

Impact of the digitalization of administrative processes on the rationalization of expenses in Moroccan universities

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ABSTRACT: This article analyzes the impact of the digitalization of administrative processes on the rationalization of expenses within Moroccan universities. It highlights how the integration of online portals, automated workflows, interoperable information systems and cybersecurity devices helps modernize university management. Digitalization allows a significant reduction in operational costs, optimization of human and material resources, improvement of processing times and strengthening of budget control thanks to increased traceability and transparency. The study also highlights the importance of the Moroccan legal framework, institutional governance and financing strategies in the success of this digital transition. The article concludes that digitalization represents an essential lever for more efficient, sustainable financial management adapted to the contemporary challenges of Moroccan higher education

Keywords: Administrative digitalization , Moroccan universities , Rationalization of expenses , Information systems , Governance and transparency , Value for money

1. INTRODUCTION

The introduction to this topic is part of the need to analyze how the digitalization of administrative processes influences the economic management of Moroccan universities. In particular, the adoption of digital technologies is part of a major evolution to modernise administrative structures, in response to increasing demands for efficiency, transparency and value for money. The implementation of digital

solutions offers concrete opportunities to streamline expenses, reduce unnecessary costs, and improve the quality of services for students, academic and administrative staff. Digital transformation is not simply limited to the introduction of technological tools, but includes a complete review of processes, with a strategic reflection on their governance and interoperability, while respecting the legal and regulatory framework specific to the Moroccan context (BOUTAKY & BOUTAKY..., 2023). The need to deploy integrated information systems, such as online portals, electronic document management, and automated workflows, is a key lever for strengthening financial and operational efficiency. In addition, it is becoming essential to assess the impact of this digitalization on the control of public spending in a sector subject to strict economic constraints, while ensuring transparency and control of resources. The search for innovative solutions, supported by appropriate governance, thus makes it possible to achieve a balance between technological progress and budgetary stability, a sine qua non condition to guarantee the sustainability and development of the Moroccan university system.

2. Theoretical framework

The theoretical framework for the digitalization of administrative processes is based on a clear understanding of the different dimensions of this transformation. Administrative digitalization encompasses the integration of digital technologies into the day-to-day management of administrative activities, which mainly includes the implementation of online portals, workflow automation, as well as electronic document management. These dimensions promote a significant reduction in dependence on paper media and facilitate access to information in real time, thus increasing the fluidity of operations and the quality of the service provided (CHATIT et al., 2024).

In addition, the rationalization of expenditure, a central concept in this approach, refers to the optimization of financial resources by minimizing unnecessary costs, while improving the efficiency of services. This translates into better allocation of budgets, reduced duplication and more transparent management of funds. The notion of budgetary efficiency, on the other hand, insists on the ability to achieve the objectives set with a minimum of resources, which is a major challenge for universities wishing to maximize their impact without increasing their expenses (Isidore, 2025).

It is also essential to consider the legal and political context in which this digital transition is taking place. In Morocco, a regulatory framework aimed at regulating the use of digital technologies in the administration has been gradually established, with specific laws on the protection of personal data, cybersecurity, and the governance of e-government. These rules aim to ensure the legitimacy, security and transparency of digital transactions, while fostering an environment conducive to innovation. Political will, displayed through national strategies such as the Maroc Numeric strategy, is a lever for promoting digitalization, by ensuring

alignment between technological modalities and administrative development ambitions (EL BOUZAIDI, 2025). Thus, the established theoretical framework makes it possible to understand the challenges, benefits and constraints related to the digitalization of administrative processes, while highlighting the importance of a coherent regulatory framework to maximize the rationalization of expenses in the academic sector in Morocco.

2.1. Definition and dimensions of administrative digitalisation

Administrative digitalization refers to the integration of digital technologies into the management and organization of administrative processes. It manifests itself through various dimensions, such as the dematerialization of documents, the implementation of online platforms, the automation of workflows and the integration of interconnected information systems. This transformation aims to replace or supplement traditional paper-based procedures with electronic solutions, thus enabling more efficient, transparent and responsive management (Borelle et al. 2022). Digitalization is not limited to the simple implementation of new technologies; It also involves organizational, cultural and managerial changes that facilitate better administrative governance. Among its key dimensions are data security, digital identity management, as well as interoperability between different systems to ensure consistency and a smooth flow of information. By adopting these innovations, public institutions can reduce administrative overhead, speed up application processing, and strengthen regulatory compliance. Administrative digitalization therefore represents a global, integrated and strategic approach, which thoroughly modernizes operations, facilitates decision-making and optimizes the use of resources (SABRI & KHOMSI, 2022).

