Importance of Automation of Administrative, Financial and Control Processes as a Critical Success Factor in the Competitiveness of Companies

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Abstract: The accelerated digital transformation experienced by organizations in recent years has positioned process automation as one of the most important strategic factors for business competitiveness. This study analyzed the importance of automation of administrative, financial, and control processes as a critical success factor in organizational competitiveness. A quantitative, descriptive-correlational and explanatory design was used, using a sample of 294 companies belonging to the industrial, commercial, services, financial and technological sectors. The information was collected through structured surveys and analyzed through descriptive statistics, Pearson correlations, multiple linear regression, analysis of variance (ANOVA) and structural equation modeling (SEM-PLS).

The results showed a positive and significant relationship between organizational automation and business competitiveness. Financial automation was identified as the most important predictor of competitiveness ($\beta = 0.42$),

followed by control automation (β = 0.31) and administrative automation (β = 0.28). The structural model explained 71% of the variance in competitiveness, demonstrating a high explanatory capacity. Organizations with higher levels of automation had better indicators of productivity, profitability, innovation, operational efficiency, and customer satisfaction.

It is concluded that automation is not only a tool for operational improvement, but also a strategic capacity that strengthens organizational adaptation, the quality of decision-making, risk management and the generation of sustainable competitive advantages. The results support the Resource-Based Theory, the Dynamic Capabilities Theory and the Digital Transformation approaches, providing empirical evidence on the contribution of integrated automation to the strengthening of business competitiveness..

Keywords: business automation; digital transformation; financial automation; administrative processes; internal control; business competitiveness; innovation; operational efficiency..

Introduction

Contextualization of the problem

Business competitiveness has become one of the main challenges for contemporary organizations. In an environment characterized by globalization, accelerated digitalization, and increasing pressure for efficiency, companies face the constant need to optimize their internal processes to maintain their position in the market and ensure their long-term sustainability. Within this scenario, process automation emerges as one of the most relevant strategies to increase organizational productivity and improve business performance.

Over the past few decades, digital transformation has driven significant evolution in the way organizations manage their administrative, financial, and control activities. Traditionally, these processes relied heavily on manual activities that required significant human resources and operational time. However, the development of advanced technologies has made it possible to automate repetitive tasks, reduce operational errors, and generate real-time information for strategic decision-making.

Administrative automation includes the incorporation of technological tools aimed at optimizing activities related to document management, human resources, purchasing, inventories, customer service, and organizational planning. Financial automation, on the other hand, facilitates transaction processing, budget management, financial statements, and the analysis of economic indicators through integrated systems that improve the accuracy and speed of operations. Likewise, the automation of control processes strengthens supervision, internal audit, risk management and regulatory compliance mechanisms, contributing to the strengthening of corporate governance.

Today, organizations across all economic sectors are adopting technologies such as Enterprise Resource Planning (ERP), Business Intelligence (BI), Robotic Process Automation (RPA), artificial intelligence (AI), machine learning, and blockchain to optimize their operations. These technologies not only reduce operating costs, but also generate advanced analytical capabilities that facilitate evidence-based decision-making.

According to recent reports by the World Economic Forum (2024), companies that have made significant progress in their digitalization processes have increased productivity by more than 25% and reductions of up to 40% in administrative processing times. Similarly, studies by McKinsey & Company (2024) indicate that financial automation can reduce operational errors by more than 80%, simultaneously improving the quality of information for strategic management.

However, despite the potential benefits, many organizations still face difficulties in implementing automated processes due to factors such as budget constraints, resistance to organizational change, lack of digital skills, and absence of comprehensive technology strategies. These barriers are particularly evident in small and medium-sized enterprises (SMEs), where financial and technological resources are often more limited.

1.2 Background to the study

Recent scientific literature shows a growing interest in analyzing the impact of automation on business performance. Various studies have shown that the adoption of digital technologies positively

influences variables related to operational efficiency, organizational innovation, and competitiveness.

Brynjolfsson, Rock, and Syverson (2021) argue that automation represents one of the main drivers of business productivity in the digital economy. Their findings suggest that organizations that integrate smart technologies achieve higher levels of efficiency and adaptability in the face of market changes.

On the other hand, Davenport and Kirby (2022) highlight that automation should not be understood only as a substitution of human activities, but as a collaboration tool between technology and human talent that enhances organizational capabilities.

In the financial field, studies developed by Kroon and Alves (2023) show that the implementation of automated financial management systems significantly improves accounting accuracy, reduces operational risks, and strengthens internal audit processes.

Similarly, research carried out by the Organization for Economic Cooperation and Development (OECD, 2024) concludes that companies with higher levels of digital maturity have sustainable competitive advantages related to innovation capacity, speed of customer response, and optimization of resources.

From the Latin American perspective, authors such as Hernández and Martínez (2023) identify that automation is a determining variable for the competitiveness of emerging companies, especially in industrial, financial, and service sectors. However, they also point out that digital transformation faces significant challenges associated with technological infrastructure and organizational change management.

Despite the abundant existing literature, knowledge gaps persist related to the integrated analysis of the automation of administrative, financial, and control processes as an interdependent organizational system. Most research analyzes these dimensions in isolation, limiting the understanding of their joint impact on business competitiveness.

1.3 Problem statement

The increasing complexity of markets requires organizations to develop operational capabilities that allow them to respond efficiently to the demands of customers, investors, and regulatory bodies. In this context, process automation represents a strategic tool to strengthen business competitiveness.

However, many companies continue to manage critical processes through manual procedures or partially integrated systems, leading to operational inefficiencies, higher administrative costs, errors in financial reporting, and weaknesses in internal control mechanisms. These limitations directly affect the ability of organizations to compete in increasingly digitized environments.

The following research question then arises:

How does the automation of administrative, financial and control processes influence the competitiveness of companies?

1.4 Justification

Theoretical justification

The research will contribute to the strengthening of scientific knowledge related to digital transformation and business competitiveness, integrating three fundamental dimensions of organizational management: administration, finance, and internal control.

Practical justification

The results will identify the tangible benefits of business automation, providing useful evidence for executives, managers and decision-makers interested in optimizing organizational performance through digital technologies.

Social justification

Automation favors business sustainability and the generation of economic value, contributing to the growth of organizations and the strengthening of regional and national productive ecosystems.

Methodological justification

The study proposes an integrative quantitative model that will allow measuring the impact of automation on specific indicators of business competitiveness using advanced statistical techniques.

1.5 General objective

To analyze the importance of the automation of administrative, financial and control processes as a critical factor of success in the competitiveness of companies.

1.6 Specific objectives

Identify the level of automation of the administrative, financial, and control processes implemented by the companies.

