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Analysis of User Satisfaction with the Academic Information System (SIMAK) Using the End-User Computing Satisfaction (EUCS) Method: A Case Study at Universitas Muhammadiyah Palembang

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Abstract

The Academic Information System (SIMAK) was designed to manage academic data and schedules to facilitate user access and convenience in campus academic activities. Since its implementation at Universitas Muhammadiyah Palembang (UMP) in 2016, SIMAK has supported key academic functions such as course registration (KRS), grade viewing (KHS), and other academic processes. However, a formal evaluation of end-user satisfaction with SIMAK has not yet been conducted. This study aims to determine the level of user satisfaction and identify the factors influencing student perceptions of SIMAK's performance. The research employs a quantitative approach based on the End-User Computing Satisfaction (EUCS) model. The population consists of 8,796 active students at UMP, from which 383 respondents were selected using the Slovin formula. Data were collected through an online questionnaire distributed via Google Forms and analyzed using SPSS version 25, including validity, reliability, and hypothesis testing. The results show a positive and significant simultaneous effect of the variables content, format, and timeliness on user satisfaction, with Fcount (287.179) > Ftable (2.2378) and a significance value of 0.000 < 0.1.

Keywords

EUCS, User Satisfaction, SIMAK, SPSS

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Introduction

The advancement of information and communication technology (ICT) has profoundly transformed the management of academic and administrative processes within higher education institutions. Modern universities increasingly depend on integrated information systems to enhance the efficiency, accuracy, and accessibility of academic data. These systems are designed to support a wide range of operations—from course registration and scheduling to grade reporting and academic record management—while promoting transparency and reducing administrative workload. As educational environments become more digitized, evaluating the performance and usability of such systems becomes essential to ensure they effectively serve the needs of students, lecturers, and administrators.

One of the key technological implementations at Universitas Muhammadiyah Palembang (UMP) is the Academic Information System (SIMAK), developed to manage academic data and schedules and to facilitate user convenience in accessing academic services. Since its introduction in 2016, SIMAK has supported essential academic functions including course registration (Kartu Rencana Studi, KRS), grade viewing (Kartu Hasil Studi, KHS), and the management of academic reports and schedules. The system plays a central role in enabling students and lecturers to interact with academic information efficiently and paperlessly. Despite its important role, however, there has been no formal, empirical evaluation of user satisfaction since the system's deployment, leaving a gap in understanding its actual effectiveness and acceptance among end users.

In higher education contexts, user satisfaction is a critical indicator of information system success, as it reflects the degree to which system functionality aligns with user expectations and institutional goals. Assessing satisfaction levels provides valuable insights into system usability, data reliability, content relevance, and response time. Without such evaluation, institutions may face challenges in identifying weaknesses that could hinder system adoption and long-term sustainability. Therefore, a structured assessment model is needed to measure how effectively SIMAK meets user expectations and to identify the factors influencing student perceptions of system performance.

To address this need, the present study employs the End-User Computing Satisfaction (EUCS) model as the theoretical foundation for analysis. The EUCS model, widely applied in information systems research, evaluates user satisfaction based on key dimensions such as content, accuracy, format, timeliness, and ease of use. These dimensions collectively measure users' subjective evaluations of the quality of system outputs and the efficiency of information delivery. By applying this model, researchers can gain a multidimensional understanding of user satisfaction and determine which aspects of SIMAK contribute most strongly to students' positive or negative experiences.

The study utilizes a quantitative research approach involving a population of 8,796 active students at Universitas Muhammadiyah Palembang. Using the Slovin formula, a representative sample of 383 respondents was selected to ensure statistical reliability. Data were gathered through an online questionnaire distributed via Google Forms, allowing for efficient collection of user perceptions and feedback. The data analysis process employed SPSS version 25, incorporating tests of validity, reliability, and multiple linear regression to evaluate the relationships between EUCS variables and overall user satisfaction. This methodological framework ensures that the findings are both empirically robust and generalizable to the broader student population.

Preliminary findings reveal a positive and significant simultaneous effect of the variables content, format, and timeliness on user satisfaction, with Fcount (287.179) > Ftable (2.2378) and a significance value of 0.000 < 0.1. These results suggest that SIMAK's ability to deliver accurate, well-structured, and timely information significantly contributes to user satisfaction among UMP students. The findings not only validate the relevance of the EUCS model in assessing academic information systems but also provide actionable insights for improving system performance, particularly in areas such as content presentation and service responsiveness. Ultimately, this study aims to contribute to the continuous enhancement of SIMAK as a reliable digital platform that supports academic excellence and administrative efficiency at Universitas Muhammadiyah Palembang.

Methodology

Research Framework

The research framework outlines the stages undertaken to achieve the research objectives, as depicted in Figure 1.

