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Identifying the Aesthetic Criteria of Academic Library Websites Using a Delphi Panel

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Abstract

Purpose: In the digital era, enhancing the visibility and usability of websites is essential, especially for university library websites that serve as critical knowledge-sharing platforms. This study identifies the aesthetic criteria for Iranian academic library websites.

Methodology: A Delphi panel method with snowball sampling was employed, involving 21 experts in the first round and 15 in the second. SPSS software was used for data analysis, with Cronbach's alpha calculated to assess internal consistency.

Findings: A total of 68 aesthetic criteria were identified and grouped into five categories: digital image aesthetics, technical design elements, visual complexity, user-centric aesthetics, and content quality. A checklist with 37 scales was developed, achieving strong reliability (Cronbach's alpha > 0.9). The study also identified 17 highly significant components prioritized by Delphi experts, such as up-to-date content, ease of navigation, and responsive design.

Conclusion: The findings offer a robust framework for improving the aesthetic quality and usability of academic library websites. While designed for Iranian websites, the results are adaptable to other cultural contexts. The study contributes significantly to the field by providing a comprehensive tool for website evaluation and emphasizing the need for culturally nuanced designs.

Value: This research is the first in Iran to apply a Delphi approach for identifying aesthetic website criteria, contributing significantly to the global understanding of web aesthetics in academic contexts.

Keywords: *Aesthetic Perception, Human-Computer Interaction, University Libraries, Visual Complexity, Website Design*

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Extended Abstract

Introduction: The aesthetic design of websites plays a crucial role in enhancing user engagement and interaction. In 1994, Nielsen proposed ten usability principles, including "beauty and minimalism," which remain relevant today. Despite ongoing updates to usability standards, the principle of aesthetics has persisted as a core factor in web design. Academic library websites, as vital knowledge-sharing platforms, must prioritize aesthetic considerations to improve visibility and user satisfaction in the digital age. This study explores the aesthetic criteria for Iranian university library websites to address this necessity.

Purpose: The research aims to identify aesthetic factors that enhance the usability and appeal of Iranian academic library websites, providing insights applicable to other cultural contexts.

Methodology: A Delphi-type qualitative method was applied using snowball sampling to gather expert opinions. Twenty-one experts participated in the first round, while 15 contributed to the second round. The analysis showed minimal changes in Kendall's agreement coefficient between the two rounds (0.248 to 0.250), supporting the robustness of the findings. SPSS software was used for statistical analysis. The panel included experts in computer science, computer graphics, and information science to ensure a multidisciplinary approach.

Findings: The study identified 68 aesthetic criteria categorized into five main areas:

1. Digital Image Aesthetics – Focus on the relevance and quality of images.
2. Technical Design Tips – Emphasizing responsive and adaptive designs.
3. Visual Complexity – Balancing graphics and text for clarity.
4. User-Centric Aesthetics – Prioritizing user preferences and intuitive navigation.
5. Content Quality – Ensuring accurate, organized, and engaging content.

A checklist with 37 scales was developed, achieving strong reliability (Cronbach's alpha > 0.9). Additionally, 17 components were deemed highly significant, with the top criteria including:

- Up-to-date content (4.93/5)
- General search functionality (4.87/5)
- Responsive design (4.80/5)

Table 1. Cronbach's alpha coefficient calculation of 68 criteria for aesthetics of academic library websites

Cronbach's alpha	Numbers of Experts
0.973	21
0.968	15



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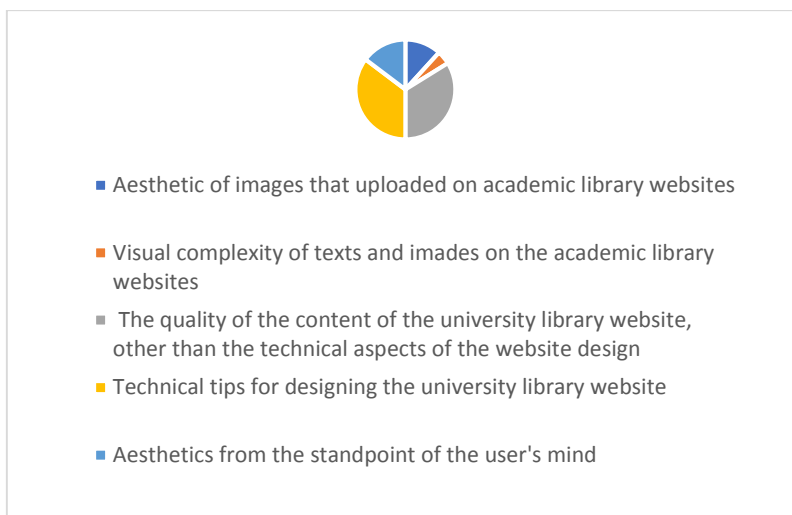


Figure 1. Identifying the five categories for aesthetics of academic library websites

Table 2. Identifying 17 best criteria for aesthetics of university library websites by 2 Delphi rounds

Priority order of the importance of the "very high."	criteria	Average significance on the final round of Delphi (Total = 5)
1	Up-to-date website content	4.93
2	Having a general search box in the content of the main page of the website	4.87
3	Responsiveness of website content to several different desktop and mobile devices	4.80
4	Having user interaction capabilities such as online chat, and asking me	4.73
4	Absence of wrong information in the content of the website (such as the absence of intentionally or unintentionally false information)	4.73
5	Matching the photos included in the website with the context and context of the website	4.67
5	Targeted design of the website by the website manager	4.67
5	Maintaining balance in the ratio of graphics to text in the content of the website	4.67
5	Ease of navigation and easy content navigation from the perspective of the website user	4.67
6	Interesting content of the website from the perspective of the website user	4.60
7	Arousing the feeling of simplicity and non-complexity in the web user towards the website	4.53
7	Adherence to brevity in the content of the website	4.53
8	Compliance with the organization of website content, such as compliance with hierarchy or compliance with order and sequence	4.47
8	Future-perspective-based website content	4.47
8	Not using content that has unnecessary cognitive processing load	4.47
9	Using the golden ratio on the website (both texts and images)	4.27
10	Non-complexity on the website content	4.20



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Conclusion: The study presents a comprehensive framework for improving the aesthetic quality of academic library websites. Administrators can use the identified criteria and checklist to enhance visibility, usability, and user satisfaction. While tailored to Iranian contexts, the framework is adaptable to international settings.

Value: This research is the first in Iran to apply a Delphi approach for identifying aesthetic website criteria, contributing significantly to the global understanding of web aesthetics in academic contexts. Future studies could explore the impact of emotional intelligence on aesthetic perception or incorporate cultural and social semiotics into website evaluations. Additionally, developing an international standard for library website aesthetics is highly recommended.

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