

PREDICTIVE MODELS IN LOGISTICS: THE USE OF ARTIFICIAL INTELLIGENCE IN THE MANAGEMENT OF PURCHASING, INVENTORY, AND DEMAND

MODELOS PREDITIVOS EM LOGÍSTICA: O USO DA INTELIGÊNCIA ARTIFICIAL NA GESTÃO DE COMPRAS, ESTOQUES E DEMANDAS

MODELOS PREDICTIVOS EN LOGÍSTICA: EL USO DE LA INTELIGENCIA ARTIFICIAL EN LA GESTIÓN DE COMPRAS, INVENTARIOS Y DEMANDAS



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ABSTRACT

The increasing incorporation of technologies based on artificial intelligence has generated remarkable transformations in logistics management, especially regarding the application of predictive models used in functions related to purchasing, inventory management, and demand analysis. These changes have enabled improvements in logistics processes, optimizing operations and bringing greater efficiency to the execution of these essential

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activities. In this context, the use of data and the adoption of analytical algorithms have allowed a significant increase in forecasting accuracy, while also improving the coordination of different operations within an organization. Consequently, this has favored decision-making processes that are more consistent, particularly in an organizational environment that is becoming increasingly dynamic and integrated, reflecting the complexity and interaction among various areas and processes. The general objective of this research is to analyze the application of predictive models based on artificial intelligence in the management of purchasing, inventory, and demand, aiming at the optimization of logistics processes and the improvement of decision-making. Regarding the methodology, a qualitative approach was adopted, focused on a detailed understanding of the implications of using artificial intelligence in logistics. As a research procedure, a literature review was conducted through the systematic analysis of relevant scientific publications, enabling the construction of a consistent theoretical basis for the development of the study. In summary, the research demonstrated that the application of predictive models based on artificial intelligence in the management of purchasing, inventory, and demand contributes to the optimization of logistics processes and to improved decision-making by promoting greater forecasting accuracy, better resource allocation, and higher operational efficiency throughout the supply chain.

Keywords: Artificial Intelligence. Predictive Models. Inventory Management. Logistics.

RESUMO

A crescente incorporação de tecnologias que possuem como fundamento a inteligência artificial tem gerado transformações notáveis na administração logística, principalmente no que diz respeito à aplicação de modelos preditivos, os quais são utilizados nas funções relacionadas a compras, gerenciamento de estoques e análise de demandas. Essas mudanças têm possibilitado um aprimoramento nos processos logísticos, otimizando as operações e trazendo uma maior eficiência na condução dessas atividades essenciais. Nesse cenário, a aplicação de dados e a adoção de algoritmos analíticos têm permitido um aumento significativo na precisão das previsões, ao mesmo tempo em que melhoram a coordenação das diferentes operações dentro de uma organização. Isso, conseqüentemente, tem favorecido a realização de decisões que se mostram mais consistentes, especialmente em um contexto organizacional que se torna cada vez mais dinâmico e integrado, refletindo a complexidade e a interação entre diversas áreas e processos. O objetivo geral desta pesquisa consiste em analisar a aplicação de modelos preditivos baseados em inteligência artificial na gestão de compras, estoques e demandas, visando à otimização dos processos logísticos e à melhoria da tomada de decisão. No que se refere à metodologia, adotou-se uma abordagem qualitativa, voltada à compreensão detalhada das implicações do uso da inteligência artificial na logística. Como procedimento de pesquisa, utilizou-se a revisão bibliográfica, desenvolvida por meio da análise sistemática de produções científicas relevantes, o que possibilitou a construção de uma base teórica consistente para o desenvolvimento do estudo. Em síntese, a pesquisa evidenciou que a aplicação de modelos preditivos baseados em inteligência artificial na gestão de compras, estoques e demandas contribui para a otimização dos processos logísticos e para a melhoria da tomada de decisão, ao promover maior precisão nas previsões, melhor alocação de recursos e maior eficiência operacional ao longo da cadeia de suprimentos.

Palavras-chave: Inteligência Artificial. Modelos Preditivos. Gestão de Estoques. Logística.

