RESEARCH ARTICLE

The Role of Electronic Management Systems in Improving the Quality of Academic Life

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Abstract

This study aims to explore the role of e-management systems in improving the quality of academic life from the perspective of permanent faculty members at the University of M'sila. To achieve the study's objectives, a questionnaire was developed and distributed to a random sample of 201 permanent professors working at the University of M'sila. Various statistical methods were employed to analyze the collected data. The results revealed a high level of agreement (77.8%) among permanent professors regarding the implementation of e-management systems within the university. Additionally, a statistically significant positive relationship was identified at a significance level of ($\alpha \leq 0.05$) between the implementation of e-management systems and the enhancement of academic life quality. The findings indicate a statistically significant impact of e-management systems on the quality of academic life, with the dimensions of e-management accounting for 61.5% of the variation in job performance. However, no statistically significant differences were observed in professors' perspectives based on demographic factors. Based on these findings, several recommendations were proposed to enhance and expand the use of e-management systems and transition all administrative and academic processes to electronic formats, aiming to improve the quality of academic life for permanent faculty members at the University of M'sila.

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1. Introduction

The swift progress in information technology and the internet has propelled institutions, whether commercial or educational, to maximize the use of modern systems to enhance operational efficiency at all levels. Among these developments, Electronic Management Systems (EMS) have emerged as one of the most effective tools for modernizing and streamlining administrative processes, providing a contemporary approach that meets the needs of institutions in an ever-changing world (Ramadani et al., 2023; Alruways, 2020). Administrative operations such as planning, organizing, coordinating, and decision-making are no longer reliant on traditional paper-based methods but have transitioned smoothly to electronic platforms, contributing to increased productivity, streamlined workflows, and enhanced decision-making efficiency, while also delivering services that exceed user expectations (Masoud, 2008).

Amid the technological revolution that the world is experiencing, it has become necessary to reshape the administrative structures of institutions to align with digital transformations, adopting EMS that facilitate the conversion of manual processes into digital workflows, known as paperless management (Khalouf, 2010; Abu Ashour & Namri, 2013). Recent studies have confirmed that the application of these systems significantly improves institutional performance by reducing costs, saving time, and enhancing the quality of administrative decisions (Alkhsabah, 2017). Moreover, using these systems facilitates immediate access to essential information and data, which positively impacts the performance of faculty members and their management of academic and administrative tasks more effectively (Ammari, 2018).

In higher education institutions, such as the University of M'sila, EMS has become essential for enhancing the quality of academic life. These systems help accelerate administrative processes, creating an organized environment that fosters academic excellence. Additionally, EMS plays an effective role in managing data by simplifying processes such as indexing, archiving, and retrieving information, thereby saving time and effort while reducing costs associated with traditional procedures (BelQasem, 2014).

For faculty members, EMS serves as an effective tool that simplifies the management of academic tasks with greater clarity and transparency, allowing them to focus more on their core responsibilities, such as teaching and research, rather than becoming entangled in complex bureaucratic procedures. As Kaplan (2003) indicated, performance measurement systems designed to reflect the unique strategy of each institution are critical for achieving excellence.

Similarly, EMS helps universities align their strategic goals with their operational capabilities, thereby enhancing academic success and increasing operational effectiveness (Richard et al., 2011; Ramadani et al., 2023).

The adoption of EMS in academic institutions represents a strategic shift that aligns with contemporary technological developments. By leveraging the capabilities of these electronic systems, universities can improve the efficiency of operations and academic performance, contributing to enhanced quality of life for both faculty members and students.

This study aims to explore the impact of EMS on improving the quality of academic life from the perspective of faculty members at the University of M'sila. It will analyze how these systems are used to enhance academic and administrative performance, identify the benefits and challenges that institutions face in implementing these systems, and provide insights on ways to optimize their use to support faculty members and improve the overall quality of education.

2. Problem of the Study

Academic institutions have undergone a radical transformation toward the use of Electronic Management Systems (EMS) to improve the quality of academic life. With the increasing reliance on technology, the implementation of EMS has become an effective means of organizing academic processes, contributing to the creation of a more advanced and interactive learning environment for both students and faculty members. However, the direct impact of these systems on the academic quality of life for faculty still requires in-depth research, as EMS helps reduce bureaucratic burdens and accelerates access to essential information, enabling faculty to focus on teaching and research. Thus, the problem of this study lies in determining the effectiveness of EMS in enhancing the quality of academic life for faculty members, particularly in light of the ongoing challenges faced by educational institutions in providing a flexible and advanced working environment.

3. Significance of the Study

This study is important for multiple reasons. Firstly, it explores the impact of EMS on the quality of academic life from the perspective of faculty members at the University of M'sila, enhancing the understanding of this important topic. Additionally, the study reflects the actual implementation of electronic management systems and their effects on faculty performance, raising awareness among faculty about the importance of improving their performance. Furthermore, it is expected to provide practical recommendations for university management to enhance the application of electronic systems, ultimately positively affecting the quality of educational services. Lastly, the study seeks to fill existing gaps in the

Arab academic literature regarding the connection between EMS and the quality of academic life, while also identifying challenges in implementation and proposing solutions to improve both academic and administrative performance.

4. Objectives of the Study

This study seeks to accomplish the following objectives:

- To define electronic management systems and their role in improving the quality of academic life at the University of M'sila.
- To assess the level of implementation of electronic management systems from the perspective of faculty members at the university.
- To identify the nature of the relationship between the implementation of electronic management systems and the improvement of academic life quality, as perceived by faculty members.
- To analyze the statistically significant differences in the level of implementation of electronic management systems and the improvement of academic life quality, according to the demographic variables of faculty members.

5. The Study Questions

This study seeks to ascertain the impact of electronic management systems on enhancing the quality of academic life for faculty members at the University of M'sila, through addressing the following main question: ***To what extent do electronic management systems contribute to improving the quality of academic life for faculty members at the University of M'sila?***

To answer this main question, several sub-questions arise:

- *What is the level of implementation of electronic management systems at the University of M'sila from the perspective of faculty members?*
- *How do electronic management systems impact the improvement of academic life quality from the perspective of faculty members at the University of M'sila?*
- *Are there statistically significant differences in the impact of electronic management systems on the academic life quality of faculty members based on demographic factors?*

6. Hypotheses Development and Study Model

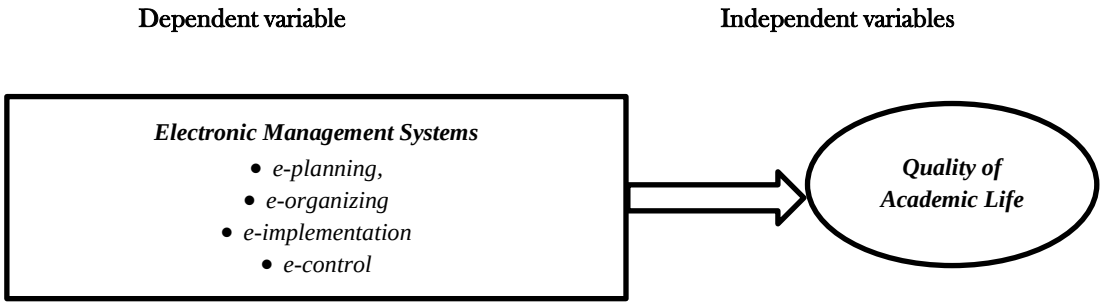
The current study is based on several hypotheses that will be tested to achieve its objectives:

a) Main Hypothesis One: There is no statistically significant effect, at the designated significance level (α≤0.05), of the dimensions of e-management systems (e-planning, e-organizing, e-implementation, and e-control) on the dimensions of academic quality of life (cognitive, social, and psychological) among faculty members at the University of M'sila.