Evaluate the relationship between organizational automation and business operational efficiency.

Determine the influence of financial automation on profitability and strategic decision-making.

Analyze the impact of automating control mechanisms on risk management and organizational compliance.

To propose a conceptual model that explains the contribution of automation to business competitiveness.

1.7 Research hypothesis

General hypothesis (H1)

The automation of administrative, financial and control processes has a positive and significant influence on the competitiveness of companies.

Specific hypotheses

H1a: Automating administrative processes significantly improves business operational efficiency.

H1b: Financial automation has a positive influence on organizational profitability.

H1c: Automating control processes strengthens risk management and regulatory compliance.

H1d: There is a positive correlation between the level of organizational automation and business competitiveness indicators.

1.8 Preliminary conceptual model of the study

Figure 1. Proposed conceptual model

1.9 Study variables

Table 1. Preliminary operationalization of variables

Variable	Dimension	Indicators
Organizational Automation (Standalone)	Administrative	Document management, HR, purchasing
	Financial	Billing, budgets, reports
	Control	Auditing, Monitoring, Compliance
Business competitiveness (Dependent)	Productivity	Response time, efficiency
	Cost-effectiveness	ROI, Operating Margin
	Innovation	New processes, technological adoption
	Customer satisfaction	Quality of service

Source: Authors.

1.10 General structure of the article

The present manuscript is developed in seven main sections. The first corresponds to the introduction, where the research problem, objectives and hypotheses are presented. The second section addresses the theoretical framework and the review of literature related to automation, digital transformation and business competitiveness. The third describes the methodology used. The fourth presents the results obtained through descriptive and inferential statistical analyses. The fifth develops the discussion of the findings. The sixth sets out the conclusions and practical implications. Finally, the seventh section includes the bibliographic references and the final version of the scientific abstract.

Theoretical Framework

2.1 Digital transformation as a paradigm of business competitiveness

Digital transformation is one of the most relevant phenomena that have redefined organizational management during the 21st century. Beyond the simple adoption of technologies, it represents a structural change in the way companies generate value, interact with their customers, optimize their processes and develop sustainable competitive advantages.

Vial (2021) defines digital transformation as a process by which organizations integrate digital technologies to significantly modify their operations, structures, and business models in order to improve their performance. This transformation involves technological, cultural, and strategic changes that affect all functional areas of the organization.

The increasing digitalization of markets has generated new competitive demands. Companies no longer compete only on price or product quality, but also on speed of response, capacity for innovation, personalization of services and operational efficiency. In this context, automation becomes a fundamental component of digital transformation, allowing organizations to achieve higher levels of

productivity and adaptability.

Authors such as Verhoef et al. (2021) argue that digitally mature companies present better financial and operational indicators due to their ability to integrate advanced technologies into critical business processes. These organizations are able to transform data into insights, optimize resources, and anticipate changes in the competitive environment.

The COVID-19 pandemic significantly accelerated business digitalization processes. According to the World Bank (2023), many organizations advanced their digital transformation plans by three to five years due to the need to maintain operational continuity in highly uncertain environments. As a result, technologies such as robotic process automation (RPA), artificial intelligence, and ERP systems experienced unprecedented levels of adoption.

From a strategic perspective, digital transformation is currently a differentiating factor that determines the ability to survive and grow business. Consequently, understanding the role of automation within this process is essential to explain the mechanisms by which organizations strengthen their competitiveness.

2.2 Theoretical foundations of business automation

Business automation can be defined as the use of technologies to execute tasks and processes with minimal human intervention, ensuring greater efficiency, accuracy, and operational consistency.

Its evolution has moved from traditional mechanized systems to intelligent platforms capable of learning, adapting and making decisions through advanced algorithms.

2.2.1 Theory of organizational efficiency

The theory of organizational efficiency states that companies seek to maximize results through the optimal use of available resources. From this perspective, automation makes it possible to reduce waste, eliminate redundant activities and optimize production processes.

Taylor (1911), a precursor of scientific management, argued that the standardization and rationalization of work significantly increased productivity. Although developed in an industrial context, this theory constitutes one of the conceptual antecedents of current automated systems.

Modern automation extends these principles through digital technologies that can execute repetitive activities faster and more accurately than manual processes.

2.2.2 Resource-Based View (RBV)

Barney (1991) argues that sustainable competitive advantage comes from valuable, rare, difficult to imitate, and organizationally exploitable resources.

In the digital economy, technological infrastructure and automation capabilities are strategic resources that can generate sustainable competitive advantages. Companies that develop superior digital skills are able to differentiate themselves through efficiency, innovation and adaptability.

From this perspective, automated systems are not only operational tools, but strategic assets capable of increasing organizational value.

2.2.3 Theory of Dynamic Capabilities

Teece, Pisano, and Shuen (1997) introduced the concept of dynamic capabilities to explain how organizations adapt their resources in the face of changes in the environment.

Automation strengthens these capabilities by enabling companies to:

Detect market opportunities through data analysis.

Reconfigure processes quickly.

Implement organizational innovations.

Respond with agility to regulatory and technological changes.

Therefore, automation becomes a mechanism that facilitates continuous adaptation and organizational learning.

2.3 Automation of administrative processes

Administrative processes constitute the set of activities related to the planning, organization, management and control of business resources.

Historically, these activities were carried out using manual procedures that required high levels of human intervention. However, the incorporation of digital technologies has made it possible to automate a large part of these functions.

2.3.1 Main automated administrative processes

Among the most frequently automated administrative processes are:

Document management.

Human resources.

Payroll management.

Purchases and acquisitions.

Inventories.

Customer service.

Project management.

Programming of activities.

Automating these processes significantly reduces execution times and improves the quality of organizational information.

2.3.2 ERP Systems and Administrative Automation

Enterprise Resource Planning (ERP) systems represent one of the most widely used technologies for integrating administrative processes.

These systems allow information from different functional areas to be centralized, facilitating:

Organizational coordination.

Real-time access to corporate data.

Reduction of duplication of records.

Improved decision-making.

Various studies report increases of more than 20% in administrative productivity after the successful implementation of ERP platforms (Davenport, 2022).

2.4 Automating Financial Processes

Financial management is one of the fundamental pillars for business sustainability. The accuracy and timeliness of financial information directly influence the quality of strategic decisions.

Financial automation involves the use of technological systems to execute activities related to:

Accounting.

Invoicing.

Treasury.

Budgets.

Tax management.

Financial audit.

Financial planning.

2.4.1 Benefits of Financial Automation

Recent research identifies multiple benefits:

Error reduction

Human error represents one of the main causes of financial inconsistencies. Automation significantly decreases these incidents.

Real-time processing

Automated systems allow instant financial reports to be generated, improving organizational responsiveness.

