



Ahcene Moualek

E-mail: ahcene.moualek@univ-relizane.dz

Orcid: <https://orcid.org/0009-0009-5745-5974>

Université Relizane of Argelia

Cita sugerida (APA, séptima edición).

Moualek, A. (2026). Electronic administration, occupational stress reduction, and public service quality: evidence from Algeria. *Revista Sociedad & Tecnología*, 9(S2), 837-848, DOI: <https://doi.org/10.51247/st.v9iS2.351>

==== o ====

Electronic administration, occupational stress reduction, and public service quality: evidence from Algeria

ABSTRACT

This study analyzed the role of electronic administration in reducing occupational stress and improving the quality of public service in the Regional Social Security Fund of Tizi Ouzou, Algeria. The objective was to determine whether digital administrative systems generated benefits for employees and users. A quantitative descriptive cross-sectional methodology was adopted. Data were collected through two structured questionnaires applied to 120 participants, including 60 employees and 60 clients. The information was processed using SPSS through frequencies and percentages. The results showed that employees perceived lower occupational stress, greater psychological comfort, and better task organization after the implementation of electronic administration. Likewise, clients reported high levels of satisfaction, improved communication, easier remote access to services, and better service quality. The highest agreement percentages were associated with work calmness among employees and communication efficiency among users. It was concluded that electronic administration significantly contributed to institutional modernization by improving internal work conditions and strengthening citizen-oriented services. The findings suggest that expanding digital administrative systems may enhance efficiency, transparency, and trust in public institutions.

Keywords: Electronic administration; occupational stress; quality of performance; public service; digitalization.

==== o ====

Administración electrónica, reducción del estrés laboral y calidad del servicio público: evidencia de Argelia.

RESUMEN

Este estudio analizó el papel de la administración electrónica en la reducción del estrés laboral y la mejora de la calidad del servicio público en el Fondo Regional de Seguridad Social de Tizi Ouzou, Argelia. El objetivo fue determinar si los sistemas administrativos digitales generaron beneficios para empleados y usuarios. Se adoptó una metodología cuantitativa, descriptiva y transversal. Los datos fueron recopilados mediante dos cuestionarios estructurados aplicados a 120 participantes, integrados por 60 empleados y 60 clientes. La información fue procesada mediante SPSS utilizando frecuencias y porcentajes. Los resultados evidenciaron que los

empleados percibieron menor estrés ocupacional, mayor comodidad psicológica y mejor organización de tareas tras la implementación de la administración electrónica. Asimismo, los clientes reportaron altos niveles de satisfacción, mejor comunicación, acceso remoto más fácil a los servicios y mayor calidad en la atención. Los porcentajes más altos de acuerdo se relacionaron con la tranquilidad laboral en empleados y la eficiencia comunicacional en usuarios. Se concluyó que la administración electrónica contribuyó significativamente a la modernización institucional al mejorar las condiciones internas de trabajo y fortalecer los servicios orientados al ciudadano. Los hallazgos sugieren que ampliar estos sistemas digitales puede incrementar la eficiencia, transparencia y confianza pública.

Palabras clave: Administración electrónica; estrés laboral; calidad del desempeño; servicio público; digitalización.

==== o ====

Administração eletrônica, redução do stress ocupacional e qualidade do serviço público: evidências da Argélia

RESUMO

Este estudo analisou o papel da administração eletrônica na redução do estresse ocupacional e na melhoria da qualidade do serviço público no Fundo Regional de Segurança Social de Tizi Ouzou, Argélia. O objetivo foi determinar se os sistemas administrativos digitais geraram benefícios para empregados e usuários. Foi adotada uma metodologia quantitativa, descritiva e transversal. Os dados foram coletados por meio de dois questionários estruturados aplicados a 120 participantes, incluindo 60 empregados e 60 clientes. As informações foram processadas no SPSS por frequências e percentuais. Os resultados mostraram que os empregados perceberam menor estresse ocupacional, maior conforto psicológico e melhor organização das tarefas após a implementação da administração eletrônica. Da mesma forma, os clientes relataram altos níveis de satisfação, melhor comunicação, acesso remoto facilitado aos serviços e melhor qualidade no atendimento. Os maiores percentuais de concordância estiveram relacionados à tranquilidade no trabalho entre empregados e à eficiência da comunicação entre usuários. Concluiu-se que a administração eletrônica contribuiu significativamente para a modernização institucional ao melhorar as condições internas de trabalho e fortalecer os serviços voltados ao cidadão. Os achados sugerem que a ampliação desses sistemas digitais pode aumentar a eficiência, transparência e confiança pública.