- **H1:** No statistically significant association exists at the significance level (α≤0.05) between e-planning and AQL for faculty members.
- **H_2:** There is no statistically significant effect at the significance level (α≤0.05) for e-organizing and AQL among faculty members.
- **H_3:** There is no statistically significant influence at the significance level (α≤0.05) regarding e-implementation and AQL for faculty members.
- **H_4:** There is no statistically significant influence at the significance level (α≤0.05) for e-control and AQL among faculty members.

b) Main Hypothesis Two: No statistically significant differences exist at the significance level (α≤0.05) regarding respondents' perceptions as related to demographic characteristics (Gender, Academic Degree, Academic Rank, Years of Experience).

Figure-1. Research model.



Source: Prepared by the researchers based on previous studies.

7. Procedural Definitions

- **Electronic Management Systems (EMS):** These are technological systems used to organize and facilitate administrative and academic processes at the University of M'sila, contributing to the improvement of the AQL for faculty members. This will serve as a variable measuring the extent of the items presented in the study questionnaire.
- **Academic Quality of Life (AQL):** This refers to the level of well-being and satisfaction experienced by faculty members as a result of the academic environment and the support available to them, which is influenced by the implementation of EMS. This will serve as a variable measuring the extent of the items presented in the study questionnaire.
- **Faculty Members:** These are the academics working at the University of M'sila who possess expertise and opinions regarding the impact of EMS on the AQL. This will serve as a variable measuring the extent of the items presented in the study questionnaire.

8. Previous Studies

a) Study of Al-Khasi & Mudholkar (2023), entitled: "The Role of Electronic Management Systems in Improving the Quality of Educational Services". This study investigated how electronic management systems contribute to improving educational services in institutions. The findings demonstrated a strong positive correlation between e-management and improvements in productivity and communication between teachers, students, and parents.

b) Study of Al-Muhmadi (2020), entitled: "The Impact of Applying Oracle Systems on the Effectiveness of Human Resources Management in Jeddah". This study assessed the effectiveness of Oracle systems in human resources management at the General Authority of Civil Aviation in Jeddah. The study found that Oracle systems contributed positively to HR effectiveness by automating processes and improving employee productivity. However, it also highlighted the need for better training in modern technologies for employees.

c) Study of Alruways (2020), entitled: "The effect of e-management practices on improving the level of medical services in Saudi hospitals". This study focused on how e-management improved the quality of medical services in Saudi hospitals, particularly during the COVID-19 pandemic. The findings suggested that e-management systems enhanced service delivery by reducing response times, improving access to patient data, & optimizing resource management.

d) Study of McCarty (2019), entitled: "Measuring the Effect of Training in Implementing Project Management Information Systems". This study investigated the role of project management information systems (PMIS) in improving administrative efficiency in academic institutions. It demonstrated that proper training on PMIS enhances performance, reduces operational costs, and streamlines administrative tasks. The study highlighted the importance of continuous training in adapting to e-management technologies.

e) Study of OHIKERE, Mark (2019), entitled: " Impact of electronic management on the performance of employees in public organizations: A study of Nasarawa State University, Keffi Nigeria". This study examined the role of e-management in enhancing employee performance at Nasarawa State University. A structured survey was administered, & the results revealed a positive relationship between e-management & employee performance, with a significant impact on organizational efficiency. The study recommended expanding e-management training to further improve public administration.

f) Study of Bataineh (2017), entitled: "The Impact of Electronic Management on Employees' Performance – A Field Study on the Public Organizations in Jerash Governorate". This study examined the impact of e-management on employee performance in public organizations in Jerash, Jordan. It concluded that adopting e-management significantly improved employee performance & administrative quality by providing timely services and reducing operational costs. It recommended regular updates to e-management systems to ensure their efficacy.

g) Study of Al-Khsabah (2017), entitled: "Reality of Use of Electronic Management and its Impact on Job Performance in Tafila Technical University". This study sought to investigate the utilization of e-management and its effect on job performance at Tafila Technical University (TTU). The analysis indicated a significant degree of e-management implementation, accounting for 58.3% of the variance in job performance. The study concluded that e-management enhanced administrative processes and advocated for the continued development of enabling laws.

h) Study of Arraiz (2017), entitled: "Measuring the Performance of Electronic Management Systems: A Case Study". This study explored how electronic management systems improve decision-making and performance evaluation within academic institutions. It found that e-management enhances efficiency in performance appraisals and helps managers make data-driven decisions. The study emphasized the need for proper technical support and infrastructure to sustain the effectiveness of such systems.

i) Study of Al-Hassan (2010), entitled: "Electronic Management, Concepts, Characteristics, and Requirements". This theoretical study examined the broader concept of e-management & its implications for administrative functions. It highlighted the contribution of e-management to strategic decision-making, operational efficiency, & performance improvement, recommending further investment in IT infrastructure.

9. Literature review

9.1 Electronic Management Systems

The critical role of electronic management systems in today's rapidly advancing world has drawn significant attention from researchers and specialists. This progress necessitates leadership with a strategic vision to fully leverage these systems for success. Researchers like Al-Farji (2010), Al-Salmi (2006), and Rawash (2014) highlight that implementing electronic management systems helps institutions transition to a digital, efficient work environment. This shift improves performance, transparency, and customer service, while facilitating effective management and strategic control. Al-Salmi (2006) defines e-management as "the administrative process utilizing the Internet and business networks to plan, direct, and control resources without limitations to meet organizational goals." Similarly, Dayni (2010) describes it as "using ICT to conduct administrative activities electronically." This integration of traditional management functions with modern technology enhances efficiency and flexibility (Nemri & Abu Ashour, 2013).

9.1.1 The Concept of Electronic Management Systems

The term "electronic management systems" has been defined in various ways. According to Saad Ghaleb Ibrahim, electronic management systems are "an integrated system & an open functional & technical structure that encompasses all forms of e-businesses, indicating e-management, and e-government as a reference to public e-administration or the e-administration of government services directed towards citizens or other governmental institutions" (Ashour, 2010-2011).

Electronic management systems can also be defined as "the replacement of paper transactions with electronic processes through the extensive use of information technology, transforming public services into procedural office work processed according to pre-defined sequential steps" (Al-Salmi, 2006).

Another definition describes electronic management systems as "the use of diverse technological communication tools and information to manage the performance of public services electronically (Teleservices) with value, facilitating communication with service beneficiaries more democratically by allowing them to use electronic communication tools via a single portal" (Hammad, 2006-2007). It has also been defined as "an administrative procedure that leverages the internet and information networks for planning, directing, and controlling project and business resources to achieve organizational goals" (Rawash, 2014). Additionally, it has been described as "the use of electronic means and technologies in all practices, organization, procedures, commerce, or advertising, extending even to non-administrative matters" (Ahmed, 2009).

