

# Barriers in Implementing Electronic Management During the COVID-19 Pandemic Crisis in Jordanian Universities: A Comparative Study Between Public and Private Institutions

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*The research is financed by Asian Development Bank. No. 2006-A171(Sponsoring information)*

## Abstract

This study aimed to explore the barriers to the implementation of electronic management during the COVID-19 pandemic crisis in Jordanian universities. It also sought to determine whether there were statistically significant differences in the perceptions of administrative staff in Jordanian universities regarding these barriers, based on the type of institution (public or private). A questionnaire was developed for field survey purposes and to gather the opinions of respondents. A simple random sample consisting of 700 administrative staff members was selected. The study's findings revealed that the extent of barriers to the implementation of electronic management during the COVID-19 pandemic in Jordanian universities was significant. However, no statistically significant differences were observed in the barriers to electronic management implementation between public and private universities

**Keywords:** Barriers, Electronic Management, COVID-19 Pandemic, Jordanian Universities

**DOI:** 10.7176/IKM/13-7-03

**Publication date:** December 31<sup>st</sup> 2023

## 1. Introduction

Electronic management has emerged as a critical necessity and a priority in institutional operations, particularly during the challenging phase that institutions globally are enduring due to the COVID-19 pandemic. This situation has compelled governments to reconsider their management strategies to optimize expenses and adhere to mandated social distancing protocols, especially given the impracticality of traditional management methods during this period. This shift necessitates the adoption of a technologically driven modern administrative approach (Moulay & Yazid, 2021). Amidst the pandemic, which disrupted educational institutions worldwide, certain institutions continued their electronic operations seamlessly due to their robust and flexible electronic administrative systems, enabling the effective use of information and communication technologies (Al-Muzaffar, 2021).

Electronic management is a recent and significant term in contemporary science, first emerging in the United States with the advancement of information and communication networks (Abusef & Tarofder, 2021). Scholars like Sabo (2020) view it as a fundamental component for simplifying administrative processes, while Mailizar et al. (2020) consider it a new domain enhancing the interplay between information technology, the internet, and electronic business applications. It also encompasses challenges and strategic visions for administrative transformation. Others, such as Abdulrahman & Ridha (2018), define it as leveraging information and communication technologies in decision-making, information access, and increasing transparency. Al-Taleb (2020) emphasizes its role in delivering information and services electronically, moving from a regulated to a motivating role, thus characterized by transparency, speed, and efficiency in information storage. It is a confluence of hardware, software, communication networks, administrative concepts, and implementation mechanisms (Ahmad, 2013).

Given the significance of electronic management in adapting to changes in electronic technologies and information systems, both individually and institutionally, its role has been pivotal in crisis management and driving technological and cultural changes. These changes have profound implications for educational institutions, particularly in decision-making and responding to challenges (Al-Qahtani, 2019).

Therefore, the activation of electronic management in universities has become imperative, not merely an option, in the wake of COVID-19. Its advantages include facilitating communication, streamlining decision-making processes, and enhancing role performance efficiently and effectively without time and space constraints (Mahmoud, 2021). Transitioning to electronic services and remote interactions aligns with the precautionary measures against COVID-19, reducing paper transactions that pose infection risks (Habir, 2021).

However, despite these benefits, the system faces several challenges, as identified in Al-Khuzai's study (2021). These include administrative complexities, inflexibility, inadequate program planning, lack of inter-departmental coordination, reduced technological expertise exacerbated by the pandemic, insufficient training in electronic device usage, and a general lack of awareness or negative attitudes toward technology. Furthermore,

there are technical, legal, and political hurdles that necessitate a comprehensive legal framework to protect individuals and enhance trust in electronic management. Given the current challenges faced by Jordanian universities during the pandemic, there is an urgent need to develop electronic management systems and propose recommendations for transitioning to this model, capable of adapting to changes and addressing the pandemic's impacts and implications.

### *1.1 Research Problem and Questions*

The Hashemite Kingdom of Jordan, like many countries, has been significantly impacted by the COVID-19 pandemic, leading to the closure of educational institutions, including universities. This unprecedented situation necessitated a swift transition to electronic administration as the primary mode of administrative operation. Despite Jordan's investment in the information technology sector, Jordanian universities are yet to achieve the desired proficiency in electronic management. This gap has been particularly evident during the pandemic, where challenges in implementing electronic management have been exacerbated. A study by Al-Arini and Al-Hassim (2021) highlighted significant barriers faced by universities in this transition, categorizing them into financial, human, administrative, and technical obstacles.