2.2. Concepts of Expenditure Rationalization and Fiscal Efficiency

Expenditure rationalization is a strategic approach aimed at optimizing the use of financial, material and human resources in order to achieve a sustainable financial balance. It is based on the implementation of efficient processes, making it possible to reduce unnecessary costs while maintaining or improving the quality of the services offered. Fiscal efficiency, on the other hand, refers to the ability to achieve institutional objectives with a minimum of resources, with a focus on performance and the relevance of investments. It requires rigorous management of the allocation of funds, increased transparency in the use of budgets, and constant control of expenditure (Isidore, 2025).

In this context, the digitalization of administrative processes plays a decisive role in promoting this streamlining. By automating and simplifying management methods, it significantly reduces intangible costs related to paper processes, archiving and travel. Digitalization also allows for better traceability of operations, thus facilitating the control and adjustment of expenses. In addition, the adoption of integrated and interoperable systems optimizes the use of resources, avoiding duplication or inefficiencies. It also

contributes to the dematerialization of workflows, which speeds up the processing of files and reduces response times, thus improving overall productivity (El Mehdi et al., 2024). Mastery of the concepts of rationalization of expenses and budgetary efficiency is essential to guide universities towards a healthier and more transparent management, by fully exploiting the potential offered by digitalization. These concepts constitute the foundation on which the administrative transformation is based, by providing a response to the challenges of financial sustainability and institutional competitiveness.

2.3. Legal and Policy Frameworks in Morocco

In Morocco, the legal and policy framework for the digitalization of administrative processes is an essential foundation to ensure the legitimacy, coherence and effectiveness of digital initiatives in the university sector. Several laws and regulations have been adopted to promote the digital transition, while guaranteeing data protection and the security of electronic transactions. Among these provisions, Law No. 53-05 on the electronic exchange of legal data, as well as Decree No. 2.16.382 approving the digital development strategy, play a fundamental role. These texts establish a legal framework guaranteeing the legal validity of electronic documents, thus facilitating the dematerialization of administrative procedures while ensuring their legal compliance (BELGAID, 2025).

In addition, the National Policy on Information Governance and Digital Transformation, implemented by several sectoral strategies, aims to promote digitalization as a lever for development. It establishes principles of transparency, interoperability and security, while encouraging the modernisation of public institutions, including universities. The implementation of these policies also depends on the gradual removal of regulatory barriers and the establishment of incentives for the digitalisation of administrative services. However, the effective implementation of these frameworks requires constant adaptation in the face of rapid technological change. Digital governance must therefore be part of a global strategy, taking into account the training of stakeholders, the modernisation of infrastructures, as well as awareness of IT security and respect for privacy. The complementarity between the solid legal framework and ambitious public policies is a crucial step for the sustainable integration of digitalization into the management of Moroccan universities, with a view to better rationalization of expenses and greater administrative efficiency (TAHTAH, 2022).

3. Digitalization of administrative processes in Moroccan universities

The digitalization of administrative processes in Moroccan universities is an essential step towards more effective and efficient management of resources. It is based on the integration of digital solutions such as online portals that provide simplified access to various administrative services, allowing students, teachers and staff to interact faster and more seamlessly. Implementing automated workflows facilitates electronic

document management, reducing paperwork, speeding up processes, and limiting the risk of errors related to manual tasks (Habhab, 2025). University information systems play a central role in this transformation, ensuring better interoperability between different platforms and services, thus enhancing data consistency and information fluidity. The governance of these systems must nevertheless be accompanied by strict cybersecurity measures to guarantee the confidentiality and integrity of data, a crucial element in a context of increased dematerialization (Alaoui, 2024).

In addition, digitalization promotes better management of resources by reducing costs related to physical media and manual document management. It also makes it possible to optimize human resources by automating certain administrative tasks, thus freeing up time for higher value-added activities. Reducing administrative processing times also contributes to improved productivity, while strengthening transparency and budgetary control, which are essential for responsible university management and in line with the requirements of modern governance (KCHIRI & ESSAHLI, 2025).

3.1. Online portals and services

Online portals and services are essential interfaces for the modernization and simplification of administrative management within Moroccan universities. Their deployment makes it possible to offer students, teachers and administrative staff centralized access to various procedures such as registration, consultation of results, management of administrative files, and communication with the various units. By digitizing these processes, universities not only reduce the need for physical travel or paperwork, but they also improve the speed of request processing and the availability of services. The implementation of these portals also promotes better traceability of operations and increased transparency in the management of files, which helps to strengthen user confidence and facilitate internal control. Among the services commonly offered are the online registration platform, the electronic payment of university fees, the management of timetables, as well as access to administrative and educational documents. These digital tools optimize coordination between the different administrative units and limit errors related to manual processing.