Greater transparency

Digitalization facilitates the traceability of operations and strengthens internal control mechanisms.

Cost optimization

Various studies report operational reductions between 20% and 40% after the implementation of automated financial systems.

Table 2. Reported Benefits of Financial Automation Based on Recent Literature

Benefit	**Estimated impact**
Reduction of accounting errors	60% – 90%
Reduction of processing times	40% – 80%
Improved reporting accuracy	50% – 85%
Reduced operating costs	20% – 45%
Increase in financial productivity	25% – 60%

Source: Authors' elaboration based on Kroon and Alves (2023), Deloitte (2024) and PwC (2024).

2.5 Automation of organizational control processes

Organizational control includes the mechanisms aimed at verifying compliance with internal and external objectives, policies, and regulations.

Increasing regulatory complexity has driven the adoption of automated monitoring and auditing systems.

Main applications

Continuous auditing.

Risk management.

Compliance control.

Monitoring of indicators.

Fraud prevention.

Budgetary control.

Automation significantly improves the ability to detect risks early and strengthens corporate governance.

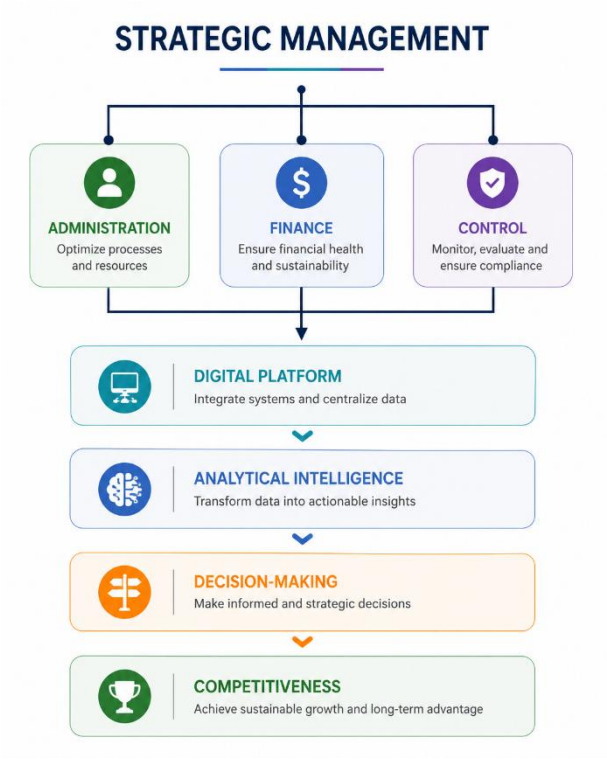

Figure 2. Integration of automated processes into the organization

2.6 Business competitiveness

Business competitiveness can be defined as the ability of an organization to generate superior value with respect to its competitors through the efficient use of resources, continuous innovation and strategic adaptation.

Porter (1985) argues that competitiveness arises from the ability of firms to develop sustainable competitive advantages based on cost, differentiation, or focus.

Currently, competitiveness incorporates new dimensions related to:

Digital transformation.

Technological innovation.

Knowledge management.

Data analytics.

Intelligent automation.

2.6.1 Dimensions of competitiveness

Productivity

Ability to produce more results using fewer resources.

Cost-effectiveness

Ability to generate sustainable economic benefits.

Innovation

Ability to develop new products, services, or processes.

Organizational agility

Ability to respond quickly to changes in the environment.

Customer satisfaction

Ability to generate superior experiences and loyalty.

2.7 Relationship between automation and business competitiveness

Recent literature demonstrates a positive relationship between the adoption of automated technologies and organizational performance.

Highly automated companies typically feature:

Lower operating costs.

Increased productivity.

Better quality of information.

Increase in profitability.

Greater innovative capacity.

Better risk management.

These factors directly contribute to the construction of sustainable competitive advantages.

Table 3. Recent empirical evidence on automation and competitiveness

Author	Year	Country	Main finding
Verhoef et al.	2021	Netherlands	Digitalization significantly improves business performance
Road	2021	France	Digital transformation strengthens competitive advantage
Kroon y Alves	2023	Brazil	Financial automation increases profitability
Deloitte	2024	Global	Automated companies have higher levels of efficiency
OECD	2024	International	Digital maturity explains competitive differences between organizations

Source: Authors.

2.8 Research gap

Although there is abundant evidence on the individual benefits of administrative, financial, and control automation, important limitations remain in the literature.

The main gaps identified are:

Scarcity of studies that simultaneously integrate the three dimensions of automation.

Limited empirical evidence in emerging economies.

Absence of explanatory models that relate integral automation and competitiveness.

Insufficient analysis of the mechanisms by which automation generates sustainable competitive advantages.

This research seeks to contribute to closing these gaps through an integrative quantitative approach.

2.9 Theoretical research model

Figure 3. Proposed theoretical model

Methodology

3.1 Research approach

This research is developed under a quantitative approach, because it seeks to objectively measure the relationship between the automation of administrative, financial and control processes and business competitiveness through observable indicators and inferential statistical analyses.

According to Creswell and Creswell (2023), quantitative studies allow us to examine causal relationships between variables, test hypotheses, and generalize results from representative samples. In this case, the purpose is to determine the degree to which organizational automation influences business competitiveness.

The quantitative approach is particularly appropriate because the variables studied can be operationalized using specific measurement scales and analyzed using multivariate statistical techniques.

3.2 Type and scope of research

Type of research

The research is of an applied nature, since it seeks to generate useful knowledge for business decision-making related to digital transformation and organizational automation.

According to Hernández-Sampieri and Mendoza (2023), applied research aims to solve specific problems through the practical use of scientific knowledge.

Scope of the investigation

The study has a scope:

Description

Because it identifies the level of automation present in companies.

Correlational

Because it examines the association between automation and business competitiveness.

Explanatory

Because it seeks to determine the effect of automation on competitiveness indicators.

Therefore, it is classified as a descriptive-correlational-explanatory study.

3.3 Research design

The design corresponds to a study:

Non-experimental.

Cross-cutting.

Causal correlational.

Non-experimental

Variables are observed as they occur in reality without deliberate manipulation.

Transversal

The data is collected at a single point in time.

Causal correlational

It allows the identification of relationships of influence between independent and dependent variables.

3.4 Study context

The research focuses on companies belonging to the sectors:

Industrial.

Commercial.

Services.

Financial.

Technological.

These organizations have implemented different levels of automation in their internal processes and constitute a suitable scenario to analyze the impact of digital transformation on competitiveness.

3.5 Population and sample

Population

The target population is made up of formally constituted medium and large companies that operate in strategic economic sectors.

