Transformation of administrative management through emerging technologies and digital innovation

Transformación de la gestión administrativa mediante tecnologías emergentes e innovación digital

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ABSTRACT

The purpose of this article was to analyze how emerging technologies are transforming administrative management through innovation processes. To this end, an academic review was conducted focusing on scientific articles published between 2018 and 2024, both empirical and review articles, with an emphasis on studies of the Latin American context. Three main dimensions were addressed: the transformation of organizational processes, changes in leadership models, and future projections for administration. The findings, based on contributions from authors such as Sánchez-Torres, Vega, Salazar, Reyes, García-Bernal, and López, showed that tools such as artificial intelligence, blockchain, automation, and predictive analytics have significantly impacted operational and strategic efficiency. Likewise, new styles of digital leadership and challenges associated with ethics, technological inclusion, and organizational sustainability were identified. It was concluded that digital transformation goes beyond the use of technologies, requiring strategic vision, digital skills, and adaptive capacity in contemporary administrative environments.

Keywords: Artificial Intelligence; Automation; Cybersecurity; Decision-Making; Knowledge Management.

RESUMEN

El presente artículo tuvo como objetivo analizar cómo las tecnologías emergentes están transformando la gestión administrativa mediante procesos de innovación. Para ello, se desarrolló una revisión académica centrada en artículos científicos publicados entre 2018 y 2024, tanto empíricos como de revisión, con énfasis en estudios del contexto latinoamericano. Se abordaron tres dimensiones principales: la transformación de procesos organizacionales, los cambios en los modelos de liderazgo y las proyecciones futuras de la administración. Los hallazgos, fundamentados en aportes de autores como Sánchez-Torres, Vega, Salazar, Reyes, García-Bernal y López, evidenciaron que herramientas como la inteligencia artificial, el blockchain, la automatización y la analítica predictiva han impactado significativamente la eficiencia operativa y estratégica. Así mismo, se identificaron nuevos estilos de liderazgo digital y retos asociados a la ética, la inclusión tecnológica y la sostenibilidad organizacional. Se concluyó que la transformación digital va más allá del uso de tecnologías, requiriendo visión estratégica, competencias digitales y capacidad adaptativa en los entornos administrativos contemporáneos.

Palabras clave: Automatización; Ciberseguridad; Gestión del Conocimiento; Inteligencia Artificial; Toma de Decisiones.

INTRODUCTION

In recent years, digital transformation has ceased to be an option and has become a strategic necessity for organizations. The speed with which technologies such as artificial intelligence, blockchain, automation, and data analytics are emerging has radically changed the way administrative management is conceived and practiced. According to Sánchez-Torres and Vega[1], these changes not only introduce new tools, but also transform organizational structures, internal processes, and the dynamics between institutional actors.

The analysis by Pinto and Arias[2] shows that digital transformation involves both a technological and a human dimension. The implementation of automated platforms and artificial intelligence systems requires an organizational culture that is open to change, skilled talent, and leaders with strategic vision. Arango and Muñoz[3], meanwhile, warn that in countries such as Colombia, this transition has been limited by low investment in innovation, resistance to change, and unequal access to technological infrastructure.

Organizational leadership has also been impacted by this process. Salazar and Reyes[4] argue that new forms of digital leadership have emerged that are more collaborative and adaptive, responding to environments characterized by uncertainty and rapid change. From this perspective, contemporary managers must integrate technical skills with soft skills such as communication, emotional intelligence, and critical thinking.

Likewise, García-Bernal and Ospina[5] argue that the future of administrative management is conditioned by the ability of organizations to integrate emerging technologies with principles of sustainability and digital ethics. In line with this position, López[6] insists that it is not enough to adopt advanced technologies, but that it is necessary to ensure their responsible and equitable use.

In this context, the purpose of this article was to analyze the effects of emerging technologies on administrative management from a digital innovation perspective. To this end, a documentary review of recent research published between 2018 and 2024 was conducted, with an emphasis on experiences in Latin America. The analysis was structured around three axes: the transformation of administrative processes, changes in leadership models, and strategic projections for the future of administration.

METHOD

This research was developed using a qualitative approach, guided by the interpretive paradigm, which allows for an understanding of social phenomena from the perspective of the meanings constructed by the actors and the dynamics that emerge in particular contexts. In this case, we sought to interpret how emerging technologies are generating transformations in administrative management through the analysis of existing academic sources.

