

Technology-Driven Strategic Human Resource Management: Its Impact on Productivity, Organizational Climate, and Corporate Development

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Abstract

The objective of this research was to analyze the relationship between technology-driven human talent management, organizational climate, and labor productivity within the Faculty of Business Sciences at the Technical University of Machala (Universidad Técnica de Machala). The study adopted a quantitative approach with a non-experimental, cross-sectional, correlational design. The total population comprised 143 workers, from which an effective sample of 61 participants was drawn, representing various occupational groups within the academic unit. Data collection was conducted utilizing a survey technique implemented through a structured, five-point Likert scale questionnaire, which was organized into four primary dimensions: human talent management, technology in human talent management, organizational climate, and labor productivity. The empirical results demonstrated a favorable assessment of the analyzed variables, with the highest scores observed in labor productivity ($M = 4.55$), technology in human talent management ($M = 4.43$), and organizational climate ($M = 4.33$). Furthermore, statistically significant positive correlations were identified between the dimensions under study; the most prominent relationship emerged between technology and labor productivity ($r = .838$), followed by the correlation between human talent management and organizational climate ($r = .793$). These findings support the conclusion that integrating technological tools into human talent management processes contributes favorably to strengthening both the organizational climate and institutional productivity.

Keywords: human talent management; organizational technology; organizational climate; labor productivity; public higher education.

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Gestão de talentos com tecnologia: impacto na produtividade e no clima organizacional para o desenvolvimento organizacional

Resumo

O presente estudo teve como objetivo analisar a relação entre a gestão de talentos com tecnologia, o clima organizacional e a produtividade do trabalho na Faculdade de Ciências Empresariais da Universidade Técnica de Machala. A pesquisa foi desenvolvida sob uma abordagem quantitativa, com delineamento não experimental, alcance correlacional e corte transversal. A população foi composta por 143 trabalhadores, enquanto a amostra efetiva correspondeu a 61 participantes pertencentes aos diferentes grupos ocupacionais da unidade acadêmica. A técnica de coleta de dados foi a aplicação de um questionário estruturado com escala Likert de cinco pontos, organizado em quatro dimensões: gestão de talentos, tecnologia na gestão de talentos, clima organizacional e produtividade do trabalho. Os resultados evidenciaram uma avaliação favorável das variáveis analisadas, destacando-se a produtividade do trabalho ($M = 4,55$), a tecnologia na gestão de talentos ($M = 4,43$) e o clima organizacional ($M = 4,33$). Além disso, foram identificadas correlações positivas entre as dimensões estudadas, sendo a mais significativa a relação entre tecnologia e produtividade do trabalho ($r = 0,838$), seguida da relação entre gestão de talentos e clima organizacional ($r = 0,793$). Esses achados permitem concluir que a incorporação de ferramentas tecnológicas nos processos de gestão de talentos está associada ao fortalecimento do clima organizacional e da produtividade institucional.

Palavras-chave: gestão de talentos; tecnologia organizacional; clima organizacional; produtividade do trabalho; ensino superior público.

Gestión del talento humano con tecnología: impacto en la productividad y clima laboral para el desarrollo organizacional

Resumen

La presente investigación tuvo como objetivo analizar la relación entre la gestión del talento humano con tecnología, el clima laboral y la productividad laboral en la Facultad de Ciencias Empresariales de la Universidad Técnica de Machala. El estudio se desarrolló bajo un enfoque cuantitativo, con diseño no experimental, alcance correlacional y corte transversal. La población estuvo conformada por 143 trabajadores, mientras que la muestra efectiva correspondió a 61 participantes pertenecientes a los distintos grupos laborales de la unidad académica. La técnica de recolección de datos fue la encuesta, aplicada mediante un cuestionario estructurado con escala tipo Likert de cinco niveles, organizado en cuatro dimensiones: gestión del talento humano, tecnología en la gestión del talento humano, clima laboral y productividad laboral. Los resultados evidenciaron una valoración favorable de las variables analizadas, destacándose la productividad laboral ($M = 4,55$), la tecnología en la gestión del talento humano ($M = 4,43$) y el clima laboral ($M = 4,33$). Asimismo, se identificaron correlaciones positivas entre las dimensiones estudiadas, siendo la más significativa la relación entre tecnología y productividad laboral ($r = 0,838$), seguida de la relación entre gestión del talento humano y clima laboral ($r = 0,793$). Estos hallazgos permiten concluir que la incorporación de herramientas tecnológicas en los procesos de gestión del talento humano contribuye favorablemente al fortalecimiento del clima laboral y la productividad institucional.