The integration of these portals is also part of a digital governance approach, requiring a solid technological infrastructure and appropriate training of staff. The success of their implementation is therefore based on a user-friendly interface, compatibility with other information systems, and a clear change management strategy. In addition, the security of personal data is a vital issue, requiring the implementation of strict protocols to ensure the confidentiality and protection of sensitive information (BELGAID, 2025).

3.2. Workflow and electronic document management

Electronic document management (EDM) is an essential lever in the streamlining of university administrative processes. It allows for the digitization, archiving, and paperless flow of information, avoiding the handling of large volumes of paper and significantly reducing the risk of physical documents being lost or damaged. The implementation of an automated workflow facilitates the sequential and fluid processing of administrative procedures, from the submission of requests to their validation, including their real-time monitoring. This approach promotes better traceability of operations, simplifies internal circulation and limits the number of people involved in each step, which speeds up the processing of files.

Electronic management systems also help to ensure increased security of sensitive information, by precisely controlling access to documents and guaranteeing their integrity. The standardization of formats and the harmonization of administrative practices contribute to consistency in the processing of data, facilitating their search and subsequent use. In addition, the dematerialization of documentary processes promotes interoperability between the university's various information systems, making it possible to exchange data efficiently and securely between departments. As a result, the digitization of workflows and electronic document management contribute directly to the reduction of costs related to printing, physical archiving, and the manual management of paper files, while improving the responsiveness and quality of service offered to users (Falardeau, 2021).

3.3. University information systems and interoperability

University information systems play a central role in optimizing administrative processes, especially when they are designed to ensure efficient interoperability between different platforms and services. Interoperability is an essential condition for ensuring smooth and consistent information exchanges, thus avoiding redundancies and errors in data transmission. Within Moroccan universities, this ability to integrate allows for simplified management of student files, finances, human resources and research activities. The implementation of a robust information system, capable of communicating with other administrative entities or external partners, promotes a homogeneous dissemination of data and improves the traceability of operations. In addition, interoperability facilitates the gradual migration to more automated and centralized solutions, helping to reduce manual processing, minimizing errors, and optimizing time spent on administrative tasks. It also offers the possibility of establishing common standards, ensuring better regulatory compliance and strengthening the security of the exchange of sensitive information. The increased reliance on these integrated systems, however, requires careful attention to data security and IT governance, in order to avoid potential vulnerabilities. The development of unified management tools, combined with standard interoperability protocols, is an essential step to ensure efficient, sustainable and adaptable digitalization to technological developments (Lamatsch, 2023).

3.4. Governance and Cybersecurity

Governance and cybersecurity are central to the success of the digitalization of administrative processes in Moroccan universities. The implementation of a secure digital system requires a rigorous structuring of

responsibilities and transparent governance, making it possible to guarantee the consistency of actions and compliance with the standards in force. The clear definition of roles, the effective supervision of digital projects, as well as the establishment of robust security policies are essential to ensure appropriate management and prevent any vulnerability (Zaaouar & Evrard, 2025).

In terms of cybersecurity, it is about protecting information systems against a multitude of potential threats such as cyberattacks, data theft or the leakage of sensitive information. Data security is paramount, not only to respect the privacy of users and students, but also to maintain institutional credibility. Universities should adopt adaptive cybersecurity strategies, including security protocols for access, firewalls, ongoing staff training, and regular auditing of systems (ADNANI and HAOUNANI2024).

E-governance must also facilitate effective management of security incidents, with pre-established contingency plans, to minimize impacts in the event of a breach. Compliance with international standards such as the General Data Protection Regulation (GDPR) or other national regulations ensures responsible data management. Raising awareness among stakeholders of the importance of cybersecurity is becoming an essential lever for strengthening the resilience of systems in the face of emerging risks. The convergence between structured governance and reinforced security measures is thus an essential pillar to support the sustainable and secure digitalization of Moroccan universities (Salma & MDARBI, 2024).

