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Level of Applying Electronic Management as Perceived by Its Staff Members

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ABSTRACT

This study aimed to determine the level of applying electronic management and its obstacles in university. To investigate research questions, a survey research method using a developed questionnaire was employed. Among 239 respondents, 30 staff members were surveyed using simple random sampling. The results indicate that the level of applying e-planning and e-organizing was moderate, but the level of applying e-controlling was low in the Faculty of Education, University of Khartoum. The aggregate level of applying e-management in the Faculty of Education at the University of Khartoum was moderate. There are obstacles that face applications of e-management represented in the poor infrastructure of the internet and power outages and unavailability of training courses on modern technologies and devices for college employees. The study recommended the necessity of paying attention to providing the requirements of human and material electronic management within the college so that the college administration and the heads of the various departments can perform their work in the required manner. Besides, identify the causes of problems that hinder the college administration's application of electronic management dimensions and work to solve them.

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1. INTRODUCTION

The rapid advancements in information technology and the internet have prompted corporate companies to consider utilizing current technologies to their maximum potential in all types of businesses and activities (Alkhsabah, 2017). Electronic management is one of the most important modern systems, which is considered a contemporary entrance to develop and update business methods and procedures in the general and academic field in particular (AlOqlah, 2021). Electronic management consists of two words management and electronics, management deals with the art of fulfilling the tasks of the manpower working in the organization (university) to help students and staff achieve their desired outcomes, and the main operational functions are planning, organization, control, and decision-making. Electronics is the branch of science, engineering, and technology that deals with electronic circuits involving active electronic components such as vacuum tubes, all types of transistors, diodes, and circuits. Electronic management or e-management aims to turn a conventional office that depends on paper processes into a paperless office depending on electronic processes to eliminate the routine and achieve fast and accurate completion of tasks and transactions.

Moreover, e-management means moving from traditional work to information applications, including computer networks, to connect organizational units, which facilitate access to data and information to make appropriate decisions and accomplish work in an efficient, cost-effective, and fast manner (Waswas & Jwaifell, 2019; Daramola, 2022; Sudaryat *et al.,* 2022). E-management as the ability to use information and communication technology and modern techniques to electronically carry out administrative activities via the Internet and automated computer networks. Furthermore, Ogbonna *et al.* (2011) defined e-management as a diversity of services focused on electronic information with the strengthening of the participatory components to accomplish the goals of administrative management.

Regarding e-management functions, on the whole, scholars agreed on functions that are: e-planning, e-organizing, and e-controlling. e-planning means determining what is intended done instantly and, in the future, depending on the flow of information from inside and outside the institution and cooperation joint between the top and bottom to benefit from the electronic network to meet the requirements of marketing changing and the needs of potential customers and their preferences. e-organizing expresses the use of electronic means in determining the general framework for the distribution of power, tasks, and network-horizontal relationships, and finding the necessary coordination to achieve organizational goal. E-controlling is the process of using electronic methods to get the information that allows management to measure and correct the performance of assigned activities of subordinates to ensure that the goals of the organization and plans that are designed to reach them have already been achieved.

e-management in education is a new style of educational management that has far-reaching implications for educational institutions' domains of activity, tactics, and functions. These effects are not only due to the technological dimension represented by digital technologies but also it is trying to attain more administrative flexibility in delegation and empowerment via the development of administrative principles that have been collected over many decades (Bataineh, 2017). Thus, it provides several benefits, such as speed of work, decision-making, reducing administration costs, overcoming the problem of geographical and temporal dimensions, and addressing bureaucracy.

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E-management is gaining importance in administrative development as a tool to facilitate and simplify administrative procedures, increase the productivity of workers, assist in decision-making, and activate the supervision process (Ellatif & Abdulmutalib, 2013). This importance was reflected in the educational administration and higher institutions in many outputs such as increasing arrival to postsecondary learning, enhancing the availability of resources for education, and facilitating interaction among learners (Osakede *et al*., 2017). The reasons why traditional institutions shift to electronic management, like the inability to merge data all over the institution, the difficulty of increasing competition among institutions, the desire to provide new models of services such as e-learning as a flexible and almost openly available service and expanding the use of computers and its various software of all kinds.