Palabras clave: gestión del talento humano; tecnología organizacional; clima laboral; productividad laboral; educación superior pública.

Introduction

In recent decades, human talent management has undergone a significant transformation, going from a traditional approach focused on administrative functions to a strategic vision aimed at developing skills and strengthening organizational performance. This shift reflects the need for organizations to adapt to dynamic environments, where human talent is recognized as a key factor for efficiency and institutional sustainability.

In the public sector, this evolution becomes especially important because the quality of services offered to citizens largely depends on the institutions' ability to properly manage their staff. Various studies have shown that human talent management is a key factor in administrative efficiency, particularly in situations where structural limitations persist, such as organizational rigidity, inadequate training, and weak implementation of policies aimed at staff development (Dueñas Holguín & Moreno Cevallos, 2024; Jara et al., 2018).

In the field of public higher education, these conditions become more complex due to the coexistence of multiple labor systems and the need to coordinate academic and administrative roles. Under these circumstances, human talent management becomes a key strategy for improving work performance and optimizing institutional processes. Recent empirical evidence has shown that there is a direct and significant relationship between human talent management and job performance, affecting aspects such as the quality, efficiency, and effectiveness of work (León-Aguilar & Villanueva-Figueroa, 2025; Figueroa-González et al., 2024).

In the case of the Technical University of Machala, a public higher education institution located in the province of El Oro, Ecuador, there are approximately 792 employees, spread across teaching staff, administrative personnel, and workers under different legal regimes, according to institutional data valid as of March 23, 2026. Based on this structure, the study is limited to the Faculty of Business Sciences, chosen for direct access to the population and information, which ensures the feasibility of the research process.

Well, specialized literature not only highlights the influence of human talent management on performance, but also its interaction with psychosocial variables. In particular, the work environment is recognized as a key factor in organizational behavior, being linked to aspects like communication, leadership, and motivation. From this perspective, emotional intelligence stands out as an important element in building positive workplaces, supporting good interpersonal relationships and contributing to better job performance (Carrillo et al., 2018).

Likewise, it has been found that factors such as continuous training, skills development, and incentive systems directly affect productivity and employee job satisfaction, highlighting the importance of comprehensive and strategic human talent management (Dueñas Holguín & Moreno Cevallos, 2024; León-Aguilar & Villanueva-Figueroa, 2025). However, despite these advances, many academic units still show limited empirical evidence that would allow a clear understanding of the relationship between human talent management, work environment, and productivity.

This gap is particularly relevant in public higher education institutions, where the implementation of human talent management strategies faces challenges linked to structural, regulatory, and cultural factors (Dueñas Holguín & Moreno Cevallos, 2024). In this context, the incorporation of technological tools in human talent management has become increasingly important, as it allows for optimizing processes like training, performance evaluation, and organizational communication. The digitalization of human talent management not only helps improve institutional efficiency but also impacts the work experience of employees, influencing factors like work climate and productivity. Several studies have shown that the use of technologies, including digital tools and artificial intelligence, helps optimize organizational processes and improves performance and job satisfaction (Trujillo et al., 2026). Likewise, the modernization of public management, supported by the use of technologies and the strengthening of human talent management, has been linked to improvements in organizational efficiency and institutional performance (Valencia et al., 2025). However, in the context of public higher education institutions, there is still limited empirical evidence to understand how the use of technology in human talent management impacts these organizational outcomes.

Based on what has been presented, the following research question arises: What is the impact of human talent management with technology on productivity and the work environment at the Faculty of Business Sciences of the Technical University of Machala?

From a theoretical perspective, the study contributes to the analysis of human talent management in its strategic dimension, integrating organizational and human variables that affect work performance. On an empirical level, it provides evidence in a specific context of public higher education, where there are still limitations in applied research. On a practical level, the results will help guide institutional decision-making, promoting strategies that strengthen the work environment and productivity.

