

# A Systematic Examination of ICT's Significance in Higher Education Administration

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**Abstract-** This study investigates the impact of Information and Communication Technology (ICT) on administrative functions within higher education institutions. It employs qualitative techniques and a systematic literature review to assess the positive and negative effects of ICT on administrative services. The findings suggest that ICT generally enhances efficiency and productivity in administrative tasks, but challenges exist, such as a lack of prior experience with information systems and inadequate training for staff. To address these issues, the study recommends the development of cloud-based management information systems accessible via mobile phones, tailored training programs, and efforts to motivate administrative personnel to utilize ICT services. However, the study acknowledges limitations, including limited available research and a shortage of recent publications in this area.

**Key Words:** ICT, Information system, Administrative functions, Higher education

## 1. INTRODUCTION

Administrative Officers in the Higher Education System hold a crucial role in universities, supporting the overall betterment of the country. While their specific duties are not clearly defined, they act as representatives of the University Registrar, contributing significantly to the administrative structure of the institution. Their main responsibilities include safeguarding university property and records, managing assets, maintaining detailed records of various university aspects, and ensuring a favorable learning environment for students and academic staff. They also play a vital role in implementing directives and regulations from relevant authorities.

Information and communication technology (ICT) comprises a wide array of technological tools and resources, often used interchangeably with information technology (IT). These tools, including radio, television, computers, the internet, mobile phones, and fax machines, facilitate communication, information creation, dissemination, storage, and management. ICT services find applications in sectors like healthcare, education, business, and transportation. By integrating ICT, manual processes shift to computerized or automated systems, resulting in reduced time consumption and improved efficiency across all sectors.

Information and Communication Technology (ICT) plays a vital role in both administrative and educational aspects of Higher Educational Institutions. While the initial focus of ICT was primarily on non-administrative tasks, there has been a noticeable shift over time, with all employees, including administrative officers, actively contributing to its integration. Administrative officers have made progress in incorporating ICT into their roles, but there is still room for improvement. Recognizing the significance of ICT, Higher Educational Institutions should continue to support and encourage administrative officers in adopting and effectively utilizing ICT tools. This will enhance their efficiency and effectiveness in their duties, ultimately advancing administrative functions within the institutions.

## 2. REVIEW OF LITERATURE

Amoloza (2013) found that administrative staff at the University of the Philippines effectively employs available ICT resources for their office tasks, despite encountering significant security issues. In contrast, a review of school staff by Simin et al. (2013) revealed that administrative staff lacked confidence in using ICT services due to technical skill gaps, suggesting the need for necessary devices and proper training. Conversely, Miraz et al. (2016) conducted a statistical analysis among administrative staff in higher educational institutions in Bangladesh, highlighting their interest in utilizing ICT devices and services. Pegu's study in 2014 on "Information and communication technology in higher education in India: challenges and opportunities" demonstrated the potential of ICT-enabled education to democratize and transform higher education in India. Similarly, Mahisa and Anju's research in 2014 explored "The role of ICT in higher education in India" and identified ICT as a significant catalyst for change in various educational practices. On the other hand, an analysis conducted in Nigerian universities by Egoeze et al. (2018) revealed that ICT applications did not meet expectations in administrative tasks like student registration, examination processes, financial activities, and accessing information through university websites. Similar findings were also noted in research conducted in Indian universities by Pohekar (2018).

Chakraborty et al. (2018) identified four key factors—cost, availability, usage, and ICT knowledge—as having a positive impact on the effectiveness of ICT services in administrative tasks within higher education institutions.

Among these factors, cost was found to be particularly significant. The Indian government has implemented various measures to improve administrative tasks in higher education institutions by progressively developing information systems through ICT services (Chakraborty et al., 2018). The effective and innovative implementation of ICT technologies in administration contributes to successful administrative reforms (Mukhopadhyay and Parhar, 2014). Furthermore, Gedwar (2016) observed that administrative staff members were willing to embrace new technologies, indicating their readiness for technological advancements. In line with this, Oluoch (2016) suggested that educational organizations can enhance administrative management effectiveness by increasing the utilization of ICT services, providing staff with appropriate technology, and offering adequate training. Qureshi and Muhammad (2016) found that the proper utilization and motivation to use ICT-based management information systems can significantly improve the efficiency of administrative tasks within universities.

Makewa et al. (2013) affirmed that the implementation of a management information system in educational institutions streamlines administrative procedures electronically. A qualitative study conducted at a university in Botswana found that proper training in ICT technologies is crucial for university staff because many of them avoid using these technologies due to a lack of knowledge (Seitebaleng, 2018). Ghavifekr et al. (2013) similarly emphasized the importance of administrative staff effectively utilizing available ICT services. Ukpoma (2019) recommended that administrative officers enhance their ICT application knowledge and guide their subordinates to undergo relevant training to stay up-to-date.

### 3. METHODOLOGY

In this study, a systematic review approach was utilized to explore the correlation between Information and Communication Technology (ICT) and administrative operations within higher education. To compile relevant research materials, specific search parameters were employed, incorporating keywords like ICT, administrative functions, and higher educational institutions. Boolean operators, such as AND and OR, were employed to refine the search results. Furthermore, a set of criteria was applied to screen the research papers, which encompassed selecting full-length articles, accessing freely available research papers, and considering those sourced from international conferences or book chapters. Following these criteria, the final collection of research papers was identified, and the essential data was extracted for subsequent analysis.

### 4. CONCLUSION AND RECOMMENDATIONS

The higher education sector relies on a variety of administrative tasks, including circular accessibility, monitoring, payment processing, registration, and examination management. Improving the efficiency and effectiveness of these functions necessitates reducing error rates in administrative procedures. Existing literature underscores the potential of computerized systems as a means to replace manual methods and decrease errors. This study specifically examines the impact of Information and Communication Technology (ICT) services on administrative tasks within higher educational institutions.

A qualitative approach was adopted to analyze how ICT influences administrative tasks, utilizing data gathered from previous studies through systematic review. The research consistently underscores the significance of ICT services and applications in enhancing administrative tasks by reducing error rates and completion times. However, the studies also identified negative consequences, including challenges associated with learning new technologies and a lack of proper training for administrative staff members.

To address these challenges, the majority of studies recommended providing comprehensive training and motivation for administrative officers. Additionally, it is advisable to develop a user-friendly management information system accessible via a mobile app, utilizing both offline and cloud-based storage. Furthermore, it is strongly advised to gather and analyze the expectations of administrative staff members before developing any management information system.

### 5. LIMITATIONS AND FUTURE RESEARCH IMPLICATIONS

This study encountered limitations that should be considered. There was a restricted availability of pertinent research works, which constrained the extent and thoroughness of the literature review. The number of recently published papers on the topic was also relatively scarce, potentially impacting the study's overall comprehensiveness.

To further develop a management information system and emphasize the importance of ICT services in administrative tasks, conducting a statistical analysis is crucial. This analysis should aim to capture the expectations of administrative staff regarding the shift from manual processes to a computerized environment. Collecting input from administrative staff members at various universities can provide valuable insights into their specific requirements and challenges during this transition.

These limitations highlight areas for improvement and future research, emphasizing the need for a more extensive and up-to-date literature base and a thorough understanding of administrative staff expectations and needs. Addressing these limitations can enhance the study's validity and applicability and contribute to effective ICT solutions in higher education administration.

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