RESUMEN

La creciente incorporación de tecnologías basadas en inteligencia artificial ha generado transformaciones notables en la gestión logística, especialmente en lo que respecta a la aplicación de modelos predictivos utilizados en funciones relacionadas con compras, gestión de inventarios y análisis de demandas. Estos cambios han posibilitado una mejora en los procesos logísticos, optimizando las operaciones y aportando una mayor eficiencia en la ejecución de estas actividades esenciales. En este contexto, la utilización de datos y la adopción de algoritmos analíticos han permitido un aumento significativo en la precisión de las previsiones, al mismo tiempo que mejoran la coordinación de las diferentes operaciones dentro de una organización. Esto, en consecuencia, ha favorecido la toma de decisiones más consistentes, especialmente en un entorno organizacional cada vez más dinámico e integrado, reflejando la complejidad y la interacción entre diversas áreas y procesos. El objetivo general de esta investigación consiste en analizar la aplicación de modelos predictivos basados en inteligencia artificial en la gestión de compras, inventarios y demandas, con el propósito de optimizar los procesos logísticos y mejorar la toma de decisiones. En cuanto a la metodología, se adoptó un enfoque cualitativo, orientado a la comprensión detallada de las implicaciones del uso de la inteligencia artificial en la logística. Como procedimiento de investigación, se utilizó la revisión bibliográfica, desarrollada mediante el análisis sistemático de producciones científicas relevantes, lo que permitió la construcción de una base teórica consistente para el desarrollo del estudio. En síntesis, la investigación evidenció que la aplicación de modelos predictivos basados en inteligencia artificial en la gestión de compras, inventarios y demandas contribuye a la optimización de los procesos logísticos y a la mejora de la toma de decisiones, al promover una mayor precisión en las previsiones, una mejor asignación de recursos y una mayor eficiencia operativa a lo largo de la cadena de suministro.

Palabras clave: Inteligencia Artificial. Modelos Predictivos. Gestión de Inventarios. Logística.

1 INTRODUCTION

The increasing digitalization that has been taking place in supply chains has provided a specific impetus for significant transformations in the way various organizations structure and organize their logistics-related operations. This appearance of modernization has been changing not only internal processes, but also impacting the way companies interact with suppliers and customers, leading to a new configuration in resource management and product delivery. In this specific context, the adoption of technologies that use artificial intelligence has facilitated the manipulation and processing of large amounts of data. This, in turn, has contributed to analyses that are not only more accurate, but also to the decisions made being significantly more consistent and reasoned. The use of predictive models fits perfectly into this picture. They are very useful analytical tools that can predict behaviors related to market demand in advance. In addition, these models allow for precise adjustments to inventory levels and improve purchase planning. Thus, its use results in a significant contribution to the operational efficiency of organizations.

At the same time, the complex dynamics of contemporary logistics environments reveal a panorama marked by market fluctuations, the demand for agility in operations and a deeper integration between the various processes involved. This situation requires the implementation of solutions that effectively reduce uncertainties and, at the same time, improve the responsiveness of organizations to these challenges. Thus, the use of artificial intelligence in the processes of purchase management, inventory control, and demand forecasting has become a strategy that is aligned with the new dynamics of the business world. This approach allows for actions that are more data-driven, making them less likely to be based on assumptions that may be wrong, which in turn makes operations more efficient.

The general objective of this research is to analyze the application of predictive models based on artificial intelligence in the management of purchases, inventories and demands, aiming at the optimization of logistics processes and the improvement of decision making. While the specific objectives planned are these: Understand the theoretical and operational foundations of predictive models applied to logistics and supply management; Analyze the application of artificial intelligence in demand forecasting and procurement planning; Evaluate the impacts of predictive models on inventory management and supply chain operational efficiency.

With regard to the aspects related to the methodology used, it is important to emphasize that the approach chosen for this research is qualitative. This methodological choice aims to thoroughly analyze the various nuances and implications that the application of artificial

intelligence can have in this specific field. Regarding the procedure adopted, the decision was made to carry out a bibliographic review, which was carried out through the methodical and systematic analysis of scientific works and productions that are relevant and pertinent to the theme in question. This choice made it possible to develop a solid and consistent theoretical basis, which is fundamental for the proper development of the study itself.

The article in question has been organized in such a way as to contain four distinct sections, each with a specific purpose. The first section is the Introduction, in which both the context related to the topic addressed and the objectives that guided the research are presented. Next, we have the Methodology section, which is dedicated to describing in detail the procedures that were adopted throughout the study. The third section, called Theoretical Foundation, is responsible for discussing and analyzing the main conceptual references that support the research. Finally, the last section is the Final Considerations, where a synthesis of the most relevant results obtained throughout the study is made and referrals based on these findings are also presented.

2 METHODOLOGY

The logistics management of various sectors of the economy has been undergoing significant transformations due to the growing adoption of predictive models based on artificial intelligence in purchasing, inventory, and demand management operations. This innovative model is changing the way companies organize and manage their logistics operations, offering new perspectives and techniques to optimize their processes. This is because an industry that requires a high level of precision in decisions, whether operational or strategic, cannot afford to let variability or competitiveness shape its actions. Institutions need to perform their functions with a precision that adapts to the constant changes and challenges that the market imposes, which highlights the importance of speed and accuracy in the decisions made (Sousa et al., 2026). Therefore, it is essential to conduct a survey on the use of these analytical tools, since such research allows a deeper understanding of how different organizations have structured their logistics processes based on concrete and informational data. The objective of this procedure is, first of all, to make strategic decisions more effective and to ensure greater uniformity between them.