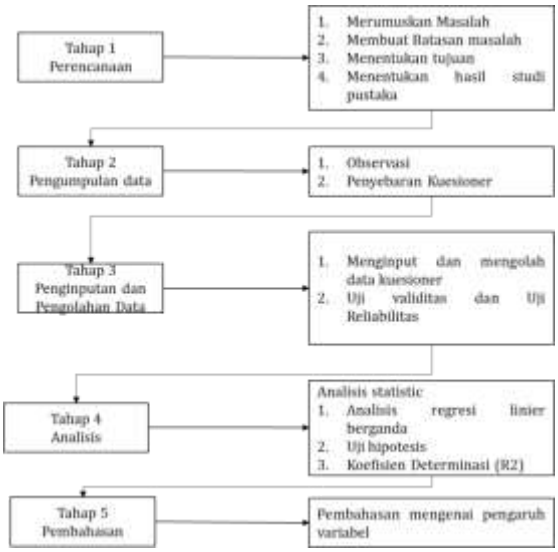

Figure 1. Research Flow

Identification of problems and objectives. Development of the EUCS-based research model. Data collection via online questionnaires. Validity and reliability testing. Hypothesis testing and interpretation of results.

Population and Sample

The research population consists of 8,796 active undergraduate students at Universitas Muhammadiyah Palembang, as recorded in the national Higher Education Database (Pangkalan Data Pendidikan Tinggi). The sample size was determined using the Slovin formula:

$$n = \frac{8796}{1 + 8796(0.05)^2} = 383$$

A total of 383 respondents were included, covering seven faculties and 23 undergraduate programs where SIMAK is actively used.

Table 1. Faculty and Study Program Distribution

Faculty	Number of Programs	Examples
Islamic Studies	4	Sharia Economics, Family Law, Islamic Communication, Islamic Education
Economics and Business	2	Management, Accounting
Law	1	Law
Medicine	1	Medicine
Teacher Training and Education	6	Educational Administration, Biology, History, Indonesian Language, English, Mathematics
Agriculture	4	Agribusiness, Agrotechnology, Aquaculture, Forestry, Food Technology
Engineering	5	Architecture, Electrical, Chemical, Civil, Industrial, Information Technology

Hypotheses

H_0: There is no significant effect of content, accuracy, format, ease of use, and timeliness on user satisfaction with SIMAK at UMP.

H_a: There is a significant effect of content, accuracy, format, ease of use, and timeliness on user satisfaction with SIMAK at UMP.

EUCS Model

The EUCS (End-User Computing Satisfaction) model by Doll and Torkzadeh (1988) evaluates user satisfaction based on five factors: content, accuracy, format, ease of use, and timeliness. This model has been validated across various systems and contexts, proving its reliability in assessing user satisfaction (Sugandi & Halim, 2020).

Results

Research variables consist of independent (X) and dependent (Y) components.

Tabel 2. Research Variables

Variable	Indicator	Description
Content (X_1)	Information completeness, accuracy	SIMAK provides relevant and accurate academic data.
Accuracy (X_2)	System precision, absence of errors	SIMAK delivers reliable data with minimal errors.

Variable	Indicator	Description
Format (X_3)	Output clarity	SIMAK presents information in a clear and readable layout.
Ease of Use (X_4)	Usability and navigation	SIMAK is user-friendly and easy to operate.
Timeliness (X_5)	Information timeliness and updates	SIMAK provides up-to-date information on time.
User Satisfaction (Y)	Overall satisfaction	Users are satisfied with SIMAK's performance.

Respondent Characteristics

Table. 3 Gander Distribution

Gender	Frequency	Percentage
Male	122	32%
Female	261	68%

The majority of respondents were female (68%), indicating higher participation rates among female students.

Tabel. 4. Faculty Distribution

Faculty	Frequency	Percentage
Islamic Studies	30	7%
Economics and Business	207	54%
Law	10	4%
Medicine	3	1%
Teacher Training and Education	50	13%
Agriculture	40	10%
Engineering	43	11%

Most respondents (54%) came from the Faculty of Economics and Business.

Cohort Distribution

Year	Frequency	Percentage
2017	122	33%
2018	76	19%
2019	90	23%
2020	95	25%

Respondents were mostly from the 2017 cohort (33%).

Instrument Testing

Validity Test

Using the Corrected Item-Total Correlation with r-table = 0.100, all 14 questionnaire items had r-values > 0.100, confirming validity.

Reliability Test

Cronbach's Alpha values for all variables exceeded 0.60, indicating that the questionnaire was reliable.

Variable	Cronbach's Alpha	Result
Content	0.741	Reliable
Accuracy	0.619	Reliable
Format	0.679	Reliable
Ease of Use	0.641	Reliable
Timeliness	0.783	Reliable
User Satisfaction	0.644	Reliable

Hypothesis Testing

Simultaneous Effects (ANOVA)

The Fcount value (287.179) exceeds Ftable (2.2379), with a significance level of 0.000 < 0.1, indicating a significant joint effect of content, format, and timeliness on user satisfaction.

Variable	t-count	t-table	Sig.	Result
Content	12.916	1.966	0.000	Significant
Accuracy	-10.884	1.966	0.000	Not Significant
Format	7.628	1.966	0.000	Significant
Ease of Use	0.411	1.966	0.681	Not Significant
Timeliness	6.608	1.966	0.000	Significant

Partial Effects (t-Test)

Variable	t-count	t-table	Sig.	Result
Content	12.916	1.966	0.000	Significant
Accuracy	-10.884	1.966	0.000	Not Significant
Format	7.628	1.966	0.000	Significant
Ease of Use	0.411	1.966	0.681	Not Significant
Timeliness	6.608	1.966	0.000	Significant

Content, format, and timeliness significantly influence satisfaction, while accuracy and ease of use do not.