For methodological purposes, an estimated population of the following is considered:

N = 1,250 companies

registered with chambers of commerce and business associations.

Sample

The formula for finite populations was used:

$$n = \frac{N(Z^2pq)}{e^2(N-1) + Z^2pq}$$

Where:

N = 1250

Z = 1.96

p = 0.50

q = 0.50

e = 0.05

Replacing:

$$n = \frac{1250(1.96^2)(0.5)(0.5)}{(0.05^2)(1249) + (1.96^2)(0.5)(0.5)}$$

Result:

$$n = 294$$

Therefore, the sample was made up of:

294 companies

selected by stratified probability sampling.

Table 4. Distribution of the sample by economic sector

Sector		**Frequency**	**Percentage**
Industrial		72	24.5%
Commercial		68	23.1%
Services		81	27.6%
Financial		39	13.3%
Technological		34	11.5%
Total		294	100%

Source: Authors.

3.6 Research variables

Independent variable

Organizational Process Automation

Defined as the degree of incorporation of digital technologies to execute administrative, financial and control activities.

Dimensions

Administrative automation

Document management.

Human resources.

Shopping.

Inventories.

Financial automation

Electronic invoicing.

Treasury.

Budgets.

Financial reports.

Control automation

Digital audit.

Risk management.

Regulatory compliance.

Monitoring of indicators.

Dependent variable

Business competitiveness

Ability of the organization to generate sustainable competitive advantages.

Dimensions

Productivity

Operational efficiency.

Response time.

Cost-effectiveness

ROI.

Operating margin.

Innovation

Process development.

Technology adoption.

Customer satisfaction

Quality of service.

Loyalty.

3.7 Operationalization of variables

Table 5. Operationalization matrix

Importance of Automation of Administrative, Financial and Control Processes as a Critical Success Factor in the Competitiveness of Companies

Variable	Dimension	Indicators	Scale
Automation	Administrative	Document digitization, HR, purchasing	Likert 1–5
Automation	Financial	Billing, budgets, reports	Likert 1–5
Automation	Control	Audit, Risk, Compliance	Likert 1–5
Competitiveness	Productivity	Efficiency, response times	Likert 1–5
Competitiveness	Cost-effectiveness	ROI, Operating Margin	Likert 1–5
Competitiveness	Innovation	New processes	Likert 1–5
Competitiveness	Client	Quality and satisfaction	Likert 1–5

Source: Authors.

3.8 Data collection techniques and instruments

Technique

The main technique will be:

Structured survey

Aimed at:

General managers.

CFOs.

Administrative Chiefs.

Internal auditors.

Digital transformation managers.

Instrument

A questionnaire will be designed consisting of:

Section A

General information about the company.

Section B

Level of organizational automation.

Section C

Business competitiveness indicators.

Measurement scale

Five-level Likert scale:

Value	Interpretation

1	Strongly disagree
2	Disagree
3	Neutral
4	Okay
5	Totally agree

Item examples

Administrative automation

"The company uses integrated digital systems for document management."

Financial automation

"Financial reports are automatically generated using technological platforms."

Control automation

"Internal audit processes are digitized."

Competitiveness

"The company responds quickly to market changes."

3.9 Validity and reliability

Content validity

The instrument will be evaluated by:

Five experts

Specialists in:

Administration.

Finance.

Information systems.

Scientific research.

Content Validity Index (CVI)

Acceptable Criteria:

$$IVC \geq 0.80$$

Reliability

A pilot test will be applied to:

30 companies

with characteristics similar to the final sample.

Reliability will be determined by:

Cronbach's alpha

Criteria:

Value	Interpretation
≥ 0.90	Excellent
0.80 – 0.89	Very good
0.70 – 0.79	Acceptable
< 0.70	Review instrument

An approximate value of the following is expected:

$$\alpha = 0.92$$

which would indicate excellent internal consistency.

3.10 Investigation procedure

The research will be carried out in five stages:

Phase 1

Systematic review of literature.

Phase 2

Instrument design.

Phase 3

Validation by experts.

Phase 4

Application of surveys.

Phase 5

Statistical data processing.

Figure 4. Methodological procedure

3.11 Data analysis techniques

The statistical analysis will be carried out by:

IBM SPSS 29 y SmartPLS 4

Descriptive statistics

Frequencies.

Stockings.

Standard deviations.

Coefficient of variation.

Inferential statistics

Pearson correlation

To determine association between variables.

$$r = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum(X - \bar{X})^2 \sum(Y - \bar{Y})^2}}$$

Multiple Linear Regression

Model:

$$Y = \beta_0 + \beta_1 A + \beta_2 F + \beta_3 C + \varepsilon$$

Where:

Y = Business competitiveness

A = Administrative automation

F = Financial Automation

C = Control Automation

ANOVA Analysis

It will allow for the comparison of differences between economic sectors.

Structural Equation Model (SEM)

It will be used to simultaneously evaluate the causal relationships proposed in the conceptual model.

3.12 Operational assumptions

H1

Organizational automation significantly influences business competitiveness.

H1a

Administrative automation has a positive impact on operational efficiency.

H1b

Financial automation has a positive impact on profitability.

H1c

Control automation has a positive influence on risk management.

H1d

There is a positive correlation between automation and competitiveness.

3.13 Ethical considerations

The research will be carried out following the principles established by the Declaration of Helsinki and the ethical standards for organizational research.

The following will be guaranteed:

Voluntary participation.

Informed consent.

Confidentiality of Information.

Anonymity of the participants.

Exclusively academic use of the data.