From the above, it can be concluded that the technical electronic management approach goes beyond mere automation of work processes within the institution. Instead, it adopts a methodology that integrates data and information across various departments. This approach utilizes data to achieve institutional goals through procedural practices characterized by flexibility and responsiveness to the rapid changes and emergencies that define our era. Therefore, electronic management systems can be defined as "the use of modern information and communication technologies to execute administrative tasks and functions, achieving integration between departments to meet institutional goals, optimize resources, and improve performance".

9.1.2 Principles of Electronic Management Systems

Based on the previous definitions, the principles of electronic management systems can be identified as follows (Al-Farji, 2010):

- Enhancing electronic infrastructure by providing necessary equipment, developing human competencies for e-leadership, and establishing organizational standards for technical systems. Preparing for procedural reforms, ensuring equal access to electronic services, and facilitating easy interaction for citizens across platforms.
- Creating a cultural environment that addresses language challenges and upholds community values, fostering confidence in electronic outputs.
- Establishing legal frameworks for e-management, including laws for electronic documentation and its role in decision-making and dispute resolution.

Additionally, (Forman, 2002) identifies core principles of e-management in the educational sector, emphasizing a focus on results, rapid response, & creativity. These principles guide institutions in transforming administrative practices into more effective, transparent, & accountable processes.

9.1.3 Characteristics and Objectives of Electronic Management Systems

The introduction of modern information & communication technologies represents a true revolution in management, as it alters the administrative & academic work style, enhancing its effectiveness & performance. The diversity of these technologies in e-governance has endowed electronic management systems with several characteristics & objectives, which can be outlined as follows:

a) Characteristics of Electronic Management Systems

The difference between traditional management and the electronic management model primarily lies in the use of information and communication technologies, giving the latter the following characteristics (Huthaifa & Sammani, 2013):

- Managing and overseeing departments as a centralized unit.
- Centralizing decision-making with enhanced monitoring.
- Collecting data from original sources, reducing decision-making barriers.
- Utilizing IT to build trust among employees.
- Promoting continuous learning, delivering instant information, and improving connectivity between employees and management for efficient resource management.

In addition to these characteristics, electronic management systems possess core features, including (Ahmed, 2009):

- **Increased accuracy:** As a modern mechanism in administrative development and organizational change, electronic management offers decisive advantages, including immediate processing of requests and high precision and clarity in completing transactions.
- **Cost reduction:** While electronic management initially requires considerable financial investments to support the transformation process, the adoption of electronic organizational models will eventually result in substantial financial savings, reducing the need for large workforces.
- **Simplified procedures:** Amid the need for modernization, most administrations have integrated information technologies into their services, utilizing their potential to meet citizens' needs in a simplified and swift manner, particularly given the diversity of the target groups for public organizations' services.
- **Speed and Accuracy:** Almutairi (2014) emphasizes that ICT facilitates faster processes, shortening the time required for communication and decision-making.
- **Transparency and Accountability:** As highlighted by Sakarneh (2009), e-management promotes higher levels of transparency & accountability, ensuring trust in administrative systems.

b) Objectives of Electronic Management Systems

The objectives of implementing electronic management systems can be summarized as follows (Al-Awamleh, 2003):

- Integrating and unifying organizational components into a cohesive system through information technology.
- Developing administrative processes & enhancing their effectiveness in serving institutional goals.
- Providing effective, supportive mechanisms for decision-making.
- Ensuring the accurate, sufficient, and timely flow of information with continuous availability.
- Reducing operating costs and achieving continuous improvement in productivity levels.
- Creating an appropriate organizational climate for comprehensive, continuous administrative research and development.

In addition to these objectives, electronic management systems aim to (Hammad, 2007):

- Improve governance & public affairs, creating a new relationship between citizens and the state.
- Enhance the effectiveness of administration and improve the quality of administrative operations through the use of modern technologies.
- Reduce duplication in complex procedures.

It can also be said that the primary objectives of e-governance are to improve service quality, enhance operational efficiency and support digital transformation efforts.

9.1.4 Requirements and Challenges of Implementing Electronic Management Systems

a) Requirements for Implementing Electronic Management Systems

Implementing e-management systems necessitates several essential requirements for their success. According to Khalouf (2010), these requirements can be categorized into three levels:

- **Technical Requirements:** These include designing the necessary software for e-management, building a strong infrastructure of computer networks, and ensuring the availability of required hardware and technologies.
- **Organizational Requirements:** Organizations need to restructure their departments, clearly define authorities and responsibilities, and develop appropriate performance measurement standards.
- **Human Requirements:** Employees need training in modern technologies, and their technical skills must be developed to efficiently interact with electronic systems.

b) Challenges of Implementing Electronic Management Systems

Despite the significant benefits of e-management systems, several challenges can hinder their implementation. As highlighted by Hassan, et al (2016), the main obstacles include:

- **Technical Challenges:** Inadequate technological infrastructure, weak system maintenance, and high equipment costs can obstruct successful implementation.
- **Administrative Challenges:** Poor strategic planning and the reliance on traditional management methods hinder digital transformation efforts.
- **Human Challenges:** The digital illiteracy of some employees and a lack of technical skills impede effective system utilization.
- **Financial Challenges:** The high costs associated with implementing electronic systems and limited resources to support digital transformation, as noted by Fleck (2010), remain significant barriers to adoption.

From the above, the researchers conclude that electronic management systems possess a range of characteristics that distinguish them from traditional management due to the provision of real-time information and increased interconnectedness between employees and upper management. These systems also have integrated objectives aimed at improving the quality of services provided and meeting the demands of modern organizations. Moreover, while e-management systems offer substantial benefits, institutions must address several technical, administrative, human, and financial challenges to ensure successful implementation.

9.2 Academic Quality of Life

Before defining the concept of academic quality of life in higher education institutions, it is essential first to understand the related concept of "quality of work life" or "quality of life at work." Accordingly, the general concept of quality of work life will be outlined, followed by a focus on the academic aspect to define the concept of academic quality of life.

9.2.1 Concept of Quality of Work Life

The prevailing quality of work life in institutions is considered one of the main sources of employee satisfaction and an indicator of the distinctive work environment that these institutions offer compared to others. Therefore, improving the quality of work life by enhancing the psychological, social, and environmental dimensions represents a social and ethical responsibility that institutions must uphold. Researchers in human resource management agree that "the institution's efficiency in bearing this responsibility can yield tangible results in terms of growth, prosperity, and adaptation to environmental demands. The success of the institution in providing a suitable quality of work life can help release the potential of its individuals, contributing to increased productivity both quantitatively and qualitatively" (Madi, 2014).

Additionally, the International Labour Organization (ILO) emphasizes that quality of work life not only influences employee satisfaction but also affects organizational competitiveness & sustainability in a global context (United Nations, 2020). The development of healthy work environments contributes to improved employee well-being & organizational productivity. In this sense, improving working conditions through flexible work arrangements and providing adequate social protections, such as health & retirement benefits, is crucial for achieving long-term growth (United Nations, 2020).