4. Effects on Expenditure Rationalization

4.1. Reduction of operational costs

The digitalization of administrative processes allows a significant reduction in operational costs within Moroccan universities. By automating repetitive tasks such as managing enrolments, distributing diplomas or maintaining administrative records, these institutions limit the consumption of human and material resources that are often costly when managed manually. The adoption of electronic management systems also reduces the reliance on paper archiving, reducing the expense of printing, storing and maintaining physical documents. In addition, the simplification of approval and approval circuits via digital workflows limits travel and physical exchanges, resulting in time and cost savings related to staff travel. The implementation of online platforms offers continuous accessibility to administrative services, avoiding face-to-face operations that often generate additional costs, especially in terms of material resources and queue management. The ability to monitor the status of processes in real time and automate reminders also helps to avoid delays and costs caused by administrative delays. In addition, the centralization of data in integrated information systems facilitates better management of resources, making it possible to quickly

direct investments towards priority areas, while limiting waste. Digitalization contributes to an overall rationalization of expenses by reducing duplication of tasks, improving interdepartmental coordination and strengthening decision-making based on reliable and up-to-date data. These improvements lead to more efficient management of budgets, better aligning costs with expected results while promoting greater transparency in the use of public funds (IDBENSSI and ALLACH2023).

4.2. Optimization of human and material resources

The digitalization of administrative processes allows for a significant optimization of human and material resources within Moroccan universities. On a human level, the automation of repetitive tasks helps to free up administrative staff, allowing them to focus on higher value-added missions, such as strategic management, student support or the development of new services. This transformation also promotes better workload distribution, reducing the overload of some agents and minimizing errors related to manual operations, which are often costly in terms of time and resources. In addition, the implementation of digital platforms facilitates coordination between different departments, allowing for a smooth and efficient flow of information.

Regarding the material aspect, digitalization makes it possible to rationalize the use of equipment and premises. Reducing the use of paper and digitizing documents is reducing the consumption of supplies, storage space, and physical media. In addition, the integration of high-performance information systems optimizes the management of material assets, ensuring better planning and maintenance of IT equipment, and avoiding waste. These approaches contribute not only to a more efficient management of available resources, but also to a reduction in the costs associated with physical infrastructure and consumables. Digitalization facilitates the adoption of proactive resource management, allowing rapid adaptation to institutional or budgetary changes. This generates a substantial saving and improves the sustainability of investments, while strengthening the capacity of Moroccan universities to host and operate in a context of constant development (MECHOUH, 2024).

4.3. Processing Times and Administrative Productivity

The digitization of administrative processes has led to a significant improvement in processing times, resulting in a significant reduction in response times to requests and routine operations. The automation and dematerialization of document flows have made it possible to avoid the slowness inherent in manual processing, which is often subject to errors or document loss. For example, electronic case management facilitates immediate access to information, eliminating the need for time-consuming and complex physical

procedures. As a result, administrative productivity has increased, as agents can handle a larger volume of cases in a shorter time, while providing better service to users (Sankhare, 2025).

4.4. Transparency and budgetary control

The digitalization of administrative processes in Moroccan universities plays a key role in strengthening transparency and improving budget control. The implementation of digital platforms allows for increased traceability of financial transactions, making it easier to check and audit expenses in real time. Thanks to integrated systems, each transaction is recorded in a secure manner, significantly reducing the risk of fraud or non-compliance. In addition, process automation helps to reduce human error and ensure optimal confidentiality of sensitive data (KCHIRI & ESSAHLI, 2025).

Digitalization also promotes better visibility on the use of financial resources, allowing managers and competent authorities to accurately track budget allocation, quickly identify discrepancies and take appropriate corrective action. In this respect, it is a powerful lever for strengthening the credibility of universities in terms of financial management. In addition, access to interactive dashboards provides a clear and up-to-date summary of the fiscal situation, facilitating informed decision-making (Badrane & Bamousse, 2025).

In terms of control, digital tools make it possible to establish standardised and automated processes for the validation of expenses, which minimises the margins of arbitrariness or manipulation. The centralization of data, combined with interoperability between different systems, ensures consistency in accounting management, while strengthening compliance with current regulations. Finally, this approach contributes to a culture of accountability, where each actor is held accountable for their financial activities, thus promoting more rigorous, efficient and transparent management of university resources (Ngando Black, 2025).

5. Policy and strategic recommendations

To ensure an effective transition to sustainable and efficient digitalization, it is essential to develop a clear and coordinated roadmap, integrating priority steps, precise deadlines and monitoring indicators. This must be accompanied by an appropriate regulatory framework, promoting the adoption of new technologies while ensuring compliance with cybersecurity and data protection standards. In addition, the development of innovative financing models, such as public-private partnerships and the use of dedicated funds, is a sine qua non condition to support the necessary investments. The pooling of resources and the networking of universities also make it possible to optimize costs and increase the impact of digitalization initiatives. Raising awareness and continuous training of administrative staff play a crucial role in effective change

management, enhancing the use of digital tools and strengthening the skills necessary to use them. The integration of good practices identified at the national and international levels must guide the development of strategies, while adapting solutions to the specificities of the Moroccan context. The success of these recommendations therefore depends on robust governance, a capacity for constant innovation, and the active involvement of all stakeholders in the digital transformation process.