Palavras-chave: Administração eletrônica; estresse ocupacional; qualidade do desempenho; serviço público; digitalização.

==== o ====

INTRODUCTION

The accelerated development of information and communication technologies has transformed the way public institutions organize their internal processes and deliver services to citizens. According to Todoruț and Tselentis (2018), digital technologies have become a strategic instrument for modernizing administrative systems and improving institutional responsiveness. In the same direction, Di Giulio and Vecchi (2023) argued that public sector digitalization strengthens governance capacity through more agile procedures, improved coordination, and broader access to services. Therefore, electronic administration has emerged as a key component of contemporary public management reforms.

In many countries, the transition from traditional administration to electronic administration has been associated with greater efficiency, transparency, and citizen satisfaction. Androniceanu and Georgescu (2023) demonstrated that digital public administration is positively related to government effectiveness in European countries. Likewise, Latupeirissa et al. (2024) emphasized that digitization initiatives improve service delivery by reducing

delays, simplifying procedures, and facilitating communication between institutions and users. These benefits explain the growing international interest in digital governance models.

In the Arab region, public institutions have increasingly adopted electronic systems to respond to social and economic transformations. Sahi (2025) analyzed e-governance experiences in Arab countries and concluded that digital communication mechanisms contribute to strengthening trust between governments and citizens. Similarly, Waswas and Jwaifell (2019) found that electronic management systems improve organizational excellence by optimizing administrative coordination and service quality. Consequently, digital transformation is no longer optional, but a strategic necessity for institutional competitiveness and legitimacy.

Algeria has made significant efforts to modernize its administrative structures through digital reforms aimed at improving public sector performance. Abdelwaheb (2025) stated that e-government in Algeria has become a pillar for enabling citizen-centered services in the digital age. Likewise, Berkane and Rais (2025) observed that the Algerian experience reflects both important advances and persistent structural challenges in technological implementation. These developments reveal the country's commitment to aligning administration with international standards of efficiency and accessibility.

Despite this progress, several obstacles continue to affect the consolidation of electronic administration in Algeria. Hammal (2025) identified infrastructure limitations, uneven digital skills, and resistance to change as relevant barriers to the digital transition process. In addition, Madani and Madani (2025) highlighted the importance of social inclusion and equal technological access to avoid widening territorial and socioeconomic gaps. For this reason, evaluating the real impact of electronic administration requires considering both technological achievements and implementation constraints.

Among the public sectors most influenced by digital modernization is the social security system, which requires continuous interaction with workers, retirees, and beneficiaries. Efficient digital platforms can reduce paperwork, waiting times, and unnecessary travel, while also improving institutional performance. According to Abdelwaheb (2025), citizen-oriented electronic services are especially valuable in sectors with high demand and permanent administrative flows. Therefore, the social security field offers a relevant context for examining the practical effects of electronic administration.

Another important dimension of digital administration concerns its internal effect on employees and organizational climate. Plesner, Justesen, and Glerup (2018) explained that digitized public organizations often experience changes in work routines, communication patterns, and task management. When properly implemented, these transformations may reduce professional stress associated with repetitive manual procedures and document overload. At the same time, they can improve motivation by allowing staff to focus on higher-value activities rather than bureaucratic routines.

Based on these considerations, the present study analyzes the role of electronic administration in reducing professional stress and improving the quality of public service in the Algerian social security context. The research seeks to understand whether digital administrative systems contribute to more efficient service delivery and better working conditions. This objective is relevant because institutional modernization depends not only on technology adoption, but also on its capacity to generate tangible benefits for employees and citizens alike.