The term "quality of work life" was first introduced in 1972 during the International Labor Relations Conference. Since the mid-1980s, the focus on quality of work life programs has increased, emphasizing both internal and external customer needs.

Abu Halawa noted that quality of life is clearly demonstrated through a balance between physical, psychological, and social aspects, as well as an individual's satisfaction with life and positive presence. This is because quality of life reflects an appropriate level of psychological adjustment resulting from individuals' societal living conditions. Quality of life is linked to self-perception, which in turn influences how individuals evaluate various aspects of life, such as education, work, living standards, and social relationships. Quality of life is defined as "an individual's sense of satisfaction and happiness and their ability to meet their needs through an enriched environment and enhanced services in the health, social, and psychological fields, along with effective time management and utilization" (Mansi & Kazem, 2006).

Quality of work life can be defined as "a set of systems and programs related to improving and developing various aspects of the organization's human capital, which in turn affect individuals' work life and their social, cultural, and health environments, ultimately reflecting positively on employees' job performance and contributing to achieving the organization's goals as well as those of the individuals and all related parties" (Mansi & Kazem, 2006).

It is also defined as "an approach that considers employees as assets of the organization rather than costs. This approach assumes that employees perform better when allowed to manage their work independently and participate in decision-making, which motivates them to meet their physiological as well as economic needs" (Indumathy & Kamalraj, 2012).

Moreover, quality of work life is defined as "a set of integrated, planned, and continuous processes aimed at improving various aspects that affect the work life of employees and their personal lives, which in turn contributes to achieving the strategic objectives of the institution, its employees, and its learners" (Jad Al-Rab, 2008).

It is also defined as "good working conditions, appropriate supervision, a degree of job challenge and interest, in addition to work relationships that allow a degree of participation in decision-making and a sense of having a role in achieving organizational outcomes" (Werther & Davis, 2002).

From the above, it can be said that the quality of work life includes factors such as work-life balance, good supervision, developmental opportunities, effective communication, and trust and appreciation from managers and colleagues. It also includes other aspects such as wages, benefits, and a safe and healthy environment. Therefore, quality of work life can be defined as: "A suitable work environment that enhances job satisfaction and security, affects employees' professional and personal lives, and positively reflects individual work performance, ultimately influencing the overall performance of the organization."

9.2.2 Concept of Academic Quality of Life (QL)

The quality of work life (academic) in universities is of great importance, given that its outcomes, whether positive or negative, significantly impact the performance of faculty members and university employees working within a large system. This, in turn, affects the largest higher education institutions in any society (Jad Al-Rab, 2008).

The World Health Organization (WHO) defines (QL) as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (WHO, 1996). This definition highlights the subjective nature of (QL), which can vary depending on personal and cultural contexts. When applied to academic settings, academic quality of life refers to the ability of educators and students to achieve personal and institutional goals while maintaining a balance between work, life, and personal well-being.

Academic quality of life can be defined as "the extent to which a university professor feels satisfaction and happiness while performing their work, the quality of their tasks, their sense of personal and social responsibility, and effective self-control over their life and environment. It also involves meeting their psychological needs in effective and responsible ways, solving problems, having high levels of internal motivation, and making decisions. All of this results from the professor's interaction with a good university environment where they feel psychological security, the possibility of success, wise administration, and quality relationships with colleagues that provide social support" (Allam, 2012).

Furthermore, academic quality of life is defined as "the degree of happiness in areas related to job satisfaction, community participation activities, tasks, work, social relationships, learning, and training among faculty members in higher education institutions" (Al-Za'eber, 2012).

Studies from the United States demonstrate a strong link between the quality of academic life and faculty retention rates, as well as student success (Astin, 2001). Faculty members who report high levels of job satisfaction and a supportive academic environment are more likely to contribute to innovative research and student mentorship (Astin, 2001). This highlights the importance of creating supportive work conditions and an inclusive academic culture that fosters collaboration and well-being (Astin, 2001).

From the above, it can be said that academic quality of life encompasses several aspects, such as the quality of education, the academic and social environment, developmental and research opportunities, and the availability of resources necessary for academic success, in addition to balancing academic and personal life. Therefore, academic quality of life can be defined as: "A state of harmony and balance experienced by faculty members, resulting in satisfaction with the services provided by the university institution and the ability to adapt to various environmental changes, contributing to the achievement of their academic and personal goals".

9.2.3 Advantages of Focusing on Academic Quality of Life in Higher Education Institutions

Focusing on academic quality of life in higher education institutions leads to several advantages, summarized as follows (Al-Masri and Al-Agha, 2014):

- It leads to the happiness of academics and improves the services provided to students in both teaching and research fields.
- It increases institutional productivity both quantitatively and qualitatively while reducing costs, as universities' output is reflected in the quality of their graduates, research, and innovations.
- It attracts and retains qualified employees and intellectual capital within the institution. The intellectual capital of universities primarily consists of academics and other employees, in addition to relationship capital and structural capital.

- It enhances the ability of higher education institutions to develop and maintain a competitive advantage over a long period.
- It increases long-term investment in higher education institutions through investment in human resources.
- It reduces absenteeism rates.
- It fosters a sense of job security.
- It encourages employees to respect themselves through job satisfaction and humanitarian work.
- It increases freedom of self-expression.

9.2.4 Electronic Management Systems in Algerian Higher Education Institutions

As part of modernizing management and keeping pace with changes in the modern administrative environment, the Algerian Ministry of Higher Education and Scientific Research has worked to promote an administrative model aligned with the goals of the higher education and scientific research system. It is possible to start from the importance of information and communication technology as one of the foundations of electronic management systems and highlight its role in education, scientific research, and training, given the clear trend towards improving services provided to students and professors through the interconnection of several universities, in addition to providing the network with new methods of training.

The importance of transitioning to electronic management systems and providing opportunities for the success of university work methods has become a necessary requirement dictated by the political, economic, and social realities of modern nations, especially in light of the shift towards the concepts of e-learning, with the aim of implementing them practically within universities. Virtual universities and distance education are among the new paths outlined by developed countries.

Electronic management systems play a key role in achieving academic quality of life, as well as improving the administrative and financial systems of universities by enhancing planning processes, decision-making, organization, communication, coordination, motivation, guidance, control, and evaluation. They also help save time, effort, and money through deepening decentralization and autonomy. These systems provide high-quality information for strategic planning, decision-making, control, and evaluation. Additionally, they offer opportunities for collaboration and participation in collecting, analyzing, and using information across various sectors, departments, and divisions. The proper employment of electronic management systems also contributes to workflow efficiency and improving the quality of administrative and academic activities. They enable the quick processing of student results, certificates, and transcripts, reducing errors (Hussein, 2019).

10. Methodology of study

This study uses the descriptive-analytical approach, recognized as one of the most effective methods for measuring trends and understanding their levels, enabling a thorough exploration of the dimensions of the phenomenon and the factors influencing it. Additionally, the study employed a field research method using a questionnaire to gather the necessary primary data. The study relied on two main sources for data collection:

- **Secondary sources:** These include books, journal articles, and previous studies.
- **Primary sources:** This refers to data collected through a questionnaire specifically designed by the researchers for the purposes of this study.