Given this backdrop, this study aims to investigate the following research questions to deepen the understanding of the current state of electronic management in Jordanian universities and to identify actionable areas for improvement:

1. What are the perceived obstacles to implementing electronic administration during the COVID-19 pandemic in Jordanian universities, as identified by the administrative staff at the University of Jordan?
2. Are there statistically significant differences in the perceptions of administrators regarding the obstacles to implementing electronic administration during the COVID-19 pandemic in Jordanian universities, attributable to the type of institution (public versus private)?

### *1.2 Research Objectives and Significance*

The primary aim of this study is to uncover the key barriers to the implementation of electronic administration as perceived by the administrative staff at the University of Jordan. A secondary objective is to determine whether there are statistically significant differences in these perceptions based on the type of university, comparing public and private institutions within Jordan.

This research is of particular significance for several reasons. First, it seeks to raise awareness about the concept of electronic management and its potential application across educational institutions. In the context of the ongoing COVID-19 pandemic, which has profoundly affected the educational system, this study addresses an urgent need to understand and adapt to the challenges posed by such a significant global crisis.

The study is notably relevant as it aligns with contemporary events, specifically the challenges introduced by the COVID-19 pandemic. It contributes to the existing body of knowledge by focusing on an area of crisis management that has become crucial in recent times. The findings of this study are expected to provide university administrations with a clear understanding of the obstacles encountered in implementing electronic administration during the pandemic. This understanding is essential for making necessary adjustments or reinforcing effective strategies. The insights gained could prove instrumental in navigating the complexities of the pandemic and enhancing the resilience and efficacy of university administration in the face of such unprecedented challenges.

### *1.3 Research Scope*

This study was specifically confined to administrators working in Jordanian universities during the second semester of the 2022/2023 academic year. The validity and reliability of the research instrument employed significantly determine the outcomes of this study.

### *1.4 Previous Studies*

In reviewing the literature, several pertinent studies shed light on the dynamics of electronic management in educational settings. Oyedemi's (2015) research revealed that secondary school principals generally hold positive attitudes towards the use of ICT tools. Despite this enthusiasm, the study also uncovered a significant deficit in infrastructure, particularly regarding the availability of devices and networks in schools, which hampers effective ICT implementation.

Further, Abdul Rahman's (2018) study delved into the extent of electronic management application, concluding that it was 'large' in scope. Interestingly, the study discovered statistically significant differences ( $\alpha = 0.05$ ) based on the type of schools across all areas, except in the realms of electronic planning and organization. This finding underscores the variability in electronic management adoption in different educational environments.

Complementing these insights, Abdul Rahman and Omar (2018) argued that electronic management, while not overly complex, is becoming an essential component for universities, particularly in the Kurdistan Region. They attributed this necessity to the region's conducive environment, including its fertility, robust infrastructure,

and favorable surrounding conditions.

The study by Qanbar & Abbas (2019) presented a hierarchy of obstacles to effective electronic management, identifying communication barriers as the most significant, followed by human and technical challenges. This ranking provides a clear indication of the areas that require focused attention for successful electronic management implementation.

In a similar vein, Waswas & Jwaifell (2019) assessed the level of electronic management application and found it to be average in administrative and technical dimensions but weak in the physical dimension. This imbalance signals a need for more comprehensive resource allocation and infrastructure development in electronic management practices.

Abdul Rahman and Tadros's (2020) research also emphasized the challenges in adopting electronic management, noting that human, financial, and technical obstacles were substantial, while organizational barriers were less pronounced.

Perrotta & Bohan's (2020) study offered a different perspective, highlighting the positive experiences of a sample group in terms of professional development, mentoring, and curriculum control, and their significant impacts on online teaching and student learning during the COVID-19 pandemic. This insight underscores the potential benefits of electronic management in enhancing educational outcomes.

Sá & Serpa (2020) brought to light the profound challenges that higher education institutions face in overcoming the COVID-19 pandemic if they aspire to lead in the international education market. This global perspective emphasizes the critical role of electronic management in navigating current educational challenges.

Lastly, Salem's (2021) study shed light on the reality of using electronic management during the pandemic, which was rated as 'high.' Interestingly, no significant differences were found in the use of electronic management strategies during this period. Mahmoud's (2021) research also highlighted the presence of obstacles hindering the application of electronic management, notably the lack of supporting laws, inadequate maintenance of infrastructure, and a general lack of awareness about the importance of electronic leadership.