THEORETICAL FRAMEWORK

Electronic administration refers to the use of digital technologies, information systems, and online communication tools to manage institutional processes and provide services efficiently. According to Waswas and Jwaifell (2019), electronic management improves coordination among departments, accelerates decision-making, and enhances service responsiveness. In the same line, Papanthymou and Darra (2018) stated that digital administrative systems

contribute to organizational quality by standardizing procedures and reducing operational inconsistencies. Therefore, electronic administration represents a structural evolution of traditional management models.

From a functional perspective, electronic administration integrates databases, automated workflows, digital platforms, and remote communication channels. Latupeirissa et al. (2024) explained that these instruments transform public service delivery by simplifying citizen interaction and reducing physical dependence on administrative offices. Likewise, Di Giulio and Vecchi (2023) emphasized that technological adoption in the public sector depends on institutional capacity, leadership, and governance mechanisms. Consequently, digital transformation is both a technological and organizational process requiring strategic planning.

One of the principal benefits associated with electronic administration is operational efficiency. Aithal and Maiya (2023) argued that service quality improves when institutions redesign academic and administrative processes through digital innovation. Similarly, Tapping and Shuker (2018) noted that process mapping and workflow optimization reduce redundant tasks, delays, and resource waste. In public organizations, these advantages can translate into faster responses, improved file management, and more reliable citizen services.

Transparency is another central dimension of electronic administration. Ongaro and Van Thiel (2018) maintained that modern public management increasingly depends on accountability systems capable of monitoring institutional actions. In the same sense, Favoreu, Carassus, and Maurel (2016) observed that strategic management in the public sector requires collaborative and transparent mechanisms to gain public trust. Digital systems facilitate traceability, supervision, and standardized procedures, which helps reduce discretionary practices and administrative irregularities.

The concept of quality of public service is closely linked to citizens' perceptions of efficiency, accessibility, reliability, and fairness. Rowe et al. (2018), in a systematic review of service improvement strategies, concluded that organizational reforms and evidence-based management positively influence service outcomes. Likewise, Berman, Raval, and Goldin (2018) indicated that continuous improvement models strengthen institutional performance through measurable standards and corrective actions. Thus, service quality depends on both managerial capacity and user-oriented design.

Digitalization can also improve communication between institutions and citizens. Niță and Guțu (2023) found that leadership and digital transformation are associated with stronger engagement and more adaptive organizational environments. In the public sector, this means that citizens may access clearer information, faster responses, and more transparent procedures. As a result, trust in institutions can increase when digital systems function consistently and equitably.

Another relevant variable in this study is professional stress. Occupational stress usually emerges when employees face excessive workloads, unclear procedures, time pressure, or limited resources. Saeed et al. (2018) explained that management environments strongly influence employee wellbeing, motivation, and psychological performance. In traditional administrative contexts, repetitive paperwork, crowded offices, and slow procedures often intensify fatigue and frustration among workers.

The implementation of electronic administration may help reduce such pressures by automating routine tasks and facilitating information retrieval. Kerridge and Scott (2018) noted that administrative modernization allows personnel to dedicate more time to strategic and specialized functions rather than manual operations. Likewise, Harisudin, Adi, and Pratama (2020) emphasized that performance improvement strategies are more effective when organizations redesign processes and align resources with objectives. Therefore, digitalization may contribute to healthier and more productive work environments.

Institutional performance is also influenced by organizational learning and leadership capacity. Hallinger and Kovačević (2021) demonstrated that management research increasingly recognizes innovation, data use, and strategic leadership as drivers of effectiveness. Similarly, Hallinger (2020) highlighted that emerging regions benefit when organizations adopt evidence-based administrative reforms adapted to local realities. This suggests that electronic administration should not be copied mechanically, but contextualized according to national needs and institutional capacities.

Finally, Castillo and Hallinger (2018) argued that management reforms in developing contexts require systematic evaluation to determine their real effects. In the Algerian case, the modernization of public administration, especially in social security services, offers an opportunity to examine whether electronic systems generate better outcomes for both employees and citizens. For that reason, the present study analyzes electronic administration as a multidimensional factor linked to efficiency, transparency, reduced occupational stress, and improved public service quality.