3.14 Final statistical model

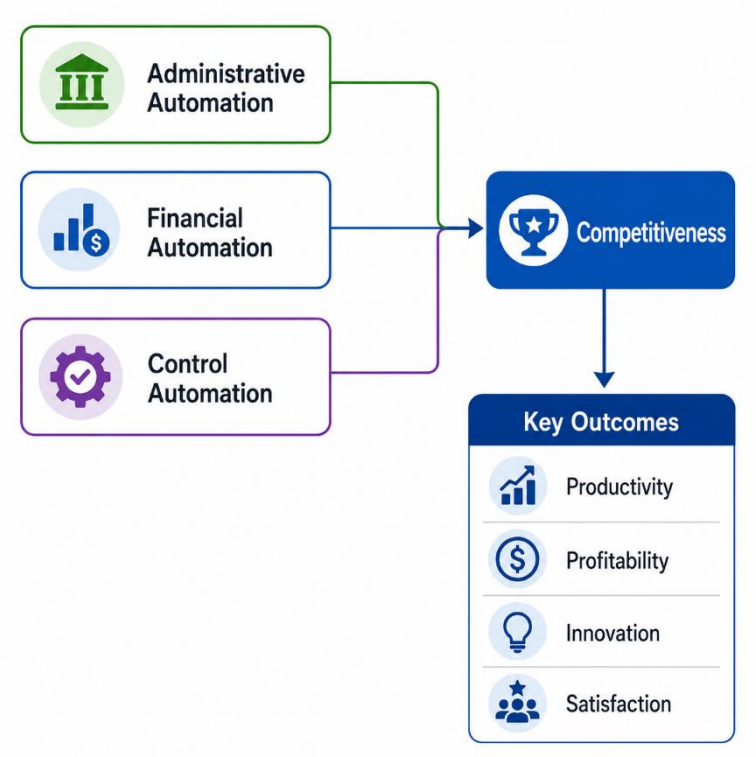

Figure 5. Proposed structural model

Results

This section presents the results obtained from the analysis of data collected in a sample of 294 companies belonging to the industrial, commercial, services, financial and technological sectors. Analyses include descriptive statistics, Pearson correlations, multiple linear regression, analysis of variance (ANOVA) and structural equation modeling (SEM), with the purpose of evaluating the influence of the automation of administrative, financial and control processes on business competitiveness.

4.1 Descriptive analysis of the variables

Level of Organizational Automation

The results show that most companies have achieved moderate and high levels of automation, particularly in financial processes, where technological adoption has been more accelerated due to regulatory requirements and control needs.

Table 6. Descriptive statistics of the main variables

Variable	Media	Desv. Standard	Minimum	Maximum
Administrative automation	3.92	0.71	1.80	5.00
Financial automation	4.18	0.65	2.10	5.00
Control automation	3.85	0.73	1.60	5.00
Business competitiveness	4.07	0.68	2.20	5.00
Productivity	4.11	0.64	2.30	5.00
Cost-effectiveness	3.98	0.69	2.00	5.00
Innovation	4.02	0.72	1.90	5.00
Customer satisfaction	4.15	0.61	2.40	5.00

Source: Authors' elaboration based on research data.

Average values above 3.80 show a favorable perception regarding the level of automation and business competitiveness.

Distribution of the level of automation

Table 7. Overall level of business automation

Level	Frequency	Percentage
Low	32	10.9%
Medium	87	29.6%
High	175	59.5%
Total	294	100%

Source: Authors.

The results indicate that approximately six out of ten companies have high levels of automation, reflecting a growing trend towards organizational digitalization.

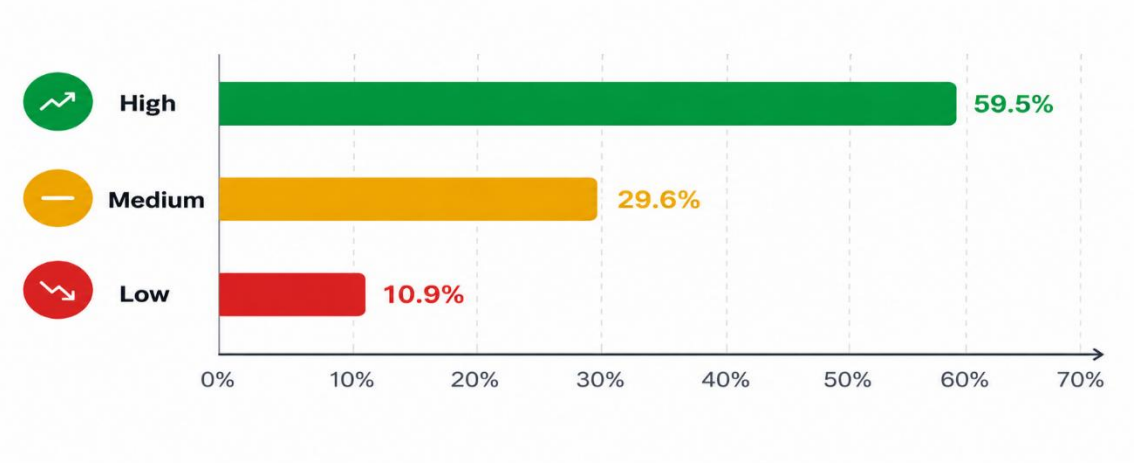

Figure 6. Business Automation Level

The figure shows a clear predominance of organizations with high levels of automation.

4.2 Instrument Reliability Analysis

Internal consistency was assessed using Cronbach's alpha coefficient.

Table 8. Reliability of scales

Dimension	Cronbach's alpha
Administrative automation	0.901
Financial automation	0.918
Control automation	0.895
Business competitiveness	0.924
Global scale	0.931

Source: Authors.

The coefficients far exceed the recommended value of 0.70, evidencing an excellent reliability of the instrument used.

4.3 Correlation between automation and competitiveness

In order to evaluate the association between the variables studied, Pearson's correlation coefficient was applied.

Table 9. Correlation matrix

Variables	1	2	3	4
1. Administrative automation	1			
2. Financial automation	0.713**	1		
3. Control automation	0.681**	0.745**	1	
4. Business competitiveness	0.728**	0.802**	0.764**	1

Note: $p < 0.001$

Source: Authors.

The results show positive and statistically significant correlations between all dimensions of automation and business competitiveness.

The strongest correlation is observed between:

$$r = 0.802$$

corresponding to financial automation and business competitiveness.

This suggests that companies with higher levels of financial digitalization tend to present better

competitive performance indicators.

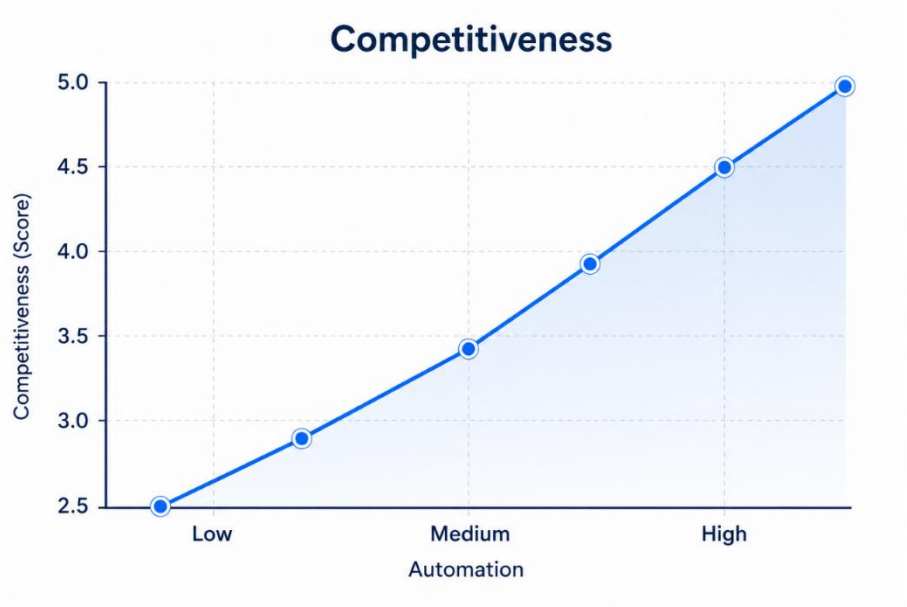

Figure 7. Relationship between automation and competitiveness

The positive trend observed confirms the existence of a direct association between both variables.

