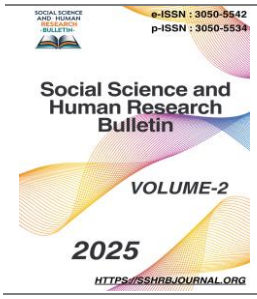

Social Science and Human Research Bulletin

ISSN(e): 3050-5542

ISSN(p): 3050-5534

Vol. 02(08): 447-452, August 2025

Home Page: http://sshrbjournal.org/

Leveraging ICT for Excellence in Academic Public Services in Higher Education

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Article DOI: 10.55677/SSHRB/2025-3050-0809 **DOI URL: https://doi.org/10.55677/SSHRB/2025-3050-0809**

KEYWORDS: academic services, higher education, ICT, service quality, student satisfaction.

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Published: August 25, 2025

ABSTRACT: Purpose – This study aims to analyze the role of Information and Communication Technology (ICT) in enhancing academic service quality and student satisfaction in higher education.

Method – A descriptive survey was conducted at the Faculty of Education and Psychology, Universitas Negeri Semarang (UNNES), involving 67 administrative staff and 2,004 students. Data were collected through questionnaires and analyzed descriptively.

Result – From the staff perspective, ICT infrastructure and internet access were generally adequate to support academic services, although opportunities for professional development remained limited. From the student perspective, academic staff were perceived as competent and courteous; however, about 8–10% of respondents expressed dissatisfaction, particularly regarding responsiveness and interpersonal interactions.

Implication – The findings indicate that ICT significantly contributes to efficiency, accessibility, and transparency in academic services, but its effectiveness depends on staff competence and professionalism. Universities should therefore integrate ICT investments with continuous staff training and ICT-based feedback systems to ensure service excellence and sustained student satisfaction.

1. INTRODUCTION

Higher education institutions play a pivotal role in shaping young generations with strong character and high competitiveness to become agents of change in society. The success of universities in fulfilling this role depends not only on academic excellence but also on their commitment to providing high-quality academic services. Synergy among lecturers, administrative staff, and students is essential to ensure smooth academic processes and to create a supportive learning environment. Research highlights that universities are responsible for equipping students with both professional knowledge and essential non-cognitive skills—such as communication, collaboration, and critical thinking—which are increasingly demanded in the modern workforce. However, there is often a gap between theoretical knowledge and practical competencies, emphasizing the need for more integrated and relevant curricula, as well as supportive attitudes from instructors and staff to foster student growth (Kocsis & Pusztai, 2025; Pandya et al., 2023; Hill et al., 2016). Education also plays a vital role in instilling ethical values, social responsibility, and an entrepreneurial spirit, preparing students to face rapid economic and societal changes (Ahmad et al., 2023; P et al., 2025; Machnik-Slomka & Baldacchino, 2021).

The advancement of Information and Communication Technology (ICT) has become inseparable from efforts to improve public service delivery, including in higher education. ICT allows institutions to provide academic services more quickly, at lower costs, with greater efficiency, and with enhanced coordination across divisions. ICT adoption in higher education streamlines administrative and academic processes, reducing operational costs and increasing efficiency. It facilitates the management of information, automates routine tasks, and enhances communication between divisions, leading to better coordination and faster

service delivery (Khajuria et al., 2023; Buttar, 2016). Within universities, ICT-based service innovations are expected to improve responsiveness, accessibility, and monitoring of academic services, particularly in the context of quality assurance.

Despite the growing recognition of ICT's potential, challenges remain in integrating ICT into academic service delivery. For example, at the Faculty of Education and Psychology, Universitas Negeri Semarang (UNNES), internal quality audits still rely on fragmented and manual data collection, which slows down monitoring processes and undermines the reliability of service quality assessments. This indicates a gap between ICT availability and its effective utilization in supporting academic service excellence.

This study seeks to address this gap by analyzing the role of ICT in enhancing academic service quality and student satisfaction in higher education. Specifically, it examines perspectives from both administrative staff—regarding ICT infrastructure and institutional support—and students—regarding perceptions of staff competence, courtesy, and overall satisfaction. The findings are expected to enrich the literature on ICT-enabled academic services and provide practical insights for universities aiming to optimize ICT adoption to achieve excellence in academic service delivery.

II. METHOD

This study employed a descriptive quantitative survey design to evaluate the readiness of educational facilities and the quality of academic services at the Faculty of Education and Psychology, Universitas Negeri Semarang (UNNES) during 2024 and 2025. Respondents consisted of two groups: educational staff, who assessed the adequacy of academic facilities, and students, who evaluated the quality of academic services. Data were collected using a structured Likert-scale questionnaire that covered two domains: facility readiness (infrastructure, technology, and supporting resources) and service quality (administrative responsiveness, clarity of information, and academic support). The survey was distributed online. Data were analyzed using descriptive statistics.