The study is descriptive and documentary in nature, as no field data was collected. Instead, secondary information contained in scientific articles, academic reports, and specialized literature was systematized. The research design is non-experimental and cross-sectional, as it focuses on observing and analyzing phenomena that have already occurred within a defined period, without manipulating variables.

The scope was exploratory and explanatory, allowing us to identify key categories and establish relationships between the effects of digital transformation and new forms of administrative management.

In terms of materials, 25 academic sources were consulted between 2018 and 2024, including empirical and review articles from databases such as Google Scholar, Scielo, Redalyc, Dialnet, and indexed Colombian journals.

The selection criteria included:
- Publications in Spanish or English
- Direct relationship with administration, emerging technologies, or digital transformation
- Latin American context, with an emphasis on studies conducted in Colombia

The techniques used were:
- Analytical reading to identify recurring concepts
- Thematic coding to organize information into categories
- Interpretive synthesis, with the aim of constructing a coherent academic narrative.

No human participants were involved, nor were instruments such as surveys or interviews used, given that the primary source of information was documentary.

This approach allowed us to construct a comprehensive framework on the effects of emerging technologies on administrative management, from a reflective, critical perspective based on recent academic evidence.

RESULTS

Based on the documentary analysis, three main effects were identified that summarize the impact of emerging technologies on administrative management: the transformation of organizational processes, the evolution of leadership models, and projections toward new administrative trends. The most relevant findings are presented below, contrasted with recent Latin American scientific literature.

Digital transformation in administrative processes

The digitization of processes has been one of the most visible expressions of technological adoption in management. According to Sánchez-Torres and Vega[1], in Colombia, many small and medium-sized enterprises have begun to integrate tools such as artificial intelligence, RPA (robotic process automation) and cloud platforms to optimize key administrative functions such as accounting, payroll, and customer service.

However, Arango and Muñoz[3] point out that, despite growing access to these technologies, obstacles remain, such as resistance to change, low staff training, and a lack of digital leadership. Pinto and Arias[2] add that these automation processes must be accompanied by people-centered change management to enhance organizational learning and prevent labor exclusion processes.

New leadership models and organizational structures

Leadership has had to adapt to highly digitized environments, where decision-making and team management take place in virtual and dynamic spaces. Salazar and Reyes argue that digital leadership is characterized by its collaborative approach, its ability to lead in uncertainty, and its mastery of technological tools.

Ruiz and González[2] complement this view by pointing

out that emotional intelligence, effective communication, and strategic vision are essential elements for guiding digital transformation processes. For their part, Castillo and Montoya[8] argue that transformational leadership, when aligned with technological innovation, increases team commitment and strengthens a culture of continuous learning.

These transformations have also led to the emergence of more horizontal, agile, and flexible organizational structures, where hierarchy gives way to autonomy, innovation, and collective intelligence.[9,10]

Projection toward future trends in administration

The current changes in administrative management are just a prelude to even more profound transformations. García-Bernal and Ospina[5] identify trends such as generative artificial intelligence, blockchain, intelligent cybersecurity, and real-time data-driven decision-making as key elements for the near future of administration.

López[6] warns that these technologies require an ethical approach from the moment they are implemented, so that they do not widen existing gaps or violate fundamental rights. In the Colombian context, Sánchez-Torres and Vega[1] emphasize the importance of ensuring equitable access to digital infrastructure, as well as strengthening technological governance and professional training in innovation.

Organizations that manage to integrate these trends in a strategic and sustainable manner will be better prepared to face the challenges of a global, changing, and highly competitive environment.[11]

CONCLUSIONS

This review has shown that emerging technologies are bringing about a profound and multidimensional transformation in administrative management. Far from being merely a technical change, the adoption of tools such as artificial intelligence, automation, and blockchain is leading to a reconfiguration of internal dynamics, leadership styles, and organizational strategies.

The findings show that these technologies have significantly improved the efficiency of administrative processes, especially in organizations that have embraced a culture of innovation. However, their effective implementation depends on human and strategic factors such as digital leadership, talent training, change management, and long-term vision. Human and strategic factors

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From a critical perspective, it was identified that the benefits of digital transformation are only sustainable when aligned with ethical principles, inclusive policies, and technological governance processes. In the Latin American context, and particularly in Colombia, there is a need to strengthen access to digital infrastructure, reduce the technological divide, and foster collaborative ecosystems between academia, business, and the state.

Finally, this research opens the door to future empirical investigations to assess the real impact of these technologies on different types of organizations, as well as to explore the skills that 21st-century managers must develop to lead in highly digitized and dynamic environments.

CONFLICTS OF INTEREST

No conflicts of interest are declared.

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