The application of e-management is one of the strategies that have several benefits for the institution, such as lowering the cost of administrative procedures, lowering the time required to complete administrative transactions, providing completed operations with accuracy and objectivity, having the ability to quickly correct errors, and sharing documents with other departments as fast as possible, diminishing bureaucracy, and reducing the impact of personal relationships on accomplishing work also added other benefits to the application of e-management in institutions, such as the possibility of applying the business remotely, increasing and enhancing competitiveness, and being compatible with the developed world. The most important benefit of an e-management application is the immediate response to requests of clients and beneficiaries compared to paper transactions. It allows consumers and beneficiaries to take advantage of an organization's services at any time of day or night. The most important features of e-management are increased proficiency, accuracy, and visibility in the completion of transactions, decreased cost, simple procedure, and transparency. Hence, this study sought to examine the level of application e-management in the study context.

The application of electronic management in universities has been studied by several scholars, like Abu-Ashour and Deana (2013) conducted a study aimed at detecting the level of applying electronic management at Al-Yarmouk University. The study used the analytical descriptive method. Results showed that the level of applying electronic management at Al-Yarmouk University from the viewpoint of faculty members was high, while it was average from the viewpoint of managers. The application of e-management in the department of Umm Al Qura University in Mecca from the perspectives of administrators and the faculty staff members at the university. 441 administrators and faculty members made up the study's sample. The most prominent results were the degree of using e-management was moderate.

The study of Felck (2010) aimed at revealing the extent of using electronic management in managing administrative departments in universities. Results showed that 67% of department heads have adequate knowledge of computers and wish to apply it in their administrative work. The results also indicated a positive relationship between computer knowledge and the level of using it in electronic management. Identify the contribution of electronic management in developing administrative work in institutions of higher education. The study used the descriptive approach to achieve the study objectives. The findings revealed a statistically significant link between the evolution of administrative work and the usage of hardware and software, communication networks, and knowledge creators.

If transitioning to electronic management may help with the management of Albaha educational initiatives. The participants in the sample agree that using electronic management is important. The findings of the study also highlight the urgent need to

DOI:
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implement electronic management and identify potential roadblocks. An e-management approach in the university environment. The obtained results indicated that (50.75%) of the tested sample accepted the new environment of management and the other percentage (49.25%) is not satisfied with this for a variety of factors, including a lack of computer skills and familiarity with the internet, the community's culture restricts the use of e-management, and there is a lack of potential in terms of supplying the infrastructure required for the e-management project.

Alkhsabah (2017) aims to identify the reality of the use of electronic management and its impact on job performance at Tafila Technical University (TTU). According to the opinions of the sampling units, the application level of e-management is high, with an arithmetic mean of (4.10) and relative relevance of (82 percent). According to the findings, the usage of e-management has a statistically significant impact on job performance. Al-Jarrah (2018) identified the degree of applying e-Management in the Departments of the Ministry of Education in Jordan. The study sample included 307 administrative personnel from the Jordanian Educational Ministry's Center. The most important finding of the study is that the degree of e-management was high.

Waswas and Jwaifell (2019) aimed at identifying the level of applying electronic management at Al-Hussein Bin Talal University (AHU). At AHU, there were 249 administration members (academic managers, managers) in the study sample. The study tool concerned measuring the level of applying electronic management in three dimensions (administrative, materialistic, and technical). According to the findings, the level of electronic management implementation at AHU is average in administrative and technical dimensions, but bad in the materialistic dimension. Ismael and Abbas (2019) aimed to present the concept of (TAM) and e-management and use the two constructs of TAM (perceived ease of use and perceived usefulness) as perceptual determinants for the University of Duhok's attitudes toward implementing e-management. The study's findings revealed that the majority of respondents were enthusiastic about implementing e-management.

Concerning obstacles that face by applying e-management, Seresht *et al*. (2008) aimed to review and analyze the barriers to e-management in Iran. Descriptive and survey methods are used in this study. The findings of this paper show that cultural, environmental, and organizational factors are the main factors preventing the implementation of e-management in Iran, out of 25 factors classified into six categories: managerial, humanistic, cultural-social, organizational-structural, technical technological, and environmental factors.

The study Identify the barriers to implementing electronic management in Palestinian universities. A descriptive survey strategy was used in this investigation. The findings indicate that Palestinian universities are making significant steps to integrate electronic management, but that there are organizational, technological, human, and budgetary barriers that may arise during the implementation of electronic management in Palestinian universities. Also, conducted a study aimed to detect the relationship between organizational variables and the application of e-Management in Palestinian universities. The sample consisted of 161 faculty staff members. The results indicated that there is a lack of legislation and laws needed for applying e-management as well as a lack of employee training for applying e-management.