III. RESULTS

The study investigated the role of Information and Communication Technology (ICT) in supporting academic public services in higher education, focusing on Universitas Negeri Semarang (UNNES). Data were collected from two groups of respondents: administrative staff (N=67) and students (N=2,004).

Perspectives from Administrative Staff

The survey with administrative staff highlighted the availability of ICT-related facilities and institutional support for academic services:

Table 1. Staff Assessment of Supporting Infrastructure Availability

Rating Category	Percentage (%)	Description
Very Good	44.8	Infrastructure highly supports activities
Good	47.8	Infrastructure adequately available
Less Adequate	7.5	Some infrastructure limitations exist
Poor	0.0	No staff rated infrastructure as poor

The majority of staff (92.6%) assessed the availability of supporting infrastructure as either good or very good, indicating strong institutional readiness in terms of physical resources.

Table 2. Staff Assessment of Internet Facilities and Network Access

Rating Category	Percentage (%)	Description
Very Good	53.7	Internet facilities and network highly reliable
Good	37.3	Internet generally supports academic services
Less Adequate	9.0	Some connectivity issues remain
Poor	0.0	No staff rated internet facilities as poor

A total of 91% of staff rated internet access as either good or very good, demonstrating strong ICT infrastructure that supports academic and administrative services.

Table 3. Staff Assessment of Facilities for Professional Development

Rating Category	Percentage (%)	Description
Very Good	37.3	Professional development programs highly accessible
Good	52.2	Opportunities generally available and useful
Less Adequate	10.4	Limited access to training/workshop opportunities
Poor	0.0	No staff rated facilities as poor

Almost 90% of staff rated professional development facilities (training, workshops, internships) as good to very good, although a small proportion (10.4%) reported limited access.

Perspectives from Students

The student survey revealed perceptions of academic staff performance in delivering academic services:

Table 4. Competence in Serving Student Needs

Rating Category	Percentage (%)
Very Good	37.1
Good	53.2
Less Adequate	8.5
Poor	1.1

More than half (53.2%) of students rated staff competence as "good," while 37.1% rated it "very good." Only 8.5% considered it less adequate, and a very small proportion (1.1%) rated it poor.

Table 5. Courtesy in Academic Service Delivery

Rating Category	Percentage (%)
Very Good	33.0
Good	55.2
Less Adequate	10.2
Poor	1.6

The findings of this study highlight the significant role of Information and Communication Technology (ICT) in accelerating access to academic services within higher education institutions. Internet facilities and network access, which are fundamental ICT infrastructures, were rated highly positive by more than 90% of respondents. This suggests that ICT integration has successfully supported efficient and timely academic services, reducing barriers to information flow and enabling students and staff to access resources more effectively. Such results align with the research objective of analyzing the role of ICT in enhancing service accessibility in higher education.

In addition, the utilization of ICT was found to influence student satisfaction with academic services. Competence and courtesy in academic service delivery, while not purely technological in nature, are indirectly strengthened by ICT-based systems that streamline communication and feedback between students and staff. The majority of students rated these aspects positively, though a small percentage expressed dissatisfaction, particularly concerning interpersonal elements of service delivery. This indicates that while ICT provides a strong foundation for improving satisfaction, complementary human interaction skills remain essential for a holistic service experience.

Overall, the study demonstrates that ICT utilization not only accelerates access to academic services but also contributes to higher levels of student satisfaction. However, to maximize impact, institutions must continue to expand equitable access to professional development opportunities and enhance staff interpersonal competencies. This ensures that the benefits of ICT are fully realized in both the efficiency of service delivery and the quality of student experience in higher education.

IV. DISCUSSION

ICT and Access Acceleration in Academic Services

Information and Communication Technology (ICT) has been consistently identified as a central factor in accelerating access to academic services in higher education. Multiple studies highlight that the development of robust internet facilities and reliable network infrastructure acts as a key driver for efficient, accessible, and high-quality service delivery (Alenezi et al., 2023; Buttar, 2016; Pinto & Leite, 2020). The findings of this study reinforce such evidence, where the majority of respondents rated internet facilities and network availability as "very good" or "good," indicating that ICT infrastructure has been successfully developed to support institutional efficiency. Furthermore, the availability of online academic portals, rapid communication channels, and digitalized administrative processes significantly reduces the time and effort needed by students to obtain essential academic services (Pinto & Leite, 2020; Balaji & Sahija, 2022). These ICT-based innovations not only streamline course registration, information retrieval, and academic support but also facilitate real-time feedback and monitoring, thereby improving both the speed and quality of academic service delivery (Alenezi et al., 2023; Pinto & Leite, 2020; Balaji & Sahija, 2022). This aligns directly with the first research objective, which emphasizes analyzing the role of ICT in enhancing the efficiency and quality of academic services in higher education.