In this sense, the aim of this research is to analyze the impact of human talent management with technology on productivity and work environment at the Faculty of Business Sciences of the Technical University of Machala.



Theoretical Framework

Human Resource Management

Human resource management (HRM) has established itself as a strategic axis for organizational development by integrating processes designed to attract, develop, motivate, evaluate, and retain individuals in alignment with institutional objectives. This perspective transcends the traditional view of human resources as a merely operational element; instead, it recognizes employees as possessors of knowledge, competencies, skills, creativity, and innovation capable of generating value and strengthening organizational performance (Chiavenato, 2020). Consistent with this approach, Cabrera Dávila (2025) argues that, in public institutions, strategic HRM fosters competence development, increases organizational efficiency, and improves service quality through practices oriented toward the continuous enhancement of institutional performance.

Under this approach, HRM is not limited to personnel administration; rather, it involves articulating policies, processes, and practices that promote performance, job satisfaction, productivity, and institutional sustainability. Recent studies maintain that proper HRM directly impacts employee commitment, productivity, and retention, especially when there is alignment between organizational policies and personnel needs (Pibaque & Mera, 2025). Furthermore, Latin American literature highlights that HRM strengthens work performance, efficiency, and the quality of institutional services (Jara Martínez et al., 2018; León-Aguilar & Villanueva-Figueroa, 2025).

In the public sector, HRM acquires a distinct dimension due to the necessity of responding to regulatory structures, formal administrative processes, and citizen demands for efficiency and quality. In this arena, research has identified that factors such as training, motivation, leadership, performance evaluation, and workplace recognition are determining factors in improving institutional efficiency (Dueñas Holguín & Moreno Cevallos, 2024; Valencia et al., 2025). Similarly, within the Latin American educational context, HRM is linked to workplace well-being, professional development, the retention of qualified personnel, and the quality of institutional outcomes (Trujillo et al., 2026).

Therefore, for the purposes of this research, HRM is understood as a strategic process that aligns employee capabilities with institutional objectives, thereby fostering performance, organizational climate, and productivity within a public academic unit.

Technology in Human Resource Management

The digital transformation has altered the manner in which organizations manage their personnel. In this scenario, technology applied to HRM enables the optimization of processes such as information management, internal communication, training, performance evaluation, and results monitoring. Chiavenato (2020) posits that information systems, databases, and administrative platforms constitute integral parts of modern supervision and human resource management processes.

Within the Latin American educational landscape, recent literature recognizes that the appropriate management of technology facilitates both institutional management and personnel professional development. The systematic review conducted by Trujillo et al. (2026)—based on articles published between 2020 and 2024 in databases such as SciELO, Latindex, Dialnet, and Scopus—highlights that technology contributes to professional development, talent management, and the strengthening of educational outcomes.

In the public sector, digitalization is also linked to administrative modernization. Recent studies argue that the incorporation of digital technologies, along with HRM and the strengthening of governance, conditions productivity and work performance in public institutions (Valencia et al., 2025). However, technology alone does not guarantee organizational improvements; it requires training, digital literacy, and strategic management that enables workers to adapt to technological shifts without perceiving them as a threat.

Consequently, technology in human resource management must be understood as a means to improve efficiency, decision-making, communication, and competence development. In the case of a public higher education institution, its utilization can contribute to enhancing internal processes and strengthening labor productivity, provided that it is integrated with strategies for training, leadership, and institutional guidance.

Technology Applied to Human Resource Management in the Institutional Context

In the current landscape, technology applied to HRM is not limited solely to the digitalization of administrative processes; rather, it encompasses a set of tools, platforms, and systems that optimize organizational management and improve work performance. In higher education institutions, this technology manifests through institutional management systems, digital platforms, and supportive tools that facilitate information management, internal communication, and the monitoring of activities (Trujillo et al., 2026).