Discussion

The findings of this study provide a comprehensive understanding of the factors influencing user satisfaction with the Academic Information System (SIMAK) at Universitas Muhammadiyah Palembang, as evaluated using the End-User Computing Satisfaction (EUCS) model. The analysis reveals that content, format, and timeliness are the most significant predictors of user satisfaction, while accuracy and ease of use do not exhibit a statistically significant effect. These results underscore the importance of information quality, presentation clarity, and system responsiveness in determining students' overall perceptions of system performance and usefulness.

The strong effect of the content variable indicates that the quality, completeness, and relevance of information provided by SIMAK play a decisive role in shaping user satisfaction. Students rely heavily on accurate and comprehensive data—such as course schedules, grades, and registration status—to manage their academic activities. When SIMAK delivers this information in a structured and contextually relevant manner, users perceive the system as reliable and beneficial. This aligns with the central premise of the EUCS model, which posits that the perceived value of an information system is largely dependent on the utility and comprehensiveness of the content it produces. Moreover, in the context of higher education management systems, content quality directly reflects the institution's administrative transparency and technological competence.

Similarly, the format dimension significantly contributes to user satisfaction by influencing how effectively information is presented and interpreted. The clarity, layout, and organization of SIMAK's user interface determine how easily users can locate, read, and process academic information. When data are presented in a consistent, intuitive, and visually coherent manner, users experience less cognitive load, which enhances perceived usability and efficiency. This finding supports Fatima et al. (2019), who concluded that output presentation clarity is a key determinant of user satisfaction in academic and e-learning platforms. It also resonates with Saputra and Kurniadi (2019), who found that systems with clear visual structures and straightforward navigation foster higher engagement and trust among student users.

The third significant variable, timeliness, further validates the importance of real-time information delivery in user satisfaction. Students depend on SIMAK for time-sensitive academic tasks—such as course registration (KRS), grade checking, and deadline monitoring—where outdated or delayed data can lead to frustration and transactional inefficiency. The positive impact of timeliness on satisfaction demonstrates that users highly value systems capable of providing current and promptly updated information. This reflects the broader trend in digital academic services, where speed and data freshness are perceived as indicators of system quality and institutional responsiveness.

Conversely, the accuracy and ease of use variables were found to be statistically insignificant, suggesting that these dimensions do not yet meet user expectations or that their influence is overshadowed by other, more salient factors. Persistent technical issues—such as system downtime, slow server response, or occasional data mismatches—may have weakened users' perceptions of accuracy. Similarly, the ease of use dimension may have been affected by navigation complexities during key processes, particularly during KRS input and academic transactions, where multiple steps or unclear prompts require additional user effort. These operational barriers reduce perceived efficiency and create friction in system interaction. While

SIMAK is functionally comprehensive, the findings suggest that technical stability and interface optimization remain areas needing improvement to achieve higher overall satisfaction.

These results are consistent with previous studies by Fatima et al. (2019) and Saputra & Kurniadi (2019), both of which emphasize that system usability and output clarity are the dominant determinants of satisfaction in academic information systems. The parallels between these findings and those of the present study reinforce the theoretical validity of the EUCS framework in educational technology evaluation. Furthermore, the relative insignificance of accuracy and ease of use highlights the evolving expectations of users: modern students prioritize system performance, accessibility, and data relevance over mere functional precision. This shift reflects broader trends in digital transformation, where user experience (UX) design, responsiveness, and interactivity have become central to perceived service quality.

In summary, the discussion highlights that user satisfaction with SIMAK is primarily driven by the content quality, clarity of presentation, and timeliness of information delivery. While the system has succeeded in providing relevant and well-structured data, improvements are needed in terms of technical reliability, interface simplicity, and transactional efficiency to fully align with user expectations. The insights gained from this study provide valuable feedback for system developers and institutional administrators, guiding future system updates toward a more user-centered, responsive, and efficient academic information platform. By addressing these areas, Universitas Muhammadiyah Palembang can further strengthen SIMAK's role as a cornerstone of its academic digital ecosystem and enhance student satisfaction in alignment with institutional excellence goals.

Conclusion and Recommendations

1. Content, format, and timeliness significantly affect user satisfaction with SIMAK at Universitas Muhammadiyah Palembang.
2. Content had the greatest impact ($t = 12.916 > 1.966$), confirming that accurate and complete information is vital for user satisfaction.
3. Accuracy and ease of use did not significantly affect satisfaction, suggesting that occasional system errors and interface complexity may hinder user experience.
4. The model explains 79.2% of user satisfaction ($R^2 = 0.792$), indicating that SIMAK's implementation generally meets user expectations.

Disclosure Statement

The authors declare no conflicts of interest regarding the publication of this research.

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Biographical Notes

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