## **2. Methodology**

### *2.1 Research Design*

This study employed a descriptive analytical approach, utilizing a questionnaire as the primary data collection tool. This method was chosen for its suitability in accurately describing the phenomenon under investigation.

### *2.2 Research Population and Sample:*

The research population comprised all administrators at both public and private universities in Jordan, totaling 28,656 individuals. A simple random sampling technique was used to select participants. This resulted in a sample of 450 administrators from public universities and 250 from private universities, making a total sample size of 700 administrators. Subsequently, questionnaires were distributed, data was transcribed, results were analyzed, discussed, and recommendations were formulated.

### *2.3 Research Tool*

The study tool was developed by leveraging insights from previous studies. It consists of two parts: The first part gathers demographic data, including the type of university (public or private). The second part comprises items designed to measure the barriers to implementing electronic administration during the COVID-19 pandemic in Jordanian universities.

#### *2.3.1 Research Tool Scoring*

A five-point Likert scale was used for scoring the study tool. Responses to each item were scored on a range from 'strongly agree' to 'strongly disagree', assigned numerical values of 5 to 1, respectively. The results were analyzed using the following scale: 1.00-2.33 indicating a low degree, 2.34-3.67 a moderate degree, and 3.68-5.00 a high degree.

#### *2.3.2 Validity*

To ensure content validity, the initial version of the study tool was presented to ten experienced arbitrators specializing in educational administration at Jordanian universities. They evaluated the clarity, relevance, and importance of the statements and suggested necessary additions, modifications, or deletions. This process was vital to refine the tool into its final form.

#### *2.3.4 Reliability*

The stability of the study tool was ascertained using the test-retest method. The questionnaire was applied and then re-applied two weeks later to a group of 30 individuals outside the study sample. The Pearson correlation coefficient between the two sets of responses was calculated. Additionally, internal consistency was assessed using the Cronbach Alpha equation, and the obtained values were deemed appropriate for this study.

### 2.4 Data Analysis

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS). Techniques such as frequencies, percentages, arithmetic means, standard deviations, t-tests, and one-way analysis of variance (ANOVA) were employed to analyze the responses of the study sample.

### 3. Results

**Results of the First Question:** 'What are the obstacles to implementing electronic administration during the COVID-19 pandemic crisis in Jordanian universities, as perceived by administrators at the University of Jordan?' To address this question, arithmetic means and standard deviations were calculated. The findings are detailed in Table (1).

Table (1): Arithmetic Means and Standard Deviations of the Obstacles to Implementing Electronic Administration During the COVID-19 Pandemic Crisis in Jordanian Universities, as Perceived by Administrators at the University of Jordan

Rank	Number	Field	Arithmetic Mean	Standard Deviation	Level
1	4	Financial Obstacles	3.90	.567	High
2	1	Human Obstacles	3.87	.615	High
3	2	Organizational Obstacles	3.82	.582	High
4	3	Technical Obstacles	3.70	.639	High
		Overall Score	3.83	.530	High

Table (1) illustrates that the arithmetic means ranged between 3.70 and 3.90. The field of financial obstacles ranked highest with an arithmetic mean of 3.90, while the field of technical obstacles was ranked lowest with an arithmetic mean of 3.70. The overall score for all obstacles combined was 3.83

**Results of the Second Question:** 'Are there statistically significant differences ( $\alpha = 0.05$ ) in the perceptions of administrators regarding the obstacles to implementing electronic administration during the COVID-19 pandemic in Jordanian universities, attributable to differences in the type of university (public or private)?' To address this question, arithmetic means and standard deviations for the obstacles were calculated based on the university type variable. The 't-test' was employed to determine the statistical differences between these means. The findings are presented in Table (2)

Table (2): Arithmetic Means, Standard Deviations, and 't-test' for the Impact of University Type on the Obstacles to Implementing Electronic Administration During the COVID-19 Pandemic in Jordanian Universities

Obstacles	Type of University	Number	Arithmetic Mean	Standard Deviation	't' Value	Degrees of Freedom	Statistical Significance
Human Obstacles	Governmental	450	3.85	.623	-1.146	698	.252
	Private	250	3.91	.599			
Organizational Obstacles	Governmental	450	3.81	.608	-1.093	698	.275
	Private	250	3.86	.531			
Technical Obstacles	Governmental	450	3.69	.636	-.601	698	.548
	Private	250	3.72	.646			
Financial Obstacles	Governmental	450	3.88	.575	-1.180	698	.238
	Private	250	3.93	.552			
Overall Score	Governmental	450	3.81	.539	-1.140	698	.255
	Private	250	3.86	.512			

Table (2) indicates the absence of statistically significant differences ( $\alpha = 0.05$ ) attributable to the type of university in all fields and in the overall score.