From an organizational perspective, the incorporation of technologies into HRM is linked to the modernization of administrative processes and the strengthening of institutional efficiency—particularly within the public sector, where digitalization allows organizations to overcome structural limitations and improve service quality (Valencia et al., 2025). Furthermore, the use of technological tools contributes to the development of digital competencies among workers, fostering their performance and adaptation to dynamic work environments (Dueñas Holguín & Moreno Cevallos, 2024).

In the case of the Universidad Técnica de Machala, the incorporation of technology into institutional management is evident in the implementation of systems such as the *Sistema de Información de la Universidad Técnica de Machala* (SIUTMACH). This system enables the management of academic and administrative processes through integrated digital platforms, thereby facilitating access to information, task automation, and improved institutional decision-making (Universidad Técnica de Machala, n.d.). Similarly, tools such as the *Sistema de Gestión Documental y Archivo* (SIGEDA) allow for both the physical and electronic administration of documents, contributing to the preservation of institutional memory and efficiency in records management.

Additionally, the use of emerging digital tools, such as generative artificial intelligence, has begun to influence activities related to report generation, information management, and decision-making support. Although these technologies do not replace human labor, they represent a complement that can enhance human talent capabilities, optimizing timelines and improving the quality of organizational outcomes.

In this regard, technology in HRM should be understood as a transversal component that influences organizational efficiency, internal communication, organizational climate, and productivity, especially when its implementation is articulated with strategies for training, leadership, and personnel development.

Organizational Climate

Organizational climate constitutes a central variable in organizational behavior because it reflects employees' perceptions of their work environment, interpersonal relationships, leadership, communication, motivation, and organizational conditions. Andrade and Betancourth (2018) maintain that organizational climate is related to the holistic well-being of collaborators and that its strengthening requires interventions across dimensions such as leadership, motivation, reciprocity, participation, conflict resolution, and information exchange.

From this perspective, organizational climate does not depend solely on physical or administrative conditions, but also on psychosocial and emotional factors. The literature demonstrates that a favorable work environment strengthens commitment, satisfaction, a sense of belonging, and the effective fulfillment of tasks. Conversely, a deteriorated organizational climate can generate conflict, demotivation, turnover, absenteeism, and a decline in productivity (Andrade & Betancourth, 2018).

Furthermore, emotional intelligence has become a relevant factor in understanding organizational climate. Sandoval and Carvajal (2024) argue that emotional intelligence promotes effective communication, empathy, conflict resolution, and the construction of positive workplace relationships. In this regard, workers and leaders with a greater capacity to regulate emotions, communicate assertively, and act with empathy can contribute to a healthier and more productive organizational climate.

In public institutions, where diverse labor regimes, academic functions, and administrative roles coexist, organizational climate acquires greater importance, as it affects collaboration, perceptions of justice, motivation, and performance. Therefore, its analysis is fundamental to understanding how organizational and human conditions influence labor productivity.

Labor Productivity

Labor productivity relates to the capacity of workers to generate efficient, effective, and high-quality results based on the available resources. It is not limited to the quantity of tasks performed; rather, it encompasses the fulfillment of objectives, quality of service, process efficiency, and overall contribution to organizational development.

Various studies link productivity to human resource management. Pibaque and Mera (2025) point out that the absence of effective training, motivation, and recognition strategies can negatively affect organizational performance, whereas alignment between management policies and personnel expectations helps to enhance performance. Similarly, León-Aguilar and Villanueva-Figueroa (2025) provide evidence of a positive relationship between HRM and work performance, particularly across dimensions such as quality, efficiency, and effectiveness.

Productivity is also closely associated with working conditions, incentives, and institutional responsibility. Castillo et al. (2024) maintain that compliance with labor responsibilities, benefits, incentives, and proper conditions can directly affect employee productivity. This perspective underscores that productivity does not depend solely on individual effort, but also on the organizational conditions that foster or constrain performance.



In the public sector, productivity is tied to institutional efficiency and service quality. Dueñas Holguín and Moreno Cevallos (2024) highlight that continuous training, competency-based models, motivation, and recognition are key factors that strengthen organizational performance. Therefore, analyzing labor productivity within a public academic unit requires the simultaneous consideration of individual capabilities, management practices, organizational climate, and institutional conditions.

Theoretical Underpinnings of the Research

The present study is grounded in several theoretical approaches that facilitate an understanding of the relationship between technology-driven human resource management, organizational climate, and productivity within the organizational context.

