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E-BOOK OF EXTENDED ABSTRACTS

EVALUATING THE SATISFACTION OF LIBRARY WEBSITE USAGE USING FUZZY ANALYTIC NETWORK PROCESS (FANP)

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ABSTRACT

The quality of a library website strongly influences undergraduate students' satisfaction, yet limited studies have applied advanced methods such as FANP to evaluate this experience. This study objectives are to identify factors influencing satisfaction, to apply FANP to assess satisfaction levels, and to rank the influencing factors toward website quality. Three main criteria which are information quality, system quality, and service quality, and twelve sub-criteria were examined. Results show that information quality ranks first, followed by system quality and service quality. Among sub-criteria, usability ranks highest, followed by responsiveness, privacy, and soundness. These findings provide clearer insights to improve library website design and performance, while also supporting the Sustainable Development Goals (SDGs) by enhancing Quality Education (SDG 4), driving Innovation and Infrastructure (SDG 9), and promoting Reduced Inequalities (SDG 10) through inclusive and equitable access to digital knowledge.

Keywords: *FANP, Library Website, User Satisfaction*

INTRODUCTION

The rapid growth of digital technologies has transformed how academic libraries deliver information and services to their users. Library websites are now central gateways that provide access to digital collections, research tools, and learning resources (Kumar, 2023). The quality of these websites strongly influences user satisfaction, particularly among undergraduate students who rely heavily on online platforms for academic purposes. Despite their importance, limited studies have applied advanced decision-making approaches such as the Fuzzy Analytic Network Process (FANP) to systematically evaluate the factors that shape user satisfaction with library websites. The method, i.e., the FANP enables comprehensive analysis by assigning appropriate weights to all relevant criteria, ensuring that every aspect is considered when evaluating alternatives (Lakhouit et al., 2025).

This study addresses this gap by focusing on the MyKM portal, an online library platform provided by Perpustakaan Tun Abdul Razak (PTAR) of Universiti Teknologi MARA (UiTM). MyKM is an accessible library website of e-learning resource and library's innovative new layout to revolutionize user experience with a personalised system. The main objectives are to identify the key factors influencing satisfaction, apply FANP to assess the relative importance of these factors, and rank them in relation to website quality. There are four steps involved in evaluating the satisfaction criteria which are shown in Figure 1.



Figure 1: Four steps of applying FANP to measure satisfaction level to library website

The first step is to identify criteria and sub-criteria. There are three main criteria: quality, system quality, and service quality along with twelve sub-criteria were selected as shown in Figure 2. These criteria were extracted from past studies on Web 2.0 applications satisfaction study by Chua and Goh (2010). The second

step involved conducting a survey among the targeted respondents. The study focused on undergraduate students from UiTM Cawangan Negeri Sembilan, Kampus Seremban to obtain authentic user perspectives. Data collection was carried out using a Google Form questionnaire, which enabled efficient and accessible responses from the participants. The next step involved the application of the Fuzzy Analytic Network Process (FANP), with the calculation procedure adapted from Tarmudi et al. (2021). The final phase of the study focused on analysis and ranking, where the satisfaction factors were prioritised based on their output values where the highest value indicating the most significant factor, and the lowest value representing the least influential factor.

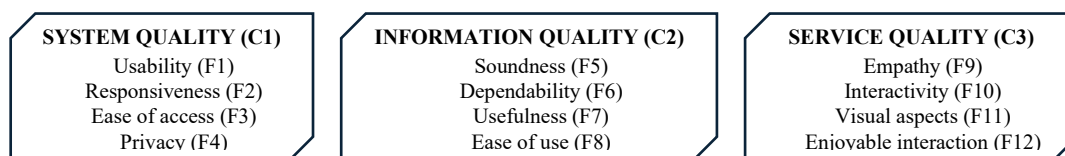


Figure 2: The criteria and sub-criteria of the MyKM satisfaction level among undergraduates.

RESULTS AND DISCUSSION

The results show that Information Quality (C2) ranks first, followed by System Quality (C1) and Service Quality (C3), indicating that MyKM is highly dependent on the quality of its information. For the sub-criteria, Usability (F1) is ranked highest, reflecting ease and speed of use, followed by Responsiveness (F2), which relates to obtaining and downloading information. Privacy (F4) comes next, highlighting user trust in data protection, while Soundness (F5) ensures accuracy and consistency of resources.

These findings demonstrate that MyKM's greatest strength lies in the quality and usability of its information, which positions it as a reliable and effective digital library platform for UiTM students. MyKM shows strong performance in information quality and usability, yet there are still opportunities for enhancement across other sub-criteria. By strengthening these areas, MyKM can evolve into a more interactive, user-friendly, and engaging digital library platform.

CONCLUSION

This study evaluated user satisfaction with the MyKM library website provided by PTAR UiTM, focusing on undergraduate students from UiTM Cawangan Negeri Sembilan, Kampus Seremban. The FANP was applied and as results, the Information Quality is the most influential criterion, followed by System Quality and Service Quality. At the sub-criteria level, Usability ranked highest, followed by Responsiveness, Privacy, and Soundness, demonstrating that MyKM's main strength lies in delivering high-quality and usable information. By strengthening digital learning access, it advances Quality Education (SDG 4); through smarter and more innovative portal design, it supports Industry, Innovation, and Infrastructure (SDG 9); and by ensuring equitable access to knowledge, it promotes Reduced Inequalities (SDG 10). Future research can expand the scope of respondents to include students from other UiTM campuses to obtain a broader and more representative perspective of user satisfaction. Such an expansion will provide deeper insights for continuous improvement, ensuring MyKM evolves into a more user-friendly, interactive, and engaging digital library platform.

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