Hajaia and Roud (2014) sought to determine the obstacles to applying to e-management at Tafila technical university from the faculty staff members' perspectives. A total of 130 faculty members were included in the study. The findings showed that human obstacles were in the first rank, followed by financial obstacles and technical obstacles respectively, while organizational obstacles were in the last rank. However, all the obstacles were of a high degree.

DOI:
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The goal of AlOqlah (2021) was to evaluate the extent to which electronic management is used at Imam Abdul Rahman bin Faisal University and to identify the challenges that it faces. The total number of participants who took part in this study was 285. In this study, a quantitative research methodology was used, and the participants were given a customized questionnaire to fill out. The findings revealed that e-management is being used effectively at the university. Also, the results revealed that the human obstacle is the most important obstacle among other obstacles, followed by the technical and financial obstacles, while the organizational obstacles came in the last rank.

Organizations often face some challenges, such as the need to keep pace with technological developments to achieve high performance and manage their business efficiently free from time-consuming procedures. All organizations must restructure their administrative structures to keep up with technological advancements and efficiently deal with the current era's changes. Electronic management is one of the most important modern systems, which is considered a contemporary entrance to develop and update organizations' methods and procedures. E-management is a dynamic, advanced, and interactive system with highly connected productivity that extends beyond the boundaries of a company to incorporate the entire world. E-management is important since it saves time, effort, and money and it improves the relationship between an organization and clients, where the exchange of information is performed faster at a cheaper cost.

As a result of that, the administrators in universities are required to use modern administrative approaches in their work especially e-management due to the growing demand for rapid completion of administrative work and facilitating communication between workers inside the universities and between the university administration and the external community (Hajaia & Roud, 2014; AlOqlah, 2021).

Despite the efforts made in this field, the applications of e-management in university administration are still below the desired level, Ellatif and Abdulmutalib (2013) mentioned that there are limitations to the application of e-management in the Arab environment. Also pointed out that employees in universities need to raise their awareness about e-management and employ it in their work. As a result, the following research issues are addressed in this study.

(i) What is the level of applying electronic management at the Faculty of Education at the University of Khartoum as perceived by its faculty members?
(ii) What are the obstacles that hinder applying electronic management at the Faculty of Education at the University of Khartoum as perceived by its faculty members?

2. METHODS

The investigation was conducted using survey research methods. In quantitative research, survey research designs are methods in which investigators give a survey to a sample or the full population of people to describe the population's views, beliefs, behaviors, or attributes. Survey research was used in this study because of the topic or problem under study not much is known yet about it. So, the researchers want to identify characteristics, frequencies, and categories of the variable of interest at the faculty of education, University of Khartoum.

Therefore, from the total population 239 of staff members, a sample size of 30 respondents was optimal for this study, which represents (12.50%). The staff members were selected by

DOI:
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simple random sampling because in this type of all members of the population stood a chance of being selected.

To answer the research questions, the researchers developed a questionnaire consisting of three dimensions: e-planning, e-organizing, and e-controlling. Respondents were asked to rate on a three-point Likert scale (1 = disagree, 2 = partially agree, and 3 = agree) that was used for all items under e-management dimensions, which comprises 15 items (three items for each dimension of e-management). In addition to that, the respondents were asked to respond on 10 items about the obstacles that face e-management on the same three-point Likert scale.

The reliability of the questionnaire was assessed by using Cronbach's alpha coefficient, and the result of the reliability for the overall questionnaire was 0.94. Stated that high values of alpha indicate that the items are highly correlated with true scores. This means that the result of the reliability was acceptable; therefore, the questionnaire was valid to be applied. The data collected was analyzed using one means and standard deviations.

3. RESULTS AND DISCUSSION

3.1. Demographic characteristics of respondents

The demographic information of the respondents has been presented and analyzed using descriptive statistics. This has been displayed in **Table 1**.

As depicted in **Table 1**, the distribution of participants according to sex shows that the majority of the respondents (56.7%) were females, while males represented 43.3%. According to academic rank, the majority of the staff were lecturers (46.7%), and then assistant professors (33.3%). The fewer respondents were associate professors (6.7%), and teaching assistants (13.3%). Most of the staff members (40.0%) their years of experience between 5 to 10 years, (36.7%) experience ranges over 10 years, and (23.3%) of staff members their experience of fewer than 5 years. Hence, the study sample was characterized by a good level of demographic information.