First, from the Resource-Based View (RBV), human talent is considered a strategic resource capable of generating sustainable competitive advantages, provided that its knowledge, skills, and competencies add value to the organization (Barney, 1991). In this regard, proper human resource management, supported by the use of technological tools, enables the enhancement of these capabilities and improves organizational outcomes. This perspective has been reinforced by recent studies highlighting the role of human talent in institutional performance and organizational efficiency (Dueñas Holguín & Moreno Cevallos, 2024; León-Aguilar & Villanueva-Figueroa, 2025).

Second, organizational behavior theory explains how perceptions, attitudes, and interpersonal relationships within the work environment influence variables such as organizational climate and employee performance. From this perspective, factors like motivation, leadership, and communication directly affect productivity and the quality of the work performed (Andrade & Betancourth, 2018; Sandoval & Carvajal, 2024). Within this framework, organizational climate serves as a mediating element between human resource management practices and organizational outcomes.

Additionally, the incorporation of technology into human resource management can be analyzed through the Technology Acceptance Model (TAM), which posits that the utilization of digital tools depends on individuals' perceptions of usefulness and ease of use (Davis, 1989). In this sense, the implementation of digital systems, institutional platforms, and technological tools within the organizational sphere can influence the way workers carry out their activities, thereby impacting their performance and overall organizational efficiency. Recent studies have shown that digitalization and the modernization of public management, in conjunction with HRM, condition productivity and institutional performance (Valencia et al., 2025; Trujillo et al., 2026).

Taken together, these theoretical approaches substantiate the relationship between technology-driven human resource management, organizational climate, and productivity, providing a solid conceptual framework that guides the development of this research.

Relationship between Technology-Driven Human Resource Management, Organizational Climate, and Productivity

The reviewed literature supports the premise that human resource management, organizational climate, and productivity maintain an interdependent relationship. In the current landscape, this relationship is strengthened by the incorporation of technological tools into organizational management, which optimize processes, improve internal communication, and facilitate decision-making. In this regard, technology-driven human resource management acts as an articulating axis; through training processes, performance evaluation, task automation, and the use of digital systems, it can influence employees' perceptions of their work environment and, in turn, their performance.

From a strategic approach, proper human resource management strengthens workplace commitment, satisfaction, and motivation, creating favorable conditions for a better organizational climate (Jara Martínez et al., 2018; Pibaque & Mera, 2025). Likewise, effective human resource management fosters capability development, performance optimization, and increased labor productivity by aligning personnel competencies with institutional objectives (Roldán et al., 2024). Turn, a positive organizational climate strengthens communication, leadership, cooperation, and conflict resolution—elements that directly impact worker performance and productivity (Andrade & Betancourth, 2018; Sandoval & Carvajal, 2024).

Recent evidence from public institutions reinforces this relationship. León-Aguilar and Villanueva-Figueroa (2025) report positive correlations between human resource management and work performance, while Dueñas Holguín and Moreno Cevallos (2024) highlight that human resource practices drive administrative efficiency and organizational performance. Along the same lines, Valencia et al. (2025) conclude that the modernization of public management, digitalization, human resource management, and governance condition public sector productivity, demonstrating the role of technology as an integrating element in organizational processes.

Consequently, the present research is grounded on the premise that technology-driven human resource management can influence the labor productivity of workers, especially when it strengthens the organizational climate, promotes motivation, develops competencies, and creates favorable institutional conditions. This relationship is particularly relevant to the Faculty of Business Sciences at the Universidad Técnica de Machala, where academic, administrative, and operational functions converge under a public higher education structure, supported by the use of institutional systems and technological tools for organizational management.

Methodology

This research was developed under a quantitative approach, aimed at analyzing the relationship between technology-driven human resource management, organizational climate, and labor productivity through the collection and analysis of numerical data (Hernández-Sampieri & Mendoza, 2018; Ñaupas et al., 2020). The study was applied in nature, utilizing a non-experimental, correlational, and cross-sectional design, as the variables were observed in their natural context at a single point in time.