The approach selected and implemented throughout this research is classified as qualitative, aiming mainly to achieve a comprehensive and meticulous understanding of the various phenomena associated with the application of artificial intelligence in the context of logistics. This methodological choice reflects the intention to explore intensively and analytically

the nuances and implications of this technological use in the mentioned sector. This approach enables an in-depth analysis of meanings, interpretations, and relationships that could not be fully understood or evidenced by quantitative analysis methods. Lakatos and Marconi (2017) state that qualitative research allows for an in-depth exploration of the intricate complexity of social phenomena. This approach not only offers a more detailed perspective, but also enhances the analysis by situating it in a broader, more contextualized framework. In the scientific context, this methodology has been widely adopted in several disciplines, facilitating the development of coherent understandings of emerging topics. This use, in turn, enables new forms of analysis and interpretation, which deepens our understanding of current and important phenomena that are emerging in many fields of knowledge.

Regarding the methods, a literature review was carried out as a research procedure. This method involves the thorough research of productions already carried out on the subject, which enables the recognition of concepts, theories and important results. Gil (2022) states that the literature review is an essential step in the preparation of scientific research, as it provides a theoretical and methodological basis for the study and positions the researcher in relation to the current state of knowledge.

The bibliographic review carried out was based on a thorough and rigorous analysis of different categories of sources. These sources include monographs, as well as scientific articles that have been disseminated at relevant academic events. Widely recognized scientific journals were also considered, as well as literary works that deal with specialized themes and that have significant relevance within the scope of the research area. This diversified strategy ensured that the review was thorough and grounded in consistent references. The diversity of sources employed plays an essential role in offering a comprehensive and cohesive perspective on the topic under analysis. This variety of information makes it possible to compare and intersect different perspectives and methodologies, thus enriching the analysis carried out. Lakatos and Marconi (2017) emphasize in a relevant way that the use of multiple sources of information contributes substantially to increasing the credibility of the research carried out. Gil (2022), emphatically emphasizes that the careful and judicious selection of bibliographic material is an essential and decisive factor that directly impacts the quality of the results obtained at the end of the research process.

3 THEORETICAL FOUNDATION

The theoretical foundation was structured in order to ensure a logical and articulated approach to the main elements that support the study. To this end, it was organized into three

complementary topics: 3.1 Fundamentals of predictive models and artificial intelligence in logistics, in which the conceptual and technical bases that guide the application of these tools are discussed; 3.2 Artificial intelligence in demand forecasting and procurement optimization, which examines the use of predictive algorithms in supporting decisions related to procurement planning; and 3.3 Data-driven inventory management and logistics efficiency, aimed at analyzing the impacts of artificial intelligence on cost reduction, balancing inventory levels, and improving operational efficiency. This organization favors the progressive understanding of the theme and ensures coherence in the development of the research.

3.1 FUNDAMENTALS OF PREDICTIVE MODELS AND ARTIFICIAL INTELLIGENCE IN LOGISTICS

The predictive models used in logistics in recent years have been meticulously structured and elaborated from the fusion of various techniques from the field of artificial intelligence. These techniques are highly competent and have the ability to examine and process large volumes of data, as well as being effective in detecting relevant patterns that can support decisions. In this way, this strategy enables companies to operate more efficiently and accurately in their logistics activities. In Logistics 4.0, an innovative concept that is revolutionizing conventional logistics practices, the combination of digital systems with sophisticated analytical algorithms makes it possible to predict behaviors associated with the demand for products and services. In addition, this collaboration results in the optimization of supply flows, which makes operations more efficient. This process also results in the reduction of uncertainties that normally surround logistics operations. As highlighted by the authors Batista, Ikeziri and Freitas (2021), the adoption of artificial intelligence-based tools in the internal logistics operations of companies enhances the analytical capacity of these organizations. This adoption of new technologies also allows decisions to better adjust to market dynamics.

The development of these strategies is closely linked to the progress of Industry 4.0, which has brought new technological paradigms to supply chains. According to De Oliveira Morais and Alves Morais (2024), integrating artificial intelligence into a company's logistics operations results in significant efficiency increases, particularly in the areas of demand forecasting and inventory control. From this perspective, predictive models work as analytical tools that integrate past data and current variables, enabling faster reactions that are aligned with fluctuations in the economic scenario.

In technical terms, logistic predictive models are supported by machine learning and time series analysis techniques, which allow the formulation of forecasts from structured and

unstructured data. As stated by Gonzalez et al. (2021), when machine learning algorithms are applied in the supply chain, increased accuracy in forecasting translates into greater integration between the various logistics steps. In this context, Table 1 summarizes the main fundamentals, techniques and applications of these models in the scope of supply management.