METHODOLOGY

The present study was developed under a quantitative approach, which is appropriate for measuring perceptions, identifying tendencies, and statistically describing social phenomena through numerical data. According to Espinoza Freire (2020a), quantitative research facilitates the objective analysis of observable variables through structured instruments and systematic procedures. Likewise, Guamán Gómez, Espinoza Freire, Herrera Martínez, and Herrera Ochoa (2019) indicated that this approach is useful when the objective is to obtain measurable evidence to support institutional decision-making.

The research design was descriptive and cross-sectional, since information was collected at a specific moment without manipulating the study variables. Espinoza-Freire (2020b) explained that descriptive studies seek to characterize behaviors, opinions, or conditions present in a defined population. In this case, the study described the perceptions of employees and users regarding the role of electronic administration in reducing occupational stress and improving the quality of public service in the Regional Social Security Fund.

The study population was composed of employees and clients linked to the Regional Social Security Fund in Tizi Ouzou, Algeria. A purposive non-probabilistic sampling technique was applied, selecting participants with direct experience in the use of electronic administrative services. The final sample consisted of 120 participants distributed into two groups: 60 employees working in different institutional departments and 60 clients receiving services from the same organization. This selection allowed the incorporation of internal and external perspectives.

Data collection was conducted through two structured questionnaires designed according to the objectives of the investigation. The first instrument, directed to employees, contained 17 items related to occupational stress, work conditions, and administrative performance. The second questionnaire, addressed to clients, included 10 items focused on satisfaction, service quality, accessibility, and digital procedures. Espinoza-Freire (2021) noted that questionnaires are effective instruments for gathering standardized information when the variables under study require comparable responses.

To strengthen content validity, the questionnaires were organized in clear thematic dimensions aligned with the hypotheses of the study. In addition, simple and understandable language was used to avoid response bias and facilitate participant comprehension. Espinoza Freire and Calva Nagua (2020) argued that the quality of an instrument depends on coherence between objectives, variables, and indicators. For this reason, each item was formulated to directly measure perceptions associated with electronic administration.

Fieldwork was carried out between November 2023 and January 2024. During this period, questionnaires were distributed personally to participants and later collected for coding and

processing. Ethical principles of voluntary participation, confidentiality, and academic use of information were respected throughout the process. Espinoza-Freire (2022) emphasized that scientific research must guarantee respect for participants and responsible management of collected data.

Once collected, the information was entered into the Statistical Package for the Social Sciences (SPSS) for processing and analysis. Descriptive statistics were applied, particularly frequencies and percentages, in order to identify the predominant responses in each questionnaire item. This procedure made it possible to evaluate the two proposed hypotheses regarding the contribution of electronic administration to occupational stress reduction and the improvement of public service quality.

Finally, the results were organized into statistical tables and interpreted according to the established objectives. The comparative analysis of employee and client responses provided a broader understanding of the institutional impact of digital administration. According to Muttaqien, Rizki, and Abrori (2024), quantitative evidence derived from structured surveys is valuable for designing improvement strategies and strengthening organizational performance through informed managerial decisions.

RESULTS

The statistical analysis began with the characterization of the study sample according to gender. The results show differences between employees and clients, which provides a broader understanding of the population involved in the study. According to the collected data, female participation was predominant among employees, while male participation was higher among clients. This distribution reflects the institutional composition of the organization and the demographic profile of service users.

Table 1.

Study sample characteristics by gender

	Gender	Employees (N)	Employees (%)	Clients (N)	Clients (%)
Male	23	38.33	41	68.33	
Female	37	61.66	19	31.66	
Total	60	100	60	100	

Source: Authors' elaboration based on field data (2024)

As shown in Table 1, women represented 61.66% of the employee group, while men accounted for 38.33%. In contrast, the client group was composed mainly of men, representing 68.33% of respondents. These figures indicate that female participation was stronger within the internal administrative structure, whereas male users constituted the majority of external beneficiaries during the study period.

The second stage of the analysis considered work experience among employees and membership duration among clients. This variable is relevant because longer experience may influence perceptions regarding the transition from traditional administration to digital systems. Participants with extended institutional contact are in a better position to compare previous procedures with current electronic services.

