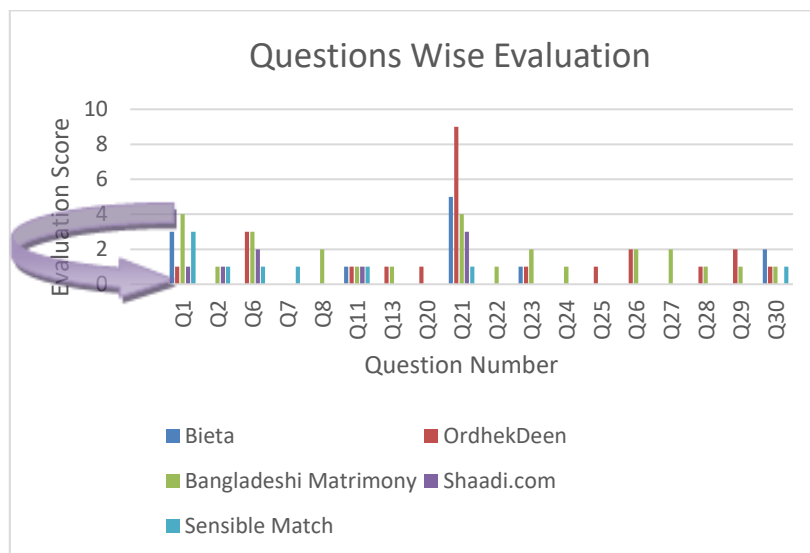

Figure 3. Question-wise evaluation of matrimonial websites

4. CONCLUSION

The heuristic evaluation of matrimonial websites, focused on cultural sensitivity within Bangladesh, revealed that while users were moderately satisfied with their usability, there are areas that require significant improvements. The study identified the need for enhanced clarity in error messages and progress indicators, improved consistency in navigation and terminology, and streamlined design elements to reduce visual clutter. Additionally, ensuring a uniform layout and providing better prompts for error prevention are crucial for creating a more intuitive user experience. Customizable shortcuts and robust help documentation also need attention to enhance user support. This research highlights the importance of aligning matrimonial websites with cultural expectations to improve user satisfaction and usability. The analysis demonstrated that platforms like SensibleMatch showed relatively fewer usability issues, whereas others like Biyeta and OrdhekDeen exhibited challenges, particularly in system feedback and error prevention. By integrating cultural sensitivity more effectively into these platforms, developers can offer a more engaging and user-friendly experience for Bangladeshi users.

AUTHOR CONTRIBUTIONS STATEMENT
This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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Dewan Mamun Raza		✓						✓	✓	✓		✓		
Noman Al Badhon	✓		✓	✓						✓			✓	

C : **C**onceptualization	I : **I**nvestigation	Vi : **Vi**sualization
M : **M**ethodology	R : **R**esources	Su : **Su**pervision
So : **So**ftware	D : **D**ata Curation	P : **P**roject administration
Va : **Va**lidation	O : Writing - **O**riginal Draft	Fu : **Fu**nding acquisition
Fo : **Fo**rmal analysis	E : Writing - Review & **E**diting	

CONFLICT OF INTEREST STATEMENT
The authors declare that they have no competing interests.

DATA AVAILABILITY
The data that support the findings of this study are openly available in "https://docs.google.com/spreadsheets/d/1uuggx700SAjT5DlvLZvcCogRHJDYDiJJ/edit?usp=sharing&ouid =102700393601393371918&rtpof=true&sd=true".

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APPENDIX

Table 2. Usability evaluation results based on heuristic categories

Heuristic category	Question	Highest response	Percentage (%)
Visibility of system status	How satisfied are you with the visibility of loading progress indicators?	Moderately satisfied	32.4
	How clear are the error messages you encounter while using the website?	Somewhat clear	41.9
	How easily can you track your progress on the website when performing tasks like profile creation?	Somewhat easy to track	45.7
Match between system and the real world	Do you find the terminology used on the website to be familiar and easy to understand?	Somewhat familiar and clear	42.9
	How well does the website's navigation reflect real-world expectations of finding and exploring profiles?	Somewhat familiar and clear	46.7
	Are the actions and options on the website intuitive and align well with what you would expect in a matrimonial service?	Mostly intuitive	37.1
User control and freedom	How easy is it to navigate between different sections of the website to search for profiles?	Somewhat easy to navigate	37.1
	Do you feel in control of your interactions on the website, with the ability to perform actions like editing your profile?	Mostly in control	42.9
	How responsive is the website to your actions and commands, allowing you to freely explore without delays?	Somewhat responsive	41
Consistency and standards	How consistent are the buttons across different sections of the website?	Moderately consistent	51.4
	Do you notice any variations in the layout of menus while navigating through different pages?	Few variations	37.1
	Are the navigation bars positioned consistently throughout the website?	Navigation bars mostly consistent	44.8
Error prevention	How often do you encounter accidental actions, such as deleting a profile, due to unclear prompts or confirmations?	Never	39
	Have you ever mistakenly sent a message to the wrong user on the website due to lack of clear prompts?	Never	54.3
	Do you find the prompts and confirmations on the website sufficient in preventing unintended actions?	Somewhat sufficient	46.7

Table 2. Usability evaluation results based on heuristic categories (*continued*)

Heuristic category	Question	Highest response	Percentage (%)
Recognition rather than recall	Can you easily find and recognize different features on the website?	Never struggle	46.7
	Do you frequently encounter difficulties in remembering where certain functions are located on the website?	Sometimes	42.9
	Do you find it challenging to navigate through the website due to difficulties in recognizing features?	Slightly challenging	40
Flexibility and efficiency of use	How adaptable do you find the website to different user preferences?	Moderately adaptable or efficient	46.7
	Do you consider the website to be efficient in terms of usability?	Somewhat efficient	42.9
	Are there customizable shortcuts available on the website that enhance your navigation experience?	Limited customizable shortcuts	35.2
Aesthetic and minimalist design	How cluttered and distracting do you find the overall design of the website?	Somewhat cluttered and distracting	36.2
	Does the website's design prioritize a minimalist approach by removing unnecessary clutter and distractions?	Moderately minimalist	44.8
	Do you find the overall aesthetic of the website to be visually pleasing?	Somewhat appealing	41
Help users recognize, diagnose, and recover from errors	When encountering errors on the website, are you provided with any form of guidance to resolve the problem?	Somewhat clear guidance provided	44.8
	How helpful do you find the error messages provided when encountering issues on the website?	Moderately helpful	35.2
	Do you feel confident to diagnose and recover from errors encountered while using the website?	Moderately confident	29.5
Help and documentation	Is there adequate documentation available on the website to assist you in understanding how to use different features?	Sufficient documentation	37.1
	Have you found the existing documentation on the website to be useful in troubleshooting problems?	Moderately useful	37.1
	Do you feel the available help resources adequately address your questions when seeking assistance on the website?	Mostly addressed	31.4

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