### 4. Discussion and Conclusion

#### 4.1 Discussion

The analysis revealed that financial constraints were the most significant barrier, ranking highest among the obstacles with a notable degree. This prominence is attributable to the financial implications of the COVID-19 pandemic on Jordanian universities, which included measures like deferring tuition fees and the necessity for robust communication networks, servers, load devices, protection systems, and e-learning and training software.

The heightened demand for technology-intensive resources during the crisis inevitably strained financial resources. These findings are in concordance with Abdel-Rahman and Tadros (2020).

In second place, human obstacles were identified as a major challenge. This was largely due to inadequate training and development of staff in adapting to the demands of the pandemic, coupled with a lack of psychological and moral readiness among administrators for the implementation of electronic management. These findings contrast with the observations made during the pandemic as reported by Qanbar & Abbas (2019).

Organizational obstacles were ranked third. The key contributing factors to this ranking include the insufficient development of administrative leadership adept at navigating electronic management challenges during the pandemic, the absence of strategic planning for crisis management, and poor coordination between administrative units within universities. This aspect of the study diverges from the findings of Abdel Rahman (2018).

Technical obstacles, although significant, were ranked lowest. The primary reasons for this include the increased pressure on ICT programs and infrastructure due to the sudden shift to electronic interactions for all university activities. This situation led to technical challenges and highlighted deficiencies in the existing ICT infrastructure. These results align with the findings of Oyedemi (2015) and Abdel-Rahman and Omar (2018).

The absence of statistically significant differences in the implementation challenges of electronic administration between public and private universities can be attributed to the global nature of the pandemic. The widespread impact of COVID-19 transcended sectoral boundaries (educational, economic, health, social, etc.), thereby imposing similar obstacles on both public and private universities irrespective of their categorization.

Furthermore, the uniformity in the challenges faced by both public and private universities during the pandemic underscores a universal need for adaptability and resilience in the face of unprecedented crises. The pandemic's far-reaching effects necessitated a swift transition to digital platforms, a challenge that was equally formidable for all types of universities regardless of their resources or prior technological preparedness. This shared struggle highlights the overarching influence of global crises on educational institutions, transcending the usual disparities between public and private sectors. It suggests that in times of universal challenges, such as a pandemic, the type of university does not significantly influence the nature of the obstacles encountered, but rather the global context and the rapid need for adaptation play a more pivotal role.

Additionally, the lack of significant differences could also be indicative of a common baseline in the digital readiness and infrastructure among Jordanian universities, both public and private. This implies that, despite the differences in funding, governance, and operational models, universities across the board had similar starting points in terms of electronic administration capabilities and challenges. The pandemic acted as a leveler, bringing to light the essential role of electronic administration in educational continuity. This also sheds light on the potential for future improvements and investments in this area, suggesting a need for a unified approach in enhancing digital infrastructure and administrative capabilities to better prepare for any unforeseen challenges.

#### 4.2 Conclusion

The study was designed to explore the challenges of implementing electronic administration in Jordanian universities during the COVID-19 pandemic and to ascertain if there were any statistically significant differences in how administrators, based on their affiliation with either public or private universities, perceived these obstacles. The findings revealed a high level of obstacles in implementing electronic administration across the board during the pandemic, with no notable statistical differences between public and private institutions.

In light of these results, the study proposes several strategic recommendations. Primarily, it advocates for the establishment of a specialized committee tasked with the development of robust financial strategies. This committee would be responsible for identifying alternative financial resources to alleviate the fiscal strains faced by universities. It would also focus on crafting future-oriented scenarios aimed at mitigating financial difficulties, thereby ensuring the sustainable operation of universities. Additionally, the study underscores the importance of enhancing communication channels between universities and various organizations, which could contribute significantly to improving their financial health. Finally, the study recommends conducting further research in this domain, incorporating different variables and exploring diverse academic communities to deepen the understanding of electronic administration challenges and opportunities.

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