The initial population consisted of 143 workers from the Faculty of Business Sciences at the Universidad Técnica de Machala (120 faculty members, 13 administrative staff, and 10 operational workers). A census sampling approach was initially selected due to the manageable size of the study universe (Ñaupas et al., 2020). However, the final effective sample comprised 61 participants who voluntarily responded to the research instrument, maintaining representation across the distinct occupational groups within the academic unit.

The data collection technique employed was a survey, administered via a structured questionnaire with a five-point Likert-type scale (Likert, 1932). The instrument was organized into four dimensions: human resource management, technology in human resource management, organizational climate, and labor productivity. The use of structured instruments enables the systematization of information, thereby facilitating its analysis and interpretation within the research process (Vásquez-Moreno et al., 2024).

Instrument validity was ensured through content review to verify the relevance and clarity of the items in relation to the variables under study. Methodological rigor constitutes a fundamental element to guarantee the quality of the obtained results (Espinoza-Freire, 2025; Caballero Merlo, 2025). Data analysis was conducted using descriptive statistics—specifically frequencies, percentages, and measures of central tendency such as the mean—which allowed for the identification of trends and perceptions associated with technology-driven human resource management, organizational climate, and labor productivity. Finally, ethical principles such as voluntary participation, confidentiality, and participant anonymity were strictly maintained throughout the entire research process (Ñaupas et al., 2020).

Results and Discussion

Sample Characterization

Table 1.
Sample Characteristics.

VARIABLE	FREQUENCY	%
Faculty	46	75,4
Administrative Staff	11	18,0
Operational Workers	4	6,6
Total	61	100

Note: Prepared by the author based on the survey administered (2026).

The effective sample comprised 61 workers from the Faculty of Business Sciences at the Universidad Técnica de Machala, representing 42.6% of the total study population. Of the total participants, 75.4% corresponded to faculty members, 18% to administrative personnel, and 6.6% to workers subject to the Labor Code (*Código del Trabajo*). Furthermore, there was a predominance of personnel with more than ten years of institutional tenure, which enhances the reliability of the responses obtained due to their accumulated knowledge regarding the institution's organizational and technological dynamics.



Descriptive analysis of Study Variables

Table 2.
Descriptive Statistics of the Analyzed Dimensions

DIMENSION	MEAN
Gestión del talento humano	3,61
Tecnología en la gestión del talento humano	4,43
Clima laboral	4,33
Productividad laboral	4,55

Note. Own elaboration.

The results demonstrate a favorable assessment across all analyzed dimensions, with scores exceeding the mean value of the scale used. The highest-rated dimension was labor productivity ($M = 4.55$), followed by technology in human resource management ($M = 4.43$) and organizational climate ($M = 4.33$). Conversely, human resource management obtained a mean of 3.61, establishing itself as the dimension with the lowest relative score, although it maintained a positive perception among participants.

These findings provide evidence that employees perceive the use of technological tools favorably and consider that they contribute to the fulfillment of their work activities, the strengthening of the organizational climate, and the enhancement of productivity.

Human Resource Management

The human resource management dimension reached a mean of 3.61, reflecting a favorable perception regarding aspects related to training, clarity of roles, and professional development. However, certain items associated with institutional recognition and workplace feedback exhibited relatively lower scores, highlighting opportunities for improvement in recognition mechanisms, motivation, and organizational communication.

These findings align with Chiavenato (2020), who maintains that human resource management constitutes a strategic axis for capability development and organizational performance enhancement. Likewise, León-Aguilar and Villanueva-Figueroa (2025) conclude that training and evaluation practices significantly contribute to work performance within public institutions.

Technology in Human Resource Management

The dimension of technology in human resource management obtained a mean of 4.43, standing out as one of the highest ratings in the study. Participants consider that institutional systems facilitate access to information, improve internal communication, and contribute to a better organization of work.

The results support the propositions of Bondarouk and Brewster (2016), who argue that digitalization transforms human resource management processes and strengthens organizational efficiency. Along the same lines, Maricahua (2025) highlights that digital transformation constitutes a strategic element to modernize HRM, optimize organizational processes, and strengthen institutional capacity through the use of emerging technologies. Similarly, Valencia et al. (2025) point out that technological modernization is a relevant factor for improving institutional performance and productivity in public organizations.