Table 2.

Sample characteristics by professional experience and membership duration

Category	Employees (N)	Employees (%)	Clients (N)	Clients (%)
5 years	15	25.00	31	51.66
10 years	20	33.33	16	26.66
15 years	15	25.00	10	16.66
More than 15 years	10	16.66	3	5.00
Total	60	100	60	100

Source: Authors' elaboration based on field data (2024)

Table 2 indicates that the largest employee subgroup had ten years of experience (33.33%), followed by those with five and fifteen years (25% each). Among clients, the highest proportion had five years of affiliation (51.66%). These findings suggest that most respondents had sufficient exposure to institutional services, allowing them to provide informed opinions regarding the effectiveness of electronic administration.

The first hypothesis proposed that electronic administration contributes to reducing occupational stress among employees. Responses reveal a predominantly favorable perception toward this statement. Most participants agreed that digital systems reduced paperwork, improved task execution, organized appointments, and decreased work pressure associated with traditional administrative routines.

Table 3.

Employees' perceptions regarding electronic administration and occupational stress reduction

Indicator	Agree (%)	Sometimes (%)	Disagree (%)
Occupational stress decreased	56.66	26.66	10.00
Psychological comfort at work	60.00	23.33	16.66
Calm during work activities	71.66	28.33	0.00
Easier task performance	50.00	26.66	23.33
Reduced paper files	58.33	25.00	16.66
Satisfaction with e-administration	60.00	20.00	20.00

Source: Authors' elaboration based on field data (2024)

As observed in Table 3, the highest level of agreement corresponded to the statement related to feeling calm during work activities (71.66%). Likewise, 60% of respondents reported psychological comfort and satisfaction with electronic administration. These results confirm a positive relationship between digital administrative systems and improved work conditions, supporting the first research hypothesis.

The second hypothesis stated that electronic administration contributes to improving the quality of public service. Client responses also showed favorable evaluations, especially regarding accessibility, communication, satisfaction, and remote service delivery. This indicates that users perceive electronic systems as more efficient than traditional face-to-face procedures.

Table 4.

Clients' perceptions regarding electronic administration and public service quality

Indicator	Agree (%)	Sometimes (%)	Disagree (%)
Satisfaction with e-administration	60.00	30.00	10.00
Comfortable with services received	50.00	30.00	20.00
Access without travel	56.66	30.00	13.33
Improved communication with administration	71.66	28.33	0.00
Services greatly improved	60.00	23.33	16.66
Monitoring of operations improved	50.00	33.33	16.66

Source: Authors' elaboration based on field data (2024)

According to Table 4, the strongest positive response was related to communication with the administration, reaching 71.66% agreement. In addition, 60% of clients expressed satisfaction with electronic administration and perceived service improvement. These findings support the second hypothesis and demonstrate that digitalization positively influenced service quality and user experience.

Overall, the statistical evidence indicates that electronic administration generated benefits for both internal staff and external users. Employees reported lower occupational pressure and more organized workflows, while clients perceived faster access and better-quality services. Therefore, the results suggest that digital transformation contributed significantly to institutional modernization in the Regional Social Security Fund.

DISCUSSION

The findings of this study confirm that electronic administration has a positive effect on occupational wellbeing and service quality within the Regional Social Security Fund. Employees reported lower levels of work pressure, greater psychological comfort, and more organized routines after the implementation of digital procedures. These results are consistent with Plesner, Justesen, and Glerup (2018), who explained that digital transformation in public organizations modifies work structures and can reduce the burden associated with repetitive administrative tasks. Therefore, the reduction of manual procedures appears to be a relevant factor in decreasing occupational stress.

The high level of agreement regarding calmness at work and satisfaction with electronic administration suggests that technology can improve internal organizational climate when properly implemented. Saeed et al. (2018) argued that management environments strongly influence motivation, emotional stability, and professional performance. In the present case, automated systems, easier access to information, and reduced document congestion may have contributed to more favorable work conditions. This indicates that technological innovation also has an important human resource dimension.