10.1 Population and sample of the study

The study population comprises all faculty members at the University of M'sila in Algeria, totaling 1,644 professors, after excluding the pilot sample, which included 35 professors. The sample size was determined using the American Educational Research Association (AERA) approach, according to the following formula:

$$n=\frac{N\times p(1-p)}{\left[\left[N-1\times\left(d^2\div z^2\right)\right]+p(1-p)\right]}$$

Accordingly, the sample size was e aires were returned, representing a response rate of 75%. After excl for analysis, a total of 201 valid questionnaires were analyzed, representing 85.9% of the returned questionnaires and 64.42% of the study sample. This percentage is considered acceptable for scientific research purposes.

Table (1) delineates the distribution of the study sample based on the study factors, encompassing gender, academic qualification, academic rank, and years of experience in the role.

Table 1. Distribution of the study sample according to personal and professional variables.

Variable	*Categories*	*Frequency*	*Percentage*
Gender	Male	110	54.73%
	Female	91	45.27%
Academic Certificate	PhD	187	93.03%
	Master's	14	6.97%
Academic Rank	Professor	43	21.39%
	Associate Professor	112	55.72%
	Assistant Professor	46	22.89%
Years of Experience	Less than 5 years	119	59.20%
	5-10 years	31	15.42%
	More than 10 years	51	25.37%

Source: Prepared by the researchers using SPSS.V.27 outputs.

10.2 study tool

After reviewing the literature related to the use of Electronic Management Systems and Quality of Academic Life, and in alignment with the study's objectives, a questionnaire was developed to collect information, answer the study's questions, and test its hypotheses.

The questionnaire consists of three parts:

- **Part One:** This section delineates the characteristics of the study sample based on personal and occupational variables (Gender, Academic Degree, Academic Rank, Years of Experience).
- **Part Two:** This part focuses on the level of use of E-Management Systems. The items for this variable were designed based on references such as (Abu Ashour & Namri, 2012), (Badawi, 2013), (Shteiwi, 2013). This part consists of 40 items distributed across the following domains (e-planning, e-organizing, e-implementation, & e-control), each domain consists of 7 items.
- **Part Three:** This part addresses Quality of Academic Life. Given the absence of a comprehensive framework for the quality of academic life for faculty members in the literature, a specific questionnaire was developed for this study. The items for this variable were formed based on insights from Arab & international studies such as (Lent et al., 1994), (Sirgy et al., 2007), and (Alghamdi & McGregor, 2021). This variable consists of three domains: the cognitive dimension, the social dimension, and the psychological dimension. Each domain consists of six items.

10.3 Validity and reliability of the tool

The tool's validity has been confirmed by submitting it to a panel of management specialists to ascertain the clarity of the items and their pertinence to the designated dimensions. Based on their feedback, some items were removed and others were modified, the final version of the tool comprises 58 items allocated across the study dimensions.

Regarding the reliability of the tool, it was tested using two methods: the test-retest method and the internal consistency method (Cronbach's Alpha). The tool was applied to a pilot sample of 35 units, which was separate from the main study sample. The same sample was re-tested after two weeks to ensure consistency. Table (2) presents the reliability coefficients for both the test-retest method and internal consistency.

Table 2. Test-retest Methods & Internal Consistency for Study Dimensions

Variable	*Dimension*	*Test-re-test method*	*Internal consistency (Cronbach's alpha)*
Electronic Management Systems	e-planning	0.905	0.894
	e-organizing	0.918	0.903
	e-implementation	0.893	0.887
	e-control	0.921	0.914

Electronic Management Systems as a whole		0.945	
Quality of Academic Life	cognitive	0.934	0.933
	social	0.927	0.914
	psychological	0.908	0.885
Quality of Academic Life as a whole		0.938	0.931
Tool as a whole		0.963	0.952

Source: Prepared by the researchers using SPSS.V.27 outputs.

10.4 Statistical treatment

To address the study questions and evaluate its hypotheses, the following statistical procedures were employed utilizing SPSS v27:

- **Descriptive Statistic Measures:** Used to describe the characteristics of the study sample based on frequencies & percentages, & to answer the study questions using means & standard deviations.
- **Pearson Correlation Coefficient:** Applied to measure the degree of correlation &relationships.
- **Independent Samples T-Test:** Used to determine if there are statistically significant differences between two independent data groups.
- **One-Way Analysis of Variance (ANOVA):** Used to determine if there are statistically significant differences among three or more data groups.
- **Multiple Regression Analysis:** Employed to evaluate the validity of the study's hypotheses.
- **Variance Inflation Factor (VIF) and Tolerance Test:** Employed to ascertain the absence of multicollinearity among the independent variables.
- **Skewness Test:** Engaged to validate the normal distribution of the data.

11. Discussion of Results

11.1 Presentation & Discussion of Results in Light of the Responses of the Study Sample Regarding the Level of Application of EMS at the University of M'sila

To determine the level of application of e-management systems at the University of M'sila from the perspective of faculty members, arithmetic means, standard deviations, & percentages were calculated. In order to interpret these results, the following statistical standard was applied:

Table 3. Statistical standard for determining the level of application of EMS

Arithmetic Mean	*Corresponding Percentage*	*Level of Application of EMS*
From 1- less than 2.60	From 37% - 52%	Low
From 2.61- less than 3.40	From 53% - 68%	Medium
From 3.41- less than 5.00	From 69% - 84%	High

Source: Prepared by the researchers.

Below are the results obtained from the responses of the study sample, as illustrated in the following table:

Table 4. Arithmetic means, standard deviations, and percentages for the level of application of EMS at the University of M'sila from the perspective of faculty members

Rank	*Dimension*	*Arithmetic Mean*	*Percentage*	*Standard Deviation*	*Level*
2	e-planning	3.83	76.6%	0.811	High
4	e-organizing	3.13	62.6%	0.961	Medium
3	e-implementation	3.72	74.4%	0.803	High
1	e-control	4.05	81%	0.799	High
Overall Level of Application		3.89	77.8%	0.803	High

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 4 shows that the indicate that the arithmetic mean for the overall level of application of e-management systems was (3.89) with a standard deviation of (0.80), reflecting a high agreement on the level of application of e-management systems at the University of M'sila from the perspective of faculty members, with a percentage of (77%).

The researchers attribute this high level of application to the university administration's attention to providing faculty members with the necessary tools, such as suitable electronic systems, fast and secure internet networks, and properly equipped computers. However, there remains a need to speed up the provision of technical requirements, raise awareness regarding the introduction of new systems, and offer training workshops to help faculty members use modern e-management systems effectively.

- The **e-control** dimension ranked first with an arithmetic mean of (4.05) and a percentage of (81%), likely due to the significant role that electronic management systems have played in facilitating communication between the university administration and faculty members and enhancing the level of oversight and transparency.

- The **e-planning** dimension ranked second with an arithmetic mean of (3.83) and a percentage of (76%), which could be attributed to the role that electronic systems have played in speeding up the work process, facilitating planning, monitoring & increasing the productivity of faculty members.

- The **e-implementation** dimension ranked third with an arithmetic mean of (3.72) and a percentage of (74%), which may reflect the strong support for transitioning from traditional systems to electronic ones, thereby improving work efficiency and performance.