Table 1. Background information of the respondents.

Variables		Frequency	Percentage
Gender	Male	13	43.3
	Female	17	56.7
	Total	30	100.0
Academic rank	Associate professor	2	6.7
	Assistant professor	10	33.3
	Lecturer	14	46.7
	Teaching Assistants	4	13.3
	Total	30	100.0
Years of service	Less than 5	7	23.3
	5 – 10	12	40.0
	Over 10	11	36.7
	Total	30	100.0

3.2. Study scale

To determine the scale adopted in this study, the length of the cells in the three-Likert scale was determined by calculating the range between the scores of the scale (3-1= 2) and then dividing it by the highest value in the scale to get the length of the cell, i.e. (2/3= 0.67), then

DOI:
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this value was added to the lowest value in the scale (the beginning of the scale is "1"). Thus, the length of the cells became as shown in **Table 2**.

Table 2. The scale of the study.

No.	Cell length	Level of the response
1	1.00-1.67	Low
2	1.67-2.34	Moderate
3	2.34-3.00	High

3.3. The level of applying e-management at the faculty of education, University of Khartoum

To answer the first question of the study, the researchers used arithmetic means and standard deviations for each dimension of the e-management application. To interpret the results, arithmetic means were adopted based on **Table 2** and the results as shown in **Table 3**.

Table 3. Means and standard deviations for E-management dimensions.

No	Dimension	Mean	SD	The rank of the dimension	Level of application
1	Electronic planning	2.29	0.81	1	Moderate
2	Electronic organizing	2.19	0.64	2	Moderate
3	Electronic controlling	1.61	0.75	3	Low
	Total	**2.03**	**0.73**		**Moderate**

The mean and standard deviations were computed to investigate the extent of application E-management dimensions at the Faculty of Education at the University of Khartoum as perceived by its faculty members. As shown in **Table 3**, the findings revealed that the level of two dimensions of e-management (e-planning and e-organizing) was moderate at mean scores (M= 2.29, SD= 0.81; M= 2.19, SD= 0.64) respectively. Besides the level of e-controlling was low at M= 1.61, SD= 0.75. According to these findings, the ranking of applying the dimensions came as follows e-planning, e-organizing, and then e-controlling.

On the other hand, the composite level of applying e-management at the Faculty of Education at the University of Khartoum was moderate at M= 2.03, SD= 0.73. This result can be explained by the fact that the e-management does not get enough concern from the upper administration in the university and the faculty.

The overall result of the study agrees with the result of Waswas and Jwaifell (2019) aimed at identifying the level of applying electronic management at Al-Hussein Bin Talal University (AHU). According to the findings, the level of electronic management implementation at AHU is average in administrative and technical dimensions, but bad in the materialistic dimension. The application of e-management in the department of Umm Al Qura University in Mecca from the perspectives of administrators and faculty staff members at the university. The study revealed that the degree of using e-management was moderate.

Differing from the result of this study Al-Jarrah (2018) identified the degree of applying E-Management in Departments of the Ministry of Education in Jordan. The study's most significant finding was that there was a high level of e-management. Also, Abu-Ashour and Deana (2013) conducted a study aimed at detecting the level of applying electronic management at Al-Yarmouk University. From the perspective of faculty members, the level

DOI:
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of adopting electronic management at Al-Yarmouk University was high. In addition to that, Alkhsabah (2017) aimed to identify the reality of using electronic management and its impact on job performance at Tafila Technical University (TTU). According to the opinions of the sampling units, the application level of e-management is high, with an arithmetic mean of (4.10) and relative relevance of (82 percent).

In more detail, the researchers computed the means and standard deviations for the items of each dimension and the results as shown in the tables under.

3.4. Level of applying e-planning

To determine the level of applying e-planning, the means, and standard deviations for each item of measures were computed, and the results as shown in **Table 4**.

Table 4. Means and standard deviations for e-planning dimension.