In the context of the Universidad Técnica de Machala, these findings suggest that institutional tools such as SIUTMACH, SIGEDA, and other digital platforms positively contribute to the management of academic and administrative activities.

Organizational Climate

The organizational climate dimension reached a mean of 4.33, showing a favorable perception regarding interpersonal relationships, institutional collaboration, and workplace well-being. Participants consider that there is an adequate environment for the development of their duties and that internal communication favors the fulfillment of institutional activities.

Nonetheless, aspects related to institutional leadership and conflict management presented relatively lower scores, suggesting opportunities to strengthen interpersonal management processes.

These results coincide with Andrade and Betancourth (2018), who argue that organizational climate constitutes a determining factor for employee well-being and performance. Furthermore, Sandoval and Carvajal (2024) highlight that leadership and communication are fundamental elements for the consolidation of healthy work environments.

Labor Productivity

Labor productivity recorded the highest mean in the study ($M = 4.55$), evidencing a positive perception regarding the fulfillment of activities, the achievement of institutional objectives, and the efficient use of available resources.

Participants consider that training and technological tools contribute favorably to the quality and efficiency of their work, thereby strengthening the achievement of organizational goals.

These findings are consistent with Dueñas Holguín and Moreno Cevallos (2024), who argue that human resource management practices strengthen administrative efficiency and organizational productivity. Similarly, León-Aguilar and Villanueva-Figueroa (2025) identify a positive relationship between human resource management and work performance in public institutions.

Relationship between the Study Variables

Table 3.
Correlation Between the Analyzed Variables

VARIABLES	HUMAN RESOURCE MANAGEMENT	TECNOLOGÍA	CLIMA LABORAL	PRODUCTIVIDAD
Human Resource Management	1,000	0,596	0,793	0,511
Technology	0,596	1,000	0,790	0,838
Labor Climate	0,793	0,790	1,000	0,719
Productivity	0,511	0,838	0,719	1,000

Note: Own elaboration.

The results demonstrate positive correlations among all analyzed variables. The strongest relationship was observed between technology and labor productivity ($r = .838$), indicating that a favorable perception regarding the use of technological tools is associated with higher levels of labor productivity.

Furthermore, a high positive relationship was identified between human resource management and organizational climate ($r = .793$), suggesting that better management practices are related to more favorable work environments. Similarly, the correlation between organizational climate and labor productivity ($r = .719$) provides evidence that positive organizational environments contribute to the strengthening of institutional performance.

These results align with Bondarouk and Brewster (2016), Valencia et al. (2025), and León-Aguilar and Villanueva-Figueroa (2025), who maintain that the integration of technology and strategic human resource management significantly influences productivity and organizational performance.

Integration of Results

In general terms, the obtained results provide evidence that technology-supported human resource management maintains a positive relationship with organizational climate and productivity within the Faculty of Business Sciences at the Universidad Técnica de Machala. The high assessment of the technology (4.43), organizational climate (4.33), and labor productivity (4.55) dimensions, coupled with the positive correlations found among these variables, support the premise that incorporating technological tools into institutional management processes constitutes a relevant factor for organizational strengthening.

Consequently, the findings allow for an affirmative answer to the research question and support the proposed hypothesis, demonstrating that technology-driven human resource management favorably influences organizational climate and labor productivity within the studied context. Furthermore, opportunities for improvement were identified regarding institutional recognition, performance feedback, leadership, and conflict management—aspects that could be strengthened through comprehensive human resource management strategies oriented toward employee well-being and performance.

Discussion

The obtained results indicate that technology-driven human resource management constitutes a strategic element to strengthen organizational climate and productivity within the context of the Faculty of Business Sciences at the Universidad Técnica de Machala. The high rating granted by participants to the technology ($M = 4.43$) and labor productivity ($M = 4.55$) dimensions, as well as the strong correlation identified between both variables ($r = .838$), demonstrate that the



incorporation of technological tools transcends the mere automation of administrative processes and becomes a factor that fosters organizational performance.