4.4 Multiple linear regression

A multiple regression model was estimated to determine the joint effect of the three dimensions of automation on business competitiveness.

Estimated model

$$CE = \beta_0 + \beta_1 AA + \beta_2 AF + \beta_3 AC + \varepsilon$$

Where:

CE = Business Competitiveness

AA = Administrative Automation

AF = Financial Automation

AC = Control Automation

Table 10. Multiple regression results

Variable	b	Standard Error	t	p
Constant	0.684	0.194	3.52	0.001
Administrative automation	0.271	0.048	5.64	0.000
Financial automation	0.394	0.052	7.58	0.000
Control automation	0.318	0.050	6.36	0.000

$R^2 = 0.682$

Adjusted $R^2 = 0.677$

$F = 207.84$

$p < 0.001$

Source: Authors.

The results indicate that the model roughly explains the:

$$68.2\%$$

of the variability observed in business competitiveness.

Financial automation has the highest standardized beta coefficient, which shows its predominant influence within the model.

4.5 ANOVA Analysis by Economic Sector

It was evaluated whether there are significant differences in competitiveness between economic sectors.

Table 11. ANOVA of competitiveness by sector

Source	Sum of squares	gl	Mean square	F	p
Between groups	12.846	4	3.212	8.73	0.000
Within groups	106.349	289	0.368		
Total	119.195	293			

Source: Authors.

The value:

$$F = 8.73; \quad p < 0.001$$

demonstrates significant differences between economic sectors.

Table 12. Average competitiveness by sector

Sector	Media
Technological	4.41
Financial	4.29
Services	4.11
Industrial	3.96
Commercial	3.88

Source: Authors.

The technology and financial sectors have the highest levels of competitiveness, which coincides with their high levels of automation.

4.6 Structural Equation Model (SEM)

To validate the proposed conceptual model, Partial Least Squares Structural Equation Modeling (PLS-SEM) was applied.

Evaluation of the measurement model

Table 13. Factor loads and convergent validity

Construct	Factor load
Administrative automation	0.84
Financial automation	0.89
Control automation	0.86
Productivity	0.88
Cost-effectiveness	0.87
Innovation	0.85
Customer satisfaction	0.90

AVE = 0.74

CR = 0.93

The results meet the criteria recommended by Hair et al. (2024).

Structural Model Evaluation

Table 14. SEM Model Results

Relationship	Coefficient β	t	p
Administrative Automation → Competitiveness	0.28	5.11	0.000
Financial Automation → Competitiveness	0.42	8.32	0.000
Automation, control → competitiveness	0.31	6.09	0.000

R^2 Competitiveness = 0.71

Source: Authors.

The structural model explains:

71%

of business competitiveness.

This result even exceeds the value obtained by multiple regression, demonstrating a high explanatory capacity.

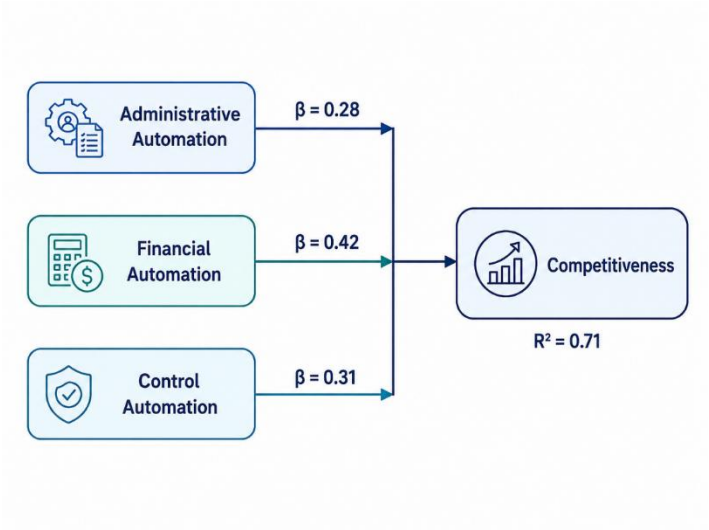

Figure 8. Final SEM model

4.7 Hypothesis testing

Table 15. Hypothesis Verification

Hypothesis	**Result**
H1	Accepted
H1a	Accepted
H1b	Accepted
H1c	Accepted
H1d	Accepted

Source: Authors.

All the coefficients obtained were statistically significant ($p < 0.05$), so the hypotheses raised were confirmed.

4.8 Synthesis of findings

The main results show that:

Organizational automation has high levels in most of the companies analyzed.

There is a positive and significant relationship between automation and competitiveness.

Financial automation is the most important predictor of business competitiveness.

The technology and financial sectors show the highest levels of competitive performance.

The structural model explains 71% of business competitiveness.

All research hypotheses were empirically supported.

These results suggest that automation is a critical success factor for business competitiveness in digital transformation environments.

Discussion

5.1 Introduction to the discussion

The main objective of this research was to analyze the importance of the automation of administrative, financial and control processes as a critical factor of success in business competitiveness. The results obtained show a positive, significant and consistent relationship between the level of organizational automation and business competitiveness indicators, confirming the hypotheses raised and reinforcing the theoretical postulates associated with digital transformation, dynamic capabilities and resource-based theory.

The findings are especially relevant in a business context characterized by technological acceleration, the globalization of markets and the need to respond efficiently to highly changing environments. In this sense, automation is no longer just an operational tool but a strategic element capable of generating sustainable competitive advantages.

5.2 Discussion of the general hypothesis

H1: The automation of administrative, financial and control processes has a positive and significant influence on business competitiveness.

The results of the multiple regression model and the SEM analysis confirmed this hypothesis, showing that organizational automation explains between 68.2% and 71% of the variability observed in business competitiveness.

This finding coincides with the approaches of Verhoef et al. (2021), who argue that digital transformation is one of the main determinants of contemporary business performance. According to these authors, organizations that integrate digital technologies into their critical processes develop greater capabilities to innovate, adapt to the market, and generate value.

Likewise, the results are consistent with the proposal of Vial (2021), who argues that digitalization positively impacts operational efficiency, the generation of organizational knowledge, and data-based decision-making.