- The **e-organizing** dimension ranked last with an arithmetic mean of (3.13) and a percentage of (62%), possibly due to some challenges faculty members face in using electronic systems, which may be related to the need for further development of the university's technological infrastructure.

11.2 Hypotheses testing

Before proceeding with the regression analysis to evaluate the study hypotheses, Variance Inflation Factor (VIF) and Tolerance tests were conducted for each independent variable to assess multicollinearity. Furthermore, a Skewness test was implemented to confirm the assumption of normal distribution of the data. The results of these tests are summarized in Table 4.

Table 4. Testing Variance Inflation Factor (VIF), Tolerance, and Skewness

Variables	*Tolerance*	*VIF*	*Skewness*
e-planning	0.431	1.393	0.297
e-organizing	0.419	2.268	0.247
e-implementation	0.537	1.407	0.303
e-control	0.471	2.146	0.341

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 4 shows that the VIF values for all variables range from 1.393 to 2.268, which are well below the critical threshold of 10, indicating no multicollinearity concerns. Similarly, the Tolerance values, which range from (0.419 to 0.537), are all greater than 0.1, confirming the absence of multicollinearity. In terms of data distribution, the Skewness values fall between (0.247 and 0.341), all of which are less than 1, indicating that the data follows an approximately normal distribution.

- **First Hypothesis test:** To assess the impact of e-management systems on enhancing the academic quality of faculty members at M'sila University, a multiple regression analysis was performed to validate the proposed model for testing the hypotheses.

- **The first main hypothesis states:** There is no statistically significant effect, at the designated significance level ($\alpha \leq 0.05$), of the dimensions of e-management systems (e-planning, e-organizing, e-implementation, and e-control) on the dimensions of academic quality of life (cognitive, social, and psychological) among faculty members at the University of M'sila.

The analysis of variance was employed to evaluate the model's validity in testing this first main hypothesis. Tables 5, 6, and 7 shows this.

Table 5. Results of ANOVA for Testing Hypothesis 1

Model	*Degrees of Freedom*	*Sum of Squares*	*Mean of Squares*	*F Value*	*Significance Level F*
Regression	4	45.548	13.107		
Residual	196	33.095	0.891	75.309	0.000
Total	200	78.643			

**R Coefficient of Determination = 0.615*

***Predictors: (constant), e-planning, e-organizing, e-implementation, & e-control*

****Dependent variable: Quality of academic life.*

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 5 shows that the model is valid for testing the first main hypothesis, as indicated by the (F) value of (75.309), which is statistically significant at the approved significance level (α≤0.05). Additionally, the table reveals that the independent variables in this model account for (61.5) of the variance in the dependent variable (quality of academic life), demonstrating a relatively acceptable level of explanatory power.

This indicates a statistically significant impact of the independent variables on the dependent variable. The primary hypothesis can therefore be evaluated based on the model's validity.

Table 6. Results of Multiple Regression Analysis Testing the Effect of E- management systems on Quality of academic life

Dimension	*B*	*Standard Error*	*Beta*	*Calculated (t)*	*Significance Level (t)*
e-planning	0.191	0.077	0.195	3.054	0.002
e-organizing	1.174	0.055	0.148	2.761	0.005
e-implementation	0.230	0.069	0.299	4.287	0.000
e-control	0.321	0.094	0.307	4.339	0.000

*Statistically significant at significance level (α≤0.05) **Dependent variable: Quality of academic life

Source: Prepared by the researchers using SPSS.V.27 outputs.

The statistical results in Table 6 show that the variables (e-planning, e-organizing, e-implementation, & e-control) significantly impact the quality of academic life for faculty members.

The beta coefficients for these variables are (0.195; 0.148; 0.299; & 0.307), with corresponding (t) values of (3.054; 2.761; 4.287; & 4.339), all of which are statistically significant at the (α≤0.05) level. Therefore, the null hypothesis, which asserts no substantial impact of these characteristics of electronic management systems on cognitive, social, and psychological elements of academic life, is rejected, while the alternative hypothesis, which claims a considerable influence, is accepted.

This finding emphasizes that effective planning, organization, & implementation enhance faculty cognitive skills, foster professional relationships, & improve psychological well-being, particularly when evaluations are perceived as fair. Structured electronic management systems streamline academic responsibilities, encourage critical thinking, & facilitate collaboration, which are vital for a supportive academic environment. Moreover, fair evaluations boost faculty motivation and self-esteem, contributing to a sense of belonging within the academic community.

Table 7. Results of Stepwise Multiple Regression to Predict Quality of academic life Improvement through E-management systems Dimensions

Order of independent components in the prediction equation	*(R) Value Coefficient of determination*	*(t) Calculated Value*	*Significance Level (t)*
e-control	0.505	4.339	0.000
e-implementation	0.638	4.287	0.000
e-planning	0.671	3.054	0.002
e-organizing	0.695	2.761	0.005

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 7 shows that the e-control variable is the most significant, accounting for 50.5% of the variance in the dependent variable, as shown by the coefficient of determination. In contrast, the e-organization variable ranks lowest, explaining 69.5% of the variance in the quality of academic life. The sub-hypotheses were tested as follows:

- **First sub-hypothesis:** No statistically significant association exists at the significance level (α≤0.05) between e-planning and AQL for faculty members. An analysis of variance was utilized to evaluate the model's validity in testing this sub-hypothesis.

Table 8. Results of ANOVA to Verify the Validity of the Model for Testing First sub-hypothesis

Model	*Degrees of Freedom*	*Sum of Squares*	*Mean of Squares*	*F Value*	*Significance Level F*
Regression	4	47.519	14.694		
Residual	196	41.871	0.317	51.023	0.000
Total	200	89.390			

**R Coefficient of Determination = 0.574*

***Predictors: (constant), e-planning, e-organizing, e-implementation, & e-control.*

****Dependent variable: cognitive.*

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 8 indicates that the model is valid for evaluating the initial sub-hypothesis, exhibiting a F value of (51.023), which is statistically significant at the (α < 0.05) threshold. The independent factors in this model explain 57.4% of the variance in the dependent variable (cognitive), indicating substantial explanatory power. This indicates a statistically significant impact of the independent variables on the dependent variable. Consequently, the first sub-hypothesis can be evaluated based on the model's validity.

Table 9. Results of Multiple Regression Analysis in Testing the Effect of E-management systems on cognitive

Dimension	*B*	*Standard Error*	*Beta*	*Calculated (t)*	*Significance Level (t)*
e-planning	0.173	0.074	0.177	2.407	0.023
e-organizing	0.135	0.061	0.149	2.183	0.033
e-implementation	0.149	0.075	0.163	2.159	0.031
e-control	0.391	0.089	0.421	5.904	0.000

**Statistically significant at significance level (α≤0.05)*

***Dependent variable: cognitive*

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 9 demonstrates that the components (e-planning, e-organization, e-implementation, and e-control) affect the cognitive dimension, with beta coefficients of (0.173, 0.135, 0.149, and 0.391) accordingly; the associated (t) values are (2.407, 2.83, 2.159, and 5.904) respectively. These values are statistically significant at the predetermined significance level (α≤0.05). Thus, the null hypothesis positing no statistically significant effect of the dimensions of electronic management systems (e-planning, e-organization, e-implementation, and e-control) on cognition is rejected; the alternative hypothesis is accepted, demonstrating a statistically significant effect of these dimensions on cognitive processes. This result is anticipated, as planning, organization, execution, and evaluation are conducted within a cohesive system aimed at improving cognitive function. It ensures that the instructional staff are effectively guided in alignment with established educational standards and best practices to attain optimal learning results..