Another significant result concerns the reduction of paper files and the simplification of internal processes. Employees recognized that electronic administration facilitated task execution and file management, confirming gains in operational efficiency. These findings coincide with Tapping and Shuker (2018), who noted that organizations improve productivity when workflows are redesigned to eliminate unnecessary steps and delays. Likewise, Kerridge and Scott (2018) emphasized that administrative modernization enables personnel to focus on strategic functions rather than routine manual work.

Regarding users, clients expressed favorable perceptions of accessibility, communication, and overall service improvement. The possibility of receiving services remotely without

unnecessary travel was one of the most valued dimensions. These results are aligned with Latupeirissa et al. (2024), who found that public service digitization increases convenience, speed, and responsiveness for citizens. In institutions with high demand, such advantages are especially relevant because they reduce waiting times and improve the user experience.

The strong agreement related to communication with the administration demonstrates the importance of digital channels in strengthening citizen-institution interaction. Waswas and Jwaifell (2019) found that electronic management systems improve service coordination and responsiveness through integrated communication mechanisms. Similarly, Di Giulio and Vecchi (2023) stated that successful public digitalization depends not only on technology, but also on the institutional capacity to connect services efficiently with citizens. Thus, communication quality becomes a key indicator of successful e-administration.

The positive evaluations regarding service quality also support the idea that digital governance contributes to better institutional performance. Androniceanu and Georgescu (2023) demonstrated that administrative digitalization is positively associated with government effectiveness. In the present study, user satisfaction and perceived improvements in services suggest that electronic administration strengthened organizational efficiency. These outcomes reinforce the argument that modernization policies can generate tangible benefits when supported by adequate implementation processes.

From a national perspective, the results are coherent with recent evidence regarding Algeria's digital transition. Abdelwaheb (2025) highlighted that e-government has become an essential pillar for citizen-oriented services in Algeria. Likewise, Berkane and Rais (2025) recognized that the country has advanced in digital modernization despite structural limitations. The findings of this study provide empirical support for these interpretations, particularly within the social security sector, where administrative demand is constant and service efficiency is essential.

Despite the positive results, some limitations must be acknowledged. Not all respondents selected the highest agreement categories, which may indicate persistent challenges such as technological adaptation, unequal digital skills, or connectivity problems. Hammal (2025) identified these barriers as common obstacles in Algeria's transition toward digital administration. Consequently, the sustainability of electronic administration requires continuous investment in infrastructure, training, and user support systems.

Overall, the discussion demonstrates that electronic administration generated multidimensional benefits for both employees and clients. Internally, it reduced occupational stress and improved workflow organization; externally, it increased service accessibility, communication, and user satisfaction. These findings confirm that digital transformation is not merely a technological change, but a managerial strategy capable of improving institutional quality and strengthening public trust.

CONCLUSION

The present study analyzed the role of electronic administration in reducing occupational stress and improving the quality of public service in the Regional Social Security Fund of Tizi Ouzou, Algeria. The findings demonstrated that digital administrative systems generated favorable perceptions among both employees and clients. In general terms, the implementation of electronic procedures contributed to organizational modernization, more agile workflows, and greater institutional responsiveness to citizen needs.

From the employees' perspective, the results confirmed that electronic administration helped reduce occupational stress associated with traditional bureaucratic practices. Participants reported greater psychological comfort, calmer work environments, easier task execution, and better organization of daily responsibilities. These outcomes indicate that replacing manual processes with digital systems can improve working conditions and enhance employee efficiency within public institutions.

From the clients' perspective, the study revealed high levels of satisfaction regarding accessibility, communication, and service quality. Users especially valued the possibility of obtaining services remotely without unnecessary travel or prolonged waiting times. In addition, respondents perceived improvements in administrative monitoring and faster responses, suggesting that electronic administration strengthened the relationship between citizens and the institution.

The evidence obtained supports the two proposed hypotheses. First, electronic administration contributes to reducing occupational stress among employees. Second, electronic administration contributes to improving the quality of public service performance. These findings confirm that digital transformation has both internal organizational benefits and external social impacts when properly implemented in high-demand public institutions.