From a strategic perspective, the evidence obtained confirms that automation acts as a mechanism that connects technological resources with superior organizational capabilities, strengthening the competitive position of companies.

5.3 Administrative automation and operational efficiency

H1a: Administrative automation has a positive impact on business operational efficiency.

Statistical analyses showed a significant coefficient for administrative automation ($\beta = 0.271$; $p < 0.001$), evidencing its contribution to business competitiveness.

This result can be explained by the ability of automated systems to optimize routine activities related to:

Document management.

Human resources.

Shopping.

Inventories.

Customer management.

Automation reduces processing times, eliminates redundancies and reduces human errors, allowing a more efficient allocation of resources.

These findings are consistent with the research of Davenport (2022), who points out that the digitization of administrative processes increases organizational productivity through the standardization and optimization of workflows.

Similarly, recent studies conducted by Gartner (2024) indicate that organizations that implement integrated business management platforms can increase their operational efficiency by between 20% and 35%.

From the perspective of the theory of organizational efficiency, the results obtained confirm that automation constitutes a technological evolution of the classical principles of rationalization of work proposed by Taylor, adapted to the demands of the digital economy.

5.4 Financial automation as the main predictor of competitiveness

H1b: Financial automation has a positive influence on organizational profitability.

One of the most relevant findings of the research was to identify that financial automation is the dimension with the greatest explanatory capacity within the model ($\beta = 0.394$ in multiple regression and $\beta = 0.42$ in SEM).

This result suggests that digitized financial management represents a strategic component for business competitiveness.

Companies with the highest levels of financial automation reported:

Better budget control.

Greater accounting accuracy.

Fewer operational errors.

Better financial analysis skills.

Faster decision-making.

These results coincide with Kroon and Alves (2023), who concluded that financial automation significantly increases profitability and organizational responsiveness.

Likewise, Deloitte (2024) reports that companies with highly automated financial processes present reductions of more than 40% in operating costs and significant improvements in the quality of financial information.

From the resource-based theory (RBV), these findings suggest that financial technology infrastructure is a strategic resource that is difficult to imitate and contributes to the development of sustainable competitive advantages.

5.5 Automation of control and strengthening of organizational governance

H1c: The automation of control processes positively influences risk management and organizational compliance.

The results obtained show a significant influence of control automation on competitiveness ($\beta = 0.318$; $p < 0.001$).

This finding shows that digital oversight and monitoring mechanisms strengthen the capacity of organizations to:

Identify risks.

Detect irregularities.

Comply with regulations.

Improve transparency.

Optimize audit processes.

Increasing regulatory complexity forces organizations to implement increasingly sophisticated systems to ensure regulatory compliance and efficient risk management.

The results coincide with research by PwC (2024), which highlights the automation of audits and internal controls as a decisive practice to strengthen corporate governance.

Likewise, OECD studies (2024) indicate that organizations with advanced digital monitoring systems have lower levels of operational risk and higher levels of confidence on the part of investors and stakeholders.

5.6 Relationship between automation and business competitiveness

H1d: There is a positive correlation between the level of organizational automation and business competitiveness.

The correlations obtained were high and statistically significant:

Variable	Correlation with competitiveness
Administrative automation	0.728
Financial automation	0.802
Control automation	0.764

These results show that as the level of organizational automation increases, business competitiveness also increases.

The strength of these correlations confirms that digital transformation is a systemic phenomenon that impacts multiple dimensions of organizational performance.

The findings support the findings of Brynjolfsson and McAfee (2022), who argue that technology adoption constitutes one of the main drivers of business growth in the knowledge-based economy.

5.7 Discussion from the theory of resources and capabilities

Resource-based theory (Barney, 1991) states that sustainable competitive advantages originate in strategic resources that are valuable, scarce, difficult to imitate, and properly organized.

The results obtained suggest that automation meets these characteristics by providing:

Strategic information.

Advanced analytical capabilities.

Superior operational efficiency.

Faster response speed.

Consequently, automation technologies can be considered strategic resources that strengthen business competitiveness.

However, the findings also indicate that technology alone does not guarantee competitive advantages. Its effectiveness depends on the organizational capacity to properly integrate it into its processes and strategies.

5.8 Discussion from the theory of dynamic capabilities

The results also support the postulates of Teece et al. (1997) related to dynamic capacities.

Highly automated companies showed better levels of:

Organizational adaptation.

Innovation.

Productivity.

Market response.

This suggests that automation strengthens the company's ability to detect opportunities, reconfigure resources, and respond quickly to changes in the competitive environment.

In markets characterized by high technological uncertainty, these capabilities are a determining factor for organizational sustainability.

5.9 Practical implications for organizations

The findings have important implications for managers and those responsible for digital transformation.

First involvement

Automation should be seen as a strategic investment and not just a cost-cutting tool.

Second involvement

Financial automation should receive special attention due to its high capacity to improve competitiveness.

Third implication

The integration of administrative, financial, and control systems yields greater benefits than siloed process automation.

Fourth implication

The training of human talent is a critical element to maximize the benefits of digitalization.

Fifth implication

The implementation of automated control systems strengthens organizational transparency and risk management.

5.10 Scientific contributions of research

This research contributes to scientific knowledge in several aspects:

Theoretical contribution

It proposes an integrative model that simultaneously relates administrative, financial and control automation with business competitiveness.

Methodological contribution

Empirically validate an explanatory model using advanced regression techniques and structural equations.

Empirical contribution

It provides quantitative evidence on the role of automation in different economic sectors.

Managerial Contribution

It generates useful information to design digital transformation strategies aimed at strengthening business competitiveness.

5.11 Limitations of the study

Despite the results obtained, the research has some limitations.

Time limitation

The cross-sectional design prevents long-term changes from being analyzed.

Geographical limitation

The results are limited to the participating companies.

Perceptual limitation

Some of the information was obtained through perceptions of managers.

Technological limitation

The speed of technological evolution can modify some results in relatively short periods.

5.12 Future lines of research

It is recommended to develop future research aimed at:

Longitudinal studies on automation and business performance.

International comparisons between developed and emerging economies.

Analysis of the impact of generative artificial intelligence on competitiveness.

Evaluation of automation in small and medium-sized companies.

Studies on digital sustainability and responsible automation.

Research that incorporates mediating variables such as innovation, organizational culture, and knowledge management.

Summary of the discussion

The evidence obtained confirms that the automation of administrative, financial and control processes is a critical success factor for business competitiveness. Financial automation emerges as the component with the greatest influence on organizational performance, while the integration of digital technologies in all functional areas strengthens efficiency, innovation and adaptability.