Table 10. Results of Stepwise Multiple Regression to Predict Cognitive through E-management systems Dimensions

Order of independent components in the prediction equation	*(R) Value* *Coefficient of Determination*	*(t) Calculated Value*	*Significance Level (t)*
e-control	0.513	5.904	0.000
e-implementation	0.549	2.159	0.031

e-planning	0.511	2.407	0.023
e-organizing	0.547	2.183	0.033

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 10 shows that the e-control variable ranks highest, accounting for (51.3%) of the variance in the dependent variable, as indicated by the coefficient of determination. Conversely, the e-organizing variable ranks lowest, explaining (54.7%) of the variance in cognitive

- **Second sub-hypothesis:** There is no statistically significant effect at the significance level (α≤0.05) of electronic management systems in social for faculty members at the University of M'sila. The results of the ANOVA were used to verify the validity of the model to test the second sub-hypothesis.

Table 11. Results of ANOVA for Testing Second sub-hypothesis

Model	*Degrees of Freedom*	*Sum of Squares*	*Mean of Squares*	*F Value*	*Significance Level F*
Regression	4	42.717	9.619		
Residual	196	58.193	0.854	47.237	0.000
Total	200	100. 910	-		

**R Coefficient of Determination = 0.507*

***Predictors: (constant), e-planning, e-organizing, e-implementation, and e-control*

****Dependent variable: Social*

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table11 shows that the model is valid for testing sub-hypothesis 2, as evidenced by an (F) value of (47.237), which is statistically significant at the (α ≤ 0.05) level.

Additionally, the independent variables in this model account for (50.7%) of the variance in the dependent variable, which reflects a reasonably acceptable level of explanatory power. This suggests a statistically significant effect of the independent variables on the dependent variable, thus allowing for the testing of hypothesis 2 based on the model's validity.

Table 12. Results of Multiple Regression Analysis in Testing the Effect of E-management systems on Social

Dimension	*B*	*Standard Error*	*Beta*	*Calculated (t)*	*Significance Level (t)*
e-planning	0.183	0.081	0.169	2.315	0.022
e-organizing	0.159	0.077	0.164	2.401	0.033
e-implementation	0.261	0.083	0.261	3.433	0.002
e-control	0.263	0.089	0.201	2.597	0.013

**Statistically significant at significance level (α≤0.05)*
***Dependent variable: Social*

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table12 shows that the variables (e-planning, e-organizing, e-implementation, and e-control) have a significant effect on Social. The Beta coefficients for these variables are (0.169; 0.164; 0.261and 0.201), respectively. Correspondingly, the T values are (2.315; 2.401; 3.433 and 2.597), which are all statistically significant at the (α≤0.05) level.

Thus, the null hypothesis is rejected (there is no statistically significant effect of the dimensions of e-management systems (e-planning, e-regulation, e-implementation, and e-control) on social acceptance for faculty members at the University of M'sila). We accept the alternative hypothesis (there is a statistically significant effect of the dimensions of e-management systems on social acceptance for faculty members at the University of M'sila). This outcome is expected, as e-management systems play a major role in enhancing collaboration for faculty members, improving communication, and streamlining administrative processes.

Table 13. Results of Stepwise Multiple Regression to Predict Social through E-management systems Dimensions

Order of independent components in the prediction	*(R) Value*	*(t)*	*Significance*

equation	*Coefficient of Determination*	*Calculated Value*	*Level (t)*
e-implementation	0.337	3.433	0.002
e-control	0.391	2.597	0.013
e-organizing	0.409	2.401	0.033
e-planning	0.435	2.315	0.022

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 13 shows that the e-implementation variable ranks first, accounting for (33.7%) of the variation in the variable based on the identification laboratory. Meanwhile, the electronic planning variable ranks last, explaining (43.5%) of the variance in the social dimension of academic life.

- **Third sub -hypothesis:** There is no statistically significant effect at the approved significance level (α≤0.05) of E-management on the psychological dimension of the quality of academic life (QAL) for faculty members at the University of M'sila. The results of variance analysis were used to confirm the validity of the model for testing this third sub-hypothesis.

Table 14. Results of ANOVA for Testing Third sub -hypothesis

Model	*Degrees of Freedom*	*Sum of Squares*	*Mean of Squares*	*F Value*	*Significance Level F*
Regression	4	39.135	9.459		
Residual	196	52.490	0.305	43.346	0.000
Total	200	91.26			

**R Coefficient of Determination = 0.573*

***Predictors: (constant), e-planning, e-organizing, e-implementation, and e-control*

****Dependent variable: Psychological*

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 14 shows that the model is valid for testing the third sub-hypothesis, as indicated by the (F) value of (43.346), which is statistically significant at the (α≤0.05) level. The table also shows that the independent variables in this model explain (57.3%) of the variance in the dependent variable (psychological dimension), which is considered a relatively acceptable explanatory power. This suggests a statistically significant effect of the independent variables on the dependent variable. Therefore, based on the model's validity, the third sub-hypothesis can be tested.

Table 15. Results of Multiple Regression Analysis in Testing the Effect of E-management systems on Psychological

Dimension	*B*	*Standard Error*	*Beta*	*Calculated (t)*	*Significance Level (t)*
e-planning	0.191	0.081	0.181	3.174	0.011
e-organizing	0.133	0.065	0.149	3.098	0.033
e-implementation	0.287	0.079	0.371	4.417	0.002
e-control	0.190	0.097	0.175	3.150	0.022

**Statistically significant at significance level (α≤0.05)*

*** Dependent variable: Psychological*

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 15 shows that the variables (e-planning, e-organization, e-implementation, & e-control) have an impact on the psychological dimension. The beta coefficients for these variables are (0.181, 0.149, 0.371, and 0.175), respectively, with corresponding (t) values of (3.174, 3.098, 4.417, and 3.150), all of which are statistically significant at the (α≤0.05) level. As a result, the null hypothesis is rejected (i.e., there is no statistically significant effect of the dimensions of e-management systems (e-planning, e-organization, e-implementation, & e-control) on the psychological dimension). Instead, the alternative hypothesis is accepted, which indicates that there is a statistically significant effect of the dimensions of e-management systems on the psychological dimension.

Table 16. Results of Stepwise Multiple Regression to Predict Psychological through E-management systems Dimensions

Order of independent components in the prediction equation	*(R) Value* *Coefficient of Determination*	*(t) Calculated Value*	*Significance Level (t)*
e-implementation	0.419	4.417	0.002
e-planning	0.432	3.174	0.011
e-control	0.447	3.150	0.022
e-organizing	0.460	3.098	0.033

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 16 shows that the e-implementation variable ranks first, explaining (41.98%) of the variance in the dependent variable according to the coefficient of determination. Additionally, the table indicates that the e-organizing variable ranks last, accounting for (46%) of the variance in the psychological dimension.