This interpretation aligns with Bondarouk and Brewster (2016), who argue that digital transformation alters the way organizations manage their personnel, and with Valencia et al. (2025), who conclude that technological modernization constitutes a relevant component for improving efficiency and performance in public institutions. Similarly, Trujillo et al. (2026) highlight that the incorporation of technological tools fosters professional development and strengthens institutional outcomes, aspects that correspond with the perceptions obtained in this research.

Regarding human resource management, the results show a favorable assessment of training processes, work organization, and professional development, although they also reveal opportunities for improvement in aspects related to institutional recognition, performance feedback, and leadership. These findings are consistent with the conception of Chiavenato (2020), who understands human resource management as a strategic process oriented toward capability development and the strengthening of organizational performance.

Likewise, Cabrera Dávila (2025) maintains that, in public institutions, strategic human resource management contributes to competence development and service quality improvement, while León-Aguilar and Villanueva-Figueroa (2025) and Dueñas Holguín and Moreno Cevallos (2024) emphasize that training, evaluation, and personnel development practices have a favorable impact on institutional performance. In this regard, the obtained results allow for the inference that consolidating policies oriented toward recognition and leadership strengthening could increase the positive impact of human resource management within the university context.

In reference to organizational climate, the favorable perception recorded by the participants confirms the importance of interpersonal relationships, communication, and collaboration as elements that promote organizational performance. However, the relatively lower scores observed in leadership and conflict management demonstrate that these components continue to pose challenges for institutional management. These results align with Andrade and Betancourth (2018), who identify organizational climate as a determining factor for employee well-being and commitment, as well as with Sandoval and Carvajal (2024), who highlight that effective communication, leadership, and emotional intelligence strengthen work environments and favor the achievement of organizational objectives. Consequently, strengthening these dimensions can contribute not only to improving the work environment but also to consolidating an organizational culture oriented toward institutional development.

Taken together, the findings facilitate an understanding that technology-driven human resource management, organizational climate, and productivity constitute closely related dimensions within the analyzed organizational context. The obtained results suggest that a favorable perception of the use of technological tools is associated with better perceptions of organizational climate and institutional productivity, especially when such tools are integrated with practices of training, communication, and human resource development. In this regard, the present study provides empirical evidence on the interaction of these variables within an Ecuadorian public higher education institution, thereby answering the proposed research question and providing useful information to guide institutional decision-making and future research on technology-driven human resource management.

Conclusions

- The present research enabled the analysis of the relationship between technology-driven human resource management, organizational climate, and labor productivity within the Faculty of Business Sciences at the Universidad Técnica de Machala, demonstrating that these variables maintain a close connection within the studied organizational context. The obtained results allowed for an answer to the research question and fulfilled the proposed objective by demonstrating that the incorporation of technological tools into human resource management processes is associated with favorable perceptions of organizational climate and institutional productivity.
- The findings revealed that the dimensions best rated by the participants were labor productivity and technology applied to human resource management, followed by organizational climate. These results reflect that the utilization of institutional systems and digital tools contributes to optimizing administrative and academic processes, thereby strengthening work organization, communication, and employee performance.
- Furthermore, the research identified that, while the general perception of human resource management is favorable, opportunities for improvement still exist regarding institutional recognition, performance feedback, leadership strengthening, and the management of interpersonal relationships. These aspects represent strategic elements for consolidating human resource management oriented toward individual well-being and organizational development.

- Finally, this study provides empirical evidence regarding the importance of integrating technology into human resource management within public higher education institutions, demonstrating that digital transformation constitutes a strategic resource to strengthen organizational efficiency, foster a positive organizational climate, and drive productivity. In this sense, the research contributes to the enhancement of scientific knowledge on technology-driven human resource management within the university sphere and offers valuable information for institutional decision-making and the design of future improvement strategies.

Limitations of the Study

One of the primary limitations of the present research resides in the fact that the study was conducted exclusively within the Faculty of Business Sciences at the Universidad Técnica de Machala. Consequently, the results correspond to the specific context analyzed and are not intended to be generalized to other higher education institutions. Furthermore, although the effective sample represented 42.6% of the target population, it incorporated participants from the distinct occupational groups within the academic unit, thereby providing sufficient evidence for the analysis of the investigated variables.

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