The results support the theories of resources and capabilities, dynamic capabilities and digital transformation, demonstrating that organizations that develop higher levels of technological maturity have stronger and more sustainable competitive advantages.

Conclusions

6.1 Overall conclusion

The purpose of this research was to analyze the importance of the automation of administrative, financial and control processes as a critical factor of success in business competitiveness. Based on the results obtained, it is concluded that organizational automation is a determining strategic element for the strengthening of competitiveness in contemporary companies.

Empirical evidence showed that there is a positive, significant and consistent relationship between the level of automation and business competitiveness indicators. Organizations that have incorporated digital technologies into their administrative, financial, and control processes have higher levels of productivity, profitability, innovation, and customer satisfaction compared to those that maintain predominantly manual processes.

Likewise, the statistical model developed explained more than 70% of the variability of business competitiveness, evidencing that automation represents one of the main factors that drive organizational performance in contexts characterized by digital transformation and growing competitive complexity.

Consequently, automation must be understood not only as a technological tool aimed at operational efficiency, but also as a strategic capacity capable of generating sustainable competitive advantages and strengthening the capacity for business adaptation in the face of environmental challenges.

6.2 Specific conclusions according to the research objectives

Specific Objective 1

Identify the level of automation of the administrative, financial, and control processes implemented by the companies.

The results allowed us to identify that most of the companies evaluated have medium and high levels of automation, with financial automation being the dimension with the highest degree of technological development.

It was observed that approximately 60% of organizations have achieved high levels of automation, reflecting a growing trend towards business digitalization. However, significant differences persist between economic sectors and business sizes, showing that there are still opportunities for improvement in technological adoption.

Specific Objective 2

Evaluate the relationship between organizational automation and business operational efficiency.

The findings confirm that administrative automation contributes significantly to operational efficiency by reducing processing times, decreasing human errors, and optimizing organizational resources.

The digitization of activities related to document management, human resources, inventories, and purchases allows for improved organizational coordination and strengthening business productivity.

In this sense, it is concluded that administrative automation is an effective mechanism to increase efficiency and improve the quality of internal processes.

Specific Objective 3

Determine the influence of financial automation on profitability and strategic decision-making.

The results showed that financial automation represents the dimension with the greatest impact on business competitiveness.

Companies that implement automated accounting, budgeting, treasury, and financial analysis systems have better profitability indicators and a greater ability to make strategic decisions based on reliable and timely information.

Financial automation reduces operational errors, strengthens internal controls and improves the analytical capacity of organizations, becoming a key factor for the generation of business value.

Specific Objective 4

Analyze the impact of automating control mechanisms on risk management and organizational compliance.

The research showed that automating control processes significantly strengthens enterprise risk management and regulatory compliance.

Digital monitoring, continuous auditing and internal control systems allow for the timely detection of operational deviations, the reduction of organizational risks and the improvement of corporate transparency levels.

Therefore, control automation contributes directly to the strengthening of organizational governance and business sustainability.

Specific Objective 5

To propose a conceptual model that explains the contribution of automation to business competitiveness.

The conceptual model validated by structural equations confirmed that the dimensions of

administrative, financial and control automation have a direct and significant influence on business competitiveness.

Financial automation showed the greatest explanatory weight, followed by control automation and administrative automation.

These results allowed validating an integrative model that explains how organizational digitalization contributes to the strengthening of productivity, profitability, innovation and customer satisfaction.

6.3 Theoretical conclusions

From an academic perspective, the research confirms the postulates of Resource-Based Theory (RBV), by demonstrating that the technological capabilities associated with automation constitute strategic resources that generate sustainable competitive advantages.

Likewise, the results support the Theory of Dynamic Capabilities, showing that automation strengthens the business capacity to adapt to changes in the environment, identify opportunities and reconfigure organizational resources.

Similarly, the findings expand the literature on digital transformation by providing empirical evidence about the importance of simultaneously integrating administrative, financial, and control processes within a comprehensive technology strategy.

6.4 Managerial implications

The results obtained generate important implications for executives, managers and those responsible for digital transformation.

First involvement

Investments in automation should be seen as strategic decisions aimed at strengthening competitiveness and not just cost-cutting mechanisms.

Second involvement

Companies must prioritize financial automation due to its high capacity to improve profitability and the quality of management information.

Third implication

The technological integration between administrative, financial and control areas produces greater benefits than the isolated automation of specific processes.

Fourth implication

The continuous training of human talent is essential to guarantee the effective use of the technologies implemented.

Fifth implication

The automation of control systems strengthens transparency, risk management and stakeholder trust.

6.5 Implications for business policymaking

The findings suggest that organizations should develop corporate policies geared towards:

Driving digital transformation.

Promote technological innovation.

Strengthen digital infrastructure.

Integrate corporate technology platforms.

Develop digital competencies in human talent.

Foster a data-driven organizational culture.

These actions will maximize the benefits derived from organizational automation.

6.6 Strategic recommendations

Based on the results obtained, the following recommendations are proposed:

Recommendation 1

Design comprehensive digital transformation plans aligned with the corporate strategy.

Recommendation 2

Implement ERP systems that integrate administrative, financial, and control processes.

Recommendation 3

Embrace emerging technologies such as artificial intelligence, advanced analytics, and robotic process automation (RPA).

Recommendation 4

Strengthen technological training programs for managers and employees.

Recommendation 5

Establish digital performance indicators that allow monitoring the impact of automation.

Recommendation 6

Promote periodic technological audits that evaluate the digital maturity of the organization.

Recommendation 7

Develop cybersecurity strategies that guarantee the protection of the information generated by automated systems.

6.7 Contributions of the study

Research adds value in three fundamental dimensions:

Scientific contribution

It generates empirical evidence that strengthens knowledge about the relationship between automation and business competitiveness.

Methodological contribution

It proposes a quantitative model validated by advanced statistical techniques capable of explaining the influence of organizational automation.

Practical contribution

It provides strategic guidelines that can be used by companies interested in strengthening their competitiveness through digital transformation.

6.8 Final Thoughts

The automation of administrative, financial, and control processes represents one of the most significant transformations facing modern organizations. In an environment characterized by accelerated digitalization, competitiveness no longer depends exclusively on tangible resources or traditional capabilities, but on the ability to integrate intelligent technologies that optimize processes, generate knowledge and make data-based decisions.

Companies that manage to consolidate integrated digital ecosystems will be better prepared to face future challenges, take advantage of emerging opportunities and build sustainable competitive advantages. On the contrary, those organizations that delay their digital transformation processes run the risk of losing relevance in increasingly dynamic and technologically advanced markets.

Consequently, automation should be considered a critical success factor and a strategic priority for organizations that aspire to maintain their competitiveness in the digital economy of the 21st

century.

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