- **The 2nd main hypothesis states:** There are no statistically significant differences at significance level ($\alpha \leq 0.05$) of perceptions of respondents attributed to the demographic variables (gender, academic certificate, academic rank, and years of experience).

To test this hypothesis, multiple variance analysis has been used, where E-management systems is dependent variable, and demographic variables are independent variables. This is shown in Table 17.

Table 17. Multiple analysis of variance for the effect of (gender, academic degree, academic rank, years of experience) on E-management systems for faculty members at M'sila University

Source	*Dependent Variable*	*Sum of Squares*	*Degrees of Freedom*	*Mean Squares*	*F Value*	*Significance Level*
Gender	E-MS	0.493	1	0.493	2.031	0.197
Academic Degree	E-MS	0.311	1	0.311	0.917	0.228
Academic Rank	E-MS	0.088	2	0.044	0.085	0.810
years of experience	E-MS	0.097	2	0.048	0.228	0.733
Gender and Academic Degree	E-MS	0.127	1	0.127	0.311	0.491
Gender & Academic Rank	E-MS	0.374	2	0.187	0.509	0.709
Gender and years of experience	E-MS	2.285	2	1.142	3.237	0.048
Academic Degree & Academic Rank	E-MS	0.042	2	0.021	0.117	0.799
Academic Degree & years of experience	E-MS	2.061	2	1.029	2.484	0.078
Academic Rank &experience	E-MS	0.339	4	0.097	0.263	0.833

Gender, Academic Degree, & Academic Rank	E-MS	0.003	1	0.003	0.003	0.751
Gender, Academic Degree, & years of experience	E-MS	0.259	2	0.129	0.310	0.738
Gender, Academic Rank & years of experience	E-MS	1.204	4	0.371	0.806	0.609
Academic Degree, Academic Rank & years of experience	E-MS	0.797	4	0.186	0.413	0.835
Gender, Academic Degree, Academic Rank &years of experience	E-MS	0.378	2	0.189	0.371	0.721

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 17 shows that there is no statistically significant difference at the significance level (α≤0.05) related to (gender, academic degree, academic rank, or years of experience) regarding E-management systems for faculty members at M'sila University. However, Table 17 also shows statistically significant differences due to the interaction between gender and experience in E-management systems. To identify the specific variables responsible for these differences, arithmetic means and standard deviations were used, as presented in Table 18.

Table 18. Arithmetic means and standard deviations of the interaction between gender and experience in E-management systems for professors at the University of M'sila

Gender	*Experience*	*Arithmetic Mean*	*Standard Deviation*
Male	Less than 5 years	4.201	0.494
	5-10 years	3.975	0.889
	More than 10 years	4.267	0.461
Female	Less than 5 years	4.255	0.613
	5-10 years	4.399	0.679
	More than 10 years	4.131	0.543

Source: Prepared by the researchers using SPSS.V.27 outputs.

Table 18 shows that females with 5 to 10 years of experience have the highest arithmetic mean of (4.399) with a standard deviation of (0.679), while males with the same range of experience have the lowest arithmetic mean of (3.975) with a standard deviation of (0.889).

12. Discussion and conclusion

Electronic management systems are considered essential tools that enhance the efficiency of educational institutions by organizing administrative processes and improving communication and coordination among members. These systems significantly contribute to improving the academic and professional quality of life for individuals within institutions by reducing administrative overlaps and facilitating decision-making. Thanks to these systems, universities and educational institutions can achieve a higher level of performance and sustainable development by improving the planning, organizing, implementing, and monitoring of all administrative activities electronically.

This study reached several conclusions, which can be summarized as follows:

- The study results showed a relatively high agreement on the application level of the e-management systems' dimensions at the University of M'sila under study. The e-control dimension ranked first with a mean score of (4.05) and a high level, reflecting the significant emphasis on electronic control and monitoring of activities. The e-planning dimension ranked second with a mean score of (3.83) and a high level, indicating the role of effective electronic planning in enhancing academic performance. The e-implementation dimension ranked third with a mean score of (3.72) and a high level, showing the effectiveness of electronic implementation of activities. Finally, the e-organizing dimension had a mean score of (3.13) and a medium level, indicating a need for further development in electronic organizing.

- The study found a strong and positive correlation with statistical significance at the adopted significance level ($\alpha \leq 0.05$) between the dimensions of e-management systems (e-planning, e-organizing, e-implementation, e-control) and the academic quality of life for faculty members at the University of M'sila under study, with a correlation coefficient of (0.615), reflecting the positive impact of electronic management systems on academic quality of life.
- The study results also showed a statistically significant positive effect ($\alpha \leq 0.05$) between e-management systems and their dimensions (e-planning, e-organizing, e-implementation, e-control) and improving the academic quality of life for faculty members at the University of M'sila under study. The independent variables explain about (61.5%) of the variance in the dependent variable (academic quality of life), indicating a relatively acceptable level of explanatory power.
- The study also indicated that the independent variables account for (57.4%) of the variance in the cognitive dependent variable, which indicates relatively strong explanatory power. They account for (50.7%) of the variance in the social dependent variable, reflecting a reasonably acceptable level of explanatory power. They explain (57.3%) of the variance in the psychological dependent variable, which is a relatively acceptable explanatory strength.
- The study results showed no statistically significant differences at the significance level ($\alpha \leq 0.05$) related to (gender, academic degree, academic rank, or years of experience) concerning electronic management systems among faculty members at the University of M'sila under study.

13. Recommendations

This study recommended the following:

- **Enhancing Legislative and Regulatory Frameworks:** There is a need to develop and update the current laws and regulations to align with the advancements in electronic transactions generated by electronic management systems. This will ensure that these systems function within a legal framework that supports their growth and sustainability.
- **Providing Adequate Resources:** It is essential to allocate more financial, human, and technical resources to support the implementation of electronic management systems at the University of M'sila. This will empower both academic and administrative departments to fully integrate these technologies into their daily operations.
- **Encouraging Staff and Faculty Adoption:** Both administrative staff and faculty members at the University of M'sila should be encouraged to adopt electronic management systems on a larger scale. To promote widespread adoption, offering incentives-both financial and non-financial-could motivate high performers who excel in applying and utilizing these systems.
- **Conducting Training Workshops:** Regular training workshops should be organized for faculty members and administrative staff. These workshops would focus on keeping up-to-date with the latest developments in electronic management systems, thereby improving the quality of academic life specifically, and work-life quality generally, by fostering an environment of innovation and excellence.
- **Promoting a Culture of Continuous Learning:** It is vital to cultivate a culture of continuous learning within the university. Encouraging faculty and staff to engage with the latest technological advancements & offering them opportunities for professional development will not only enhance their personal growth but also improve the academic environment.
- **Developing Evaluation Metrics:** Implementing clear and effective evaluation metrics for measuring the impact of electronic management systems on academic performance and administrative efficiency can provide valuable insights. This will enable continuous improvement and ensure that the systems are meeting their intended goals in enhancing the quality of academic life.

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