ICT and Student Satisfaction with Academic Services

Research strongly supports that ICT utilization in higher education significantly boosts student satisfaction, particularly in terms of staff competence, responsiveness, and service transparency (Alyoussef & Omer, 2023; Al-Rahmi et al., 2020; Sayaf et al., 2021; Jiménez-Bucarey et al., 2021; Rifa'i & Triana, 2024). Digital platforms streamline academic and administrative processes, reduce bureaucracy, and provide real-time access to information, which collectively enhance trust and overall satisfaction among students. For instance, studies show that students report high satisfaction with the ease of use, usefulness, and quality of ICT-based services, all of which positively influence their academic experiences and engagement (Jiménez-Bucarey et al., 2021).

Nevertheless, research also highlights that interpersonal aspects—such as empathy, communication, and direct personal engagement—remain critical determinants of student satisfaction. While ICT improves efficiency, transparency, and accessibility, some dissatisfaction persists when human interaction is reduced, suggesting that technology cannot fully replace the relational value of face-to-face interaction in academic services (Jiménez-Bucarey et al., 2021; Tokareva et al., 2021; Wong & Chapman, 2022). This indicates that technical service quality and digital systems must be complemented by strong interpersonal support to maximize student satisfaction (Jiménez-Bucarey et al., 2021; Wong & Chapman, 2022).

These findings align with the second research objective, which aims to assess the effect of ICT on student satisfaction. The results confirm that while ICT-based systems play a significant role in enhancing competence, responsiveness, and transparency, the human element—particularly empathy and communication—remains essential in ensuring holistic student satisfaction.

Balancing Technology and Human Interaction

A growing body of research emphasizes that while ICT enhances access, efficiency, and satisfaction in academic services, human interaction remains essential for a holistic educational experience. Studies highlight that technology alone cannot fully address students' needs for engagement, empathy, and personalized support; thus, a dual strategy—strengthening ICT infrastructure and developing staff's interpersonal skills—is recommended for optimal outcomes.

Integration, Not Replacement. Research underscores that the most effective higher education environments blend digital tools with strong human elements. Technology can streamline processes and expand access, but meaningful learning and satisfaction are maximized when academic staff act as facilitators, motivators, and communicators, supporting students' autonomy and engagement (Rapanta et al., 2021; Castro, 2019; Reski et al., 2024; Tsakissiris, 2020).

Staff Training and Service Orientation. The rapid shift to online and blended learning revealed that staff competence in both technology and interpersonal skills is crucial. Institutions that invest in staff development—focusing on communication, empathy, and service orientation—see better student outcomes and satisfaction (Rapanta et al., 2021; Goulart et al., 2021). This highlights that the success of ICT implementation is not solely technical but also depends on human readiness to engage with students effectively.

Equitable Access and Reliability. Strengthening ICT infrastructure ensures all students benefit from digital innovations, but this must be paired with policies and training that foster humanistic values and interpersonal connection (Castro, 2019; Reski et al., 2024; Tsakissiris, 2020). Without adequate infrastructure, the benefits of ICT risk becoming unevenly distributed, potentially widening the gap between students.

Overall, the study suggests that ICT contributes positively to both accelerated access and increased satisfaction. Nevertheless, reliance on technology alone is not sufficient. Human resources, especially academic staff, play a vital role in complementing ICT through effective communication and service orientation. Therefore, higher education institutions should adopt a dual strategy: (1) strengthening ICT infrastructure to ensure equitable access and reliability, and (2) enhancing staff capacity through training in interpersonal and service skills. This balanced approach will maximize the dual benefits of ICT—efficiency and satisfaction—in delivering academic services.

V. CONCLUSION

Leveraging ICT plays a pivotal role in enhancing academic public services in higher education by improving efficiency, accessibility, and transparency. The integration of ICT has significantly supported both staff performance and student experiences, contributing to higher levels of satisfaction with academic services. However, the findings also highlight that the effectiveness of ICT depends on the competence, responsiveness, and courtesy of administrative staff. While most students expressed positive perceptions, a small proportion remained dissatisfied, particularly in terms of responsiveness and interpersonal interactions, indicating the need for continuous improvement.

The results imply that higher education institutions should not only invest in ICT infrastructure but also ensure its optimal use through capacity building and professional development for staff. Leveraging ICT must go hand in hand with strengthening human resource quality to maximize its impact on academic service delivery. Furthermore, universities should establish ICT-based feedback mechanisms to monitor service quality and respond swiftly to student concerns. By aligning technological advancement with staff competence and service orientation, institutions can achieve excellence in academic public services and sustain long-term student satisfaction.

VI. ACKNOWLEDGMENTS

The authors would like to express sincere gratitude to the Faculty of Education and Psychology, Universitas Negeri Semarang (UNNES), for granting permission and providing financial support for the implementation of this research.

VII. DISCLOSURE

The authors declare that there is no conflict of interest regarding the publication of this article.

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