5.1. Digitalization roadmap

The digitalization roadmap is an essential step to structure and guide all initiatives aimed at modernizing administrative processes within Moroccan universities. It must start with a precise assessment of local needs, identifying weak points and levers for improvement, in order to ensure a coherent implementation adapted to institutional specificities. Subsequently, the definition of clear, measurable and achievable objectives makes it possible to establish a medium- and long-term strategic vision, by integrating performance indicators to monitor the evolution of projects. Planning must also provide for a balanced allocation of human and financial resources, which are essential for the success of digitalization actions. The prioritization of actions, according to their impact on the rationalization of expenses and the fluidity of services, facilitates the constitution of a realistic and pragmatic schedule. In terms of governance, the establishment of a dedicated steering committee, composed of representatives of the various stakeholders, ensures effective coordination and proactive risk management. The continuous training of administrative staff appears to be a pillar to ensure the adoption and optimal use of new digital tools. Finally, transparent and regular communication on progress promotes the support of stakeholders, reinforces the legitimacy of the process and allows actions to be quickly adjusted according to feedback. Such a roadmap, structured and evolving, is therefore an essential strategic framework to carry out an effective digital transition, capable of contributing significantly to the rationalization of expenses in the specific context of Moroccan universities.

5.2. Funding Models and Partnerships

Funding and partnership models play a crucial role in the sustainability and effectiveness of digitalization initiatives within Moroccan universities. Diversifying funding sources, including public funds, international grants and private-public partnerships, supports technology acquisition, staff training and the maintenance of digital systems. The mobilization of these resources helps to reduce the exclusive dependence of universities on traditional, often constrained budgets, and facilitates the deployment of innovative solutions adapted to the specific needs of the academic sector. In addition, the search for strategic partnerships with technology companies, local authorities or international bodies strengthens institutional capacity in digitalisation, while promoting the exchange of best practices and know-how. These collaborations also offer joint funding opportunities for pilot or experimental projects, allowing digital solutions to be tested

and adapted before their large-scale deployment. Establishing sustainable partnership models and transparent financing arrangements is essential to ensure the financial stability of projects and their alignment with the institutional objectives of expenditure rationalization. Finally, an integrated strategy combining internal resources, external funding and effective partnerships is a major lever for optimizing the impact of digitalized processes on the financial management of Moroccan universities, while ensuring their financial autonomy and sustainable development.

5.3. Good change management practices

Change management is an essential step in the success of administrative digitalization within Moroccan universities. It requires careful planning, clear communication and the active involvement of all stakeholders. Before any implementation, it is necessary to assess the current state of practices, identify potential resistance and define an appropriate strategy to support the transition. The identification of precise, measurable and realistic objectives makes it possible to mobilize the teams and establish a coherent framework for action. Awareness and training are fundamental levers to promote the acceptance of change, by dispelling concerns about the loss of autonomy or changes in professional routines. In addition, the commitment of management is crucial to establish a culture of innovation and ensure the sustainability of digital initiatives. Regular communication on the expected benefits, combined with transparent management of any difficulties, helps to strengthen staff confidence. Change management should not be limited to a simple technological adaptation, but should extend to a sustainable organizational transformation, involving process redefinition and continuous optimization. The implementation of evaluation and feedback mechanisms facilitates the adjustment of strategies, thus ensuring a smooth and efficient transition to new digital administrative practices.

4. CONCLUSION

The digitalization of administrative processes is a crucial step for the modernization and rationalization of expenses in Moroccan universities. By promoting the automation and digital management of information flows, it significantly reduces the costs associated with manual operations, such as printing, storing and physically managing documents. This transition to electronic systems also facilitates the optimization of human resources by limiting repetitive tasks, while improving the productivity and responsiveness of administrative staff. Dematerialization accelerates the processing times of procedures, thus strengthening the overall efficiency of university operations. In addition, the increased transparency offered by digitalization promotes better control of expenses and more rigorous budget management, by allowing real-time monitoring and traceability of financial operations. However, the implementation of these systems requires adequate structuring, including securing sensitive data and developing digital skills within teams.

In conclusion, the impact of digitalization on the rationalization of expenses translates into a substantial reduction in operational costs, a better allocation of resources and a more transparent management, thus constituting an essential step towards a more efficient university management adapted to contemporary challenges.

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