No	Item	Mean	SD	Rank of the item	Level of application
1	The College of Education administration uses electronic devices to formulate study programs.	2.13	0.82	4	Moderate
2	The College of Education administration enters basic data for students through the computer.	2.63	0.72	1	High
3	The College of Education administration encourages the use of electronic devices in teaching.	2.33	0.76	3	Moderate
4	The administration of the College of Education relies on human and technical elements in running the examinations.	2.43	0.82	2	High
5	The identity of the examinees is verified by the personal data on the computer.	1.93	0.91	5	Moderate
	Total	**2.29**	**0.81**		**Moderate**

It is clear from **Table 4**, the mean scores ranged between (2.63-1.93), and the aggregate mean score amount (2.29), thus the level of applying the e-planning as a whole was moderate. Also, **Table 4** revealed that two items from this dimension were high, and the other three were moderate. The item "The College of Education administration enters basic data for students through the computer" got first rank and a high level of application. On the other hand, the item "The identity of the examinees is verified by the personal data on the computer" has come in the last rank with a moderate level of application.

The result of this study seems to agree with the result of Felck (2010) aimed at revealing the extent of using electronic management in managing administrative departments in universities. Results showed that 67% of department heads have adequate knowledge of computers and wish to apply it in their administrative work. The results also indicated a positive relationship between computer knowledge and the level of using it in electronic management.

DOI:
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3.5. Level of applying E-organizing

To examine the level of applying e-organizing, the means and standard deviations for each item were computed, and the results as summarized in **Table 5**.

Table 5. Means and standard deviations for e-organizing dimension.

No	Item	Mean	SD	Rank of the item	Level of application
1	The student records are organized and distributed through the computer.	2.50	0.73	3	High
2	The student admission system is done through the online portal of the Registration Department.	2.66	0.61	1	High
3	The attendance and absence of students are monitored by computer.	1.33	0.60	5	Low
4	Accounts management depends on the computer in organizing financial resources.	2.56	0.50	2	High
5	The college departments' administration uses technical devices in its communication with senior management.	1.93	0.78	4	Moderate
	Total	**2.19**	**0.64**		**Moderate**

Table 5 illustrates that the mean scores ranged between (2.66-1.33), and the aggregate mean score amount (2.19), thus the level of applying the e-organizing as a whole was moderate. The item "The student admission system is done through the online portal of the Registration Department" was the first rank with the high level of application at (M= 2.66, SD= 0.61). The last rank was the item "The attendance and absence of students are monitored by computer" with a low level of application at (M=1.33, SD= 0.60).

The study also indicates that the college departments' administration uses technical devices in its communication with senior management. In line with this, identify the contribution of electronic management in developing administrative work in institutions of higher education. The findings revealed a statistically significant link between administrative work development and the utilization of hardware and software, communication networks, and knowledge creators.

3.6. Level of applying e-controlling

To determine the level of applying e-controlling, the means and standard deviations for each item were computed, and the results as shown in **Table 6**.

From **Table 6**, the mean scores ranged between (1.90-1.33), and the aggregate mean score amount (1.61), thus the level of applying the e-controlling as a whole was low. **Table 6** also revealed that three items were at a low level of application, and two were moderate. The item "The electronic control process is carried out by the regulations and laws laid down by the higher management" was the first rank with a moderate level of application at (M= 1.90,

DOI:
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SD= 0.80). The last rank was the item "The college administration uses surveillance cameras during exams to monitor students" with a low level of application at (M=1.33, SD= 0.66).

Table 6. Means and standard deviations for e-controlling dimension.

No	Item	Mean	SD	Rank of the item	Level of application
1	The college administration relies on electronic monitoring as a means to follow up on implementation and achieve goals.	1.86	0.90	2	Moderate
2	The college administration monitors the performance of faculty members in the execution of day-to-day work within the college.	1.53	0.73	3	Low
3	The college administration uses electronic monitoring to evaluate employees' performance.	1.43	0.68	4	Low
4	The college administration uses surveillance cameras during exams to monitor students.	1.33	0.66	5	Low
5	The electronic control process is carried out following the regulations and laws laid down by the higher management.	1.90	0.80	1	Moderate
	Total	**1.61**	**0.75**		**Low**

3.7. Obstacles that Face e-management

Identifying the obstacles that face the application of e-management in the Faculty of Education, University of Khartoum was the second research question set in this study. To this end, means and standard deviations were computed and the result is shown in **Table 7**.

The mean and standard deviations were computed to investigate the obstacles of application e-management dimensions at the Faculty of Education at the University of Khartoum as perceived by its faculty members. As shown in **Table 7**, the findings revealed that most of the items got high responses except three items came at a moderate level, and one item at a low level. The item "Poor infrastructure of the internet and power outages" obtained the first rank with a high-level response. Whereas the item "The upper management does not support the idea of switching to the application of electronic management" got the last rank at the low-level response. The findings in **Table 7** also show the aggregate level of the obstacle was high at (M= 2.64, SD= 0.60).