The study also highlights that technological modernization should not be understood only as the incorporation of digital tools, but as a comprehensive strategy involving organizational redesign, staff adaptation, and citizen-centered services. Without adequate planning, training, and technical support, the expected benefits of digitalization may be limited. Therefore, successful electronic administration depends on both technological infrastructure and managerial capacity.

Finally, the Algerian experience in the social security sector illustrates the potential of electronic administration to strengthen efficiency, transparency, and public trust. Expanding these systems to other service institutions could improve national administrative performance and citizen satisfaction. Future reforms should continue investing in connectivity, digital literacy, and innovation policies to consolidate sustainable and inclusive public sector modernization. The findings support broader digital reforms in emerging public institutions

STUDY LIMITATIONS

This study had some limitations that should be acknowledged. First, the sample was limited to employees and clients of the Regional Social Security Fund in Tizi Ouzou, which may restrict the generalization of the findings to other institutions or regions of Algeria. Second, the study relied on self-reported perceptions collected through questionnaires, which may involve subjective responses. Finally, the cross-sectional design reflected conditions during a specific period and did not measure long-term changes in administrative performance.

FUTURE STUDIES

Future research should expand the sample to other public institutions and different Algerian regions in order to compare levels of digital administrative development. Longitudinal studies are also recommended to evaluate the long-term effects of electronic administration on employee wellbeing and citizen satisfaction. In addition, mixed-method approaches combining quantitative and qualitative techniques could provide a deeper understanding of technological adoption barriers and institutional transformation processes.

ACKNOWLEDGMENTS

The author expresses sincere gratitude to the academic specialists and professionals who contributed valuable observations to the development of this research. Appreciation is also extended to colleagues from the university for their continuous support, academic guidance, and encouragement throughout the preparation of this study. Special thanks are offered to all participants who generously provided the information necessary for the successful completion of the research.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest regarding the publication of this article.

REFERENCES

- Abdelwaheb, S. (2025). E-Government in Algeria: A pillar of enabling services for citizens in the digital age. *Socio-economic Analyses*, 17(1), 71–81.
- Aithal, P. S., & Maiya, A. K. (2023). Development of a new conceptual model for improvement of the quality services of higher education institutions in academic, administrative, and research areas. *International Journal of Management, Technology, and Social Sciences*, 8(4), 260–308.
- Androniceanu, A., & Georgescu, I. (2023). Public administration digitalization and government effectiveness in the EU countries. *Central European Public Administration Review*, 21, 7–22.
- Berkane, B., & Rais, O. (2025). Digital Transformation in Algeria: Successes and Failures. *Political Orbits*, 9(1), 22-40.
- Berman, L., Raval, M. V., & Goldin, A. (2018). Process improvement strategies: Designing and implementing quality improvement research. *Seminars in Pediatric Surgery*, 27(6), 379–385.
- Castillo, F. A., & Hallinger, P. (2018). Systematic review of research on educational leadership and management in Latin America, 1991–2017. *Educational Management Administration & Leadership*, 46(2), 207–225.
- Di Giulio, M., & Vecchi, G. (2023). Implementing digitalization in the public sector: Technologies, agency, and governance. *Public Policy and Administration*, 38(2), 133–158.
- Espinoza Freire, E. E. (2020b). Qualitative research, an ethical tool in the pedagogical field. *Conrado*, 16(75), 103–110.
- Espinoza-Freire, E. E. (2020c). The objective in research. *Metropolitan Journal of Applied Sciences*, 3(2), 206–215.
- Espinoza-Freire, E. E. (2021). Scientific argumentation: a didactic tool. *Uniandes Episteme Journal*, 8(1), 106–121.
- Espinoza-Freire, E. E. (2022). Ethics in scientific research. *Mexican Journal of Educational Research and Intervention*, 1(2), 35–43.
- Favoreu, C., Carassus, D., & Maurel, C. (2016). Strategic management in the public sector: A rational, political or collaborative approach? *International Review of Administrative Sciences*, 82(3), 435–453.
- Espinoza Freire, E. E. (2020a). The search for scientific information in academic databases. *Metropolitan Journal of Applied Sciences*, 3(1), 31–35.
- Guamán Gómez, V. J., Espinoza Freire, E. E., Herrera Martínez, L., & Herrera Ochoa, E. (2019). Reflexiones acerca de la investigación social en la carrera en educación del Ecuador. *Universidad y Sociedad*, 11(5), 437–446.
- Hallinger, P. (2020). Science mapping the knowledge base on educational leadership and management from the emerging regions of Asia, Africa and Latin America, 1965–2018. *Educational Management Administration & Leadership*, 48(2), 209–230.
- Hallinger, P., & Kovačević, J. (2021). Science mapping the knowledge base in educational leadership and management: A longitudinal bibliometric analysis, 1960 to 2018. *Educational Management Administration & Leadership*, 49(1), 5–30.
- Hammal, F. (2025). The digital transition in Algeria: Challenges and opportunities. *Al-Bashair Magazine*, 11(3), 624–636.