The result of this study supported an e-management approach in the university environment. The obtained results indicated that (49.25%) are not satisfied with this environment for many reasons such as lack of the use of a computer, lack of familiarity with the internet, the community's culture is limited in its usage of e-management, and there is a lack of potential in supplying the infrastructure required for the e-management project.

Performed research in Palestinian universities to see if there was a link between organizational characteristics and the use of e-management. The findings revealed that there is a lack of regulations and laws necessary for implementing e-management, as well as a lack of employee training in this area.

DOI:
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Furthermore, Hajaia and Roud (2014) sought to determine the obstacles to applying to e-management at Tafila technical university from the faculty staff members' perspectives. The study found that all the obstacles were of a high degree. They also showed that human obstacles were in the first rank, followed by financial obstacles and technical obstacles respectively, while organizational obstacles were in the last rank. The study identifies the barriers to implementing electronic management in Palestinian universities.

Table 7. Means and standard deviations for e-management obstacles.

No	Item	Mean	SD	Rank of the item	Level of obstacle
1	The administrators are unready psychologically and professionally to implement electronic management.	2.43	0.77	6	High
2	Lack of allocating financial resources to train administrators to implement electronic management.	2.56	0.63	4	High
3	The unwillingness of workers to switch from the application of traditional management to electronic management.	1.93	0.74	9	Moderate
4	The current structure is inadequate to shift from the application of traditional management to electronic management.	2.03	0.72	8	Moderate
5	The upper management does not support the idea of switching to the application of electronic management.	1.60	0.77	10	Low
6	There is a shortage of technical personnel that can deal with electronic management.	2.70	0.47	2	High
7	Poor infrastructure of the internet and power outages.	3.00	0.00	1	High
8	Unavailability of training courses on modern technologies and devices for college employees.	2.63	0.49	3	High
9	Resistance of some administrative leaders to using modern technology.	2.06	0.78	7	Moderate
10	The difficulty of having an integrated database to achieve the goal of electronic transformation.	2.50	0.68	5	High
	Total	**2.64**	**0.60**		**High**

Results revealed that there are organizational, technical, human, and financial obstacles that might appear during the application of electronic management in Palestinian

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universities. AlOqlah (2021) aimed to identify the obstacles facing its application. The findings found that organizational constraints are small and that among other barriers; the human barrier is the most important, followed by technical and financial difficulties, with organizational barriers in the last place.

4. CONCLUSION

This study aimed to assess the level of applying electronic management at the Faculty of Education at the University of Khartoum as perceived by its faculty members. The study employed a survey research design by using a developed questionnaire consisting of three dimensions: e-planning, e-organizing, and e-controlling. Also, the study sought to identify the obstacles that face the application of e-management at the Faculty of Education at the University of Khartoum.

The results indicate that the level of applying e-planning and e-organizing in the Faculty of Education, University of Khartoum was moderate, but the level of applying e-controlling was low in the Faculty of Education, University of Khartoum. The aggregate level of applying e-management in the Faculty of Education, University of Khartoum was moderate.

Also, the findings of the study confirmed that there are obstacles in the face applications of e-management at the Faculty of Education at the University of Khartoum represented in the poor infrastructure of the internet and power outages, there is a shortage of technical personnel that can deal with electronic management and unavailability of training courses on modern technologies and devices for college employees.

Based on the findings, the study forwarded the following recommendations to improve the level of e-management practices and to bring about University success. Thus, it is recommended the necessity of paying attention to providing the requirements of human and material electronic management within the college so that the college administration and the heads of the various departments can perform their work in the required manner. Also, it is important of spreading a culture of e-learning and e-management among members of the college community, including administrators, staff members, and students. Besides, identify the causes of problems that hinder the college administration's application of electronic management dimensions and work to solve them.

The main limitation of this study is that the data were gathered from one faculty of the University of Khartoum. Therefore, the findings of the study cannot be generalized to other faculties. But it can be used to compare with the results of other colleges, in other locations, and at some other time.

Therefore, future researchers can research other colleges of the University of Khartoum to increase the generalizability of the findings. Also, this study cannot be transferred to other organizations or other sectors because the sample of this study was focused on the university setting. Future studies can be conducted in other organizations and institutional settings.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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