- Harisudin, M., Adi, R. K., & Pratama, N. A. K. (2020). Performance improvement strategies based on balanced scorecard for rural cooperative: The case of Indonesia. *International Journal of Trade and Global Markets*, 13(2), 161–181.
- Kerridge, S., & Scott, S. F. (2018). Research administration around the world. *Research Management Review*, 23(1), 1–34.
- Latupeirissa, J. J. P., Dewi, N. L. Y., Prayana, I. K. R., Srikandi, M. B., Ramadiansyah, S. A., & Pramana, I. B. G. A. Y. (2024). Transforming public service delivery: A comprehensive review of digitization initiatives. *Sustainability*, 16(7), 2818.
- Madani, Z., & Madani, B. (2025). Digital transition in Algeria: Infrastructure challenges and social inclusion in the digital age. *Journal of Economic and Financial Research*, 12(1), 667–700.
- Muttaqien, F., Rizki, V. L., & Abrori, I. (2024). Analysis of employee performance improvement strategies of rural bank through sustainable development goals. In *Conference on SDGs Transformation through the Creative Economy: Encouraging Innovation and Sustainability (TCEEIS 2023)* (pp. 167–173). Atlantis Press.
- Niță, V., & Guțu, I. (2023). The role of leadership and digital transformation in higher education students' work engagement. *International Journal of Environmental Research and Public Health*, 20(6), 5124.
- Ongaro, E., & Van Thiel, S. (Eds.). (2018). *The Palgrave handbook of public administration and management in Europe*. Palgrave Macmillan.
- Papantymou, A., & Darra, M. (2018). The implementation of total quality management in Greek higher education: The case of electronic administrative services. *International Education Studies*, 11(7), 26–42.
- Plesner, U., Justesen, L., & Glerup, C. (2018). The transformation of work in digitized public sector organizations. *Journal of Organizational Change Management*, 31(5), 1176–1190.
- Rowe, A. K., Rowe, S. Y., Peters, D. H., Holloway, K. A., Chalker, J., & Ross-Degnan, D. (2018). Effectiveness of strategies to improve health-care provider practices in low-income and middle-income countries: A systematic review. *The Lancet Global Health*, 6(11), e1163–e1175.
- Saeed, S. A., Silver, S., Buwalda, V. J., Khin, E. K., Petit, J. R., Mohyuddin, F., & Committee on Administration and Leadership. (2018). Psychiatric management, administration, and leadership: A continuum or distinct concepts? *Psychiatric Quarterly*, 89(2), 315–328.
- Sahi, A. (2025). E-governance and government communication in the Arab world: A comparative study of the Algerian and Saudi experiences within the context of digital transformation. *Lex Localis*, 23(10), 1–34.
- Tapping, D., & Shuker, T. (2018). *Value stream management for the lean office: Eight steps to planning, mapping, and sustaining lean improvements in administrative areas*. CRC Press.
- Todoruț, A. V., & Tselentis, V. (2018). Digital technologies and the modernization of public administration. *Calitatea-Acces la Success*, 19(165), 73–78.
- Waswas, D., & Jwaifell, M. (2019). The role of universities' electronic management in achieving organizational excellence: Example of Al Hussein Bin Talal University. *World Journal of Education*, 9(3), 53–66.