Table 1

Fundamentals and applications of predictive models in logistics

Dimension	Description
Theoretical foundations	Based on statistics, data science, and artificial intelligence, with a focus on pattern analysis and predictions
Main techniques	Machine learning, neural networks, regression, time series
Applications in procurement	Demand forecasting, definition of procurement volumes, selection of suppliers
Applications in stocks	Optimization of stock levels, reduction of stockouts and excesses
Applications in distribution	Route planning, deadline forecasting and delivery management
Operational benefits	Greater accuracy in decisions, cost reduction and increased logistics efficiency

Source: Adapted from Gonzalez et al. (2021); Murray et al. (2023); Breviário et al. (2025).

Recent literature also highlights the combination of predictive models and optimization techniques as a promising approach to inventory management. Breviário et al. (2025) propose the integration between linear programming and machine learning algorithms, highlighting that this articulation allows not only to predict demands, but also to define more efficient operational strategies. This perspective expands the role of predictive analysis, which is no longer just descriptive or estimative and starts to guide structured decisions in the logistics context.

In addition, the application of advanced predictive analytics in inventory management has contributed to the refinement of decision-making processes. Murray et al. (2023) point out that the use of more robust analytical models enables more accurate management of inventory levels, reducing waste and improving customer service. These models operate based on real-time data, which favors continuous adjustments and greater adherence to market conditions.

Finally, the incorporation of predictive systems into logistics also involves the ability to monitor and correct operational failures in an automated way. Causin (2021) observes that the artificial intelligence systems used in Logistics 4.0 not only anticipate problems, but also indicate corrective actions, contributing to the continuity and stability of operations. This approach reinforces the strategic role of artificial intelligence in supply management, consolidating its use as an integral part of contemporary logistics practices.

3.2 ARTIFICIAL INTELLIGENCE IN DEMAND FORECASTING AND PROCUREMENT OPTIMIZATION

Demand forecasting through artificial intelligence has generated a profound and significant transformation in the way companies structure and organize their procurement processes and the logistics planning they carry out. This change is not only modifying strategies, but also the way these activities are carried out, which affects the internal dynamics and agility of companies in meeting market demands. In the context of Logistics 4.0, it is already possible to observe the application of advanced analytical models, which are capable of processing large volumes of data and generating much more reliable forecasts. This technological evolution plays a crucial role in reducing operational uncertainties, making the logistics environment more stable and efficient. According to Intermodal (2026), models that use machine learning techniques are able to detect various consumption patterns and can also predict changes in demand more accurately and efficiently. This methodology offers a detailed analysis that helps to understand and manage variations in consumer behavior in the market. In this scenario, Table 2 presents a systematization of the main predictive models applied to logistics.

Table 2

Predictive Models Applied to Logistics

Model	Description
Linear regression	"simple and interpretable, for linear relationships between variables and demand";
ARIMA	"effective for time series with seasonality and linear trends";
Decision trees	"interpretable, they capture non-linear interactions";
Random Forest	"robustness and reduction of overfitting with multiple decision trees";
Gradient Boosting Machines (GBM)	"high accuracy, ideal for tabular data";
Support Vector Machines (SVM)	"effective for high-dimensional and nonlinear data";
Artificial Neural Networks (ANN)	"capture complex relationships in large data sets";
Recurrent neural networks (RNN) and LSTMs	"ideal for sequential data and time series";
Convolutional neural networks (CNN)	"applicable to time series to capture local patterns";
Prophet	"developed by Meta, handles seasonal components and irregular events well";
Temporal Convolutional Networks (TCN)	"capture long-term dependencies on temporal data";
XGBoost	"efficient gradient boosting often outperforms other algorithms";
Stacking	"combines multiple models to improve forecast accuracy";
Model Combination	"uses the strengths of different methods, such as combining ARIMA for seasonal patterns with neural networks for nonlinear relationships."

Source: INTERMODAL (2026).

The use of these models improves procurement planning by aligning procurement volumes with real market demands. According to Souza et al. (2026), artificial intelligence in the procurement process increases the analytical capacity of companies, leading to more informed choices in the selection of suppliers, the definition of quantities, and the management of contracts. This minimizes errors caused by inadequate forecasts and increases synergy between key areas.

In addition, the literature shows that using predictive algorithms in demand forecasting results in significant operational gains. Rustice et al. (2024) indicate that the application of artificial intelligence tools in logistics makes it possible to optimize processes, reduce costs, and improve the performance of supply chains as a whole. In this scenario, demand forecasting is no longer a mere exercise based on data from the past, but rather a tool that takes into account real-time variables, increasing the agility of companies.

With regard to demand planning, both Senhori and Gottardo (2023) and Julianelli (2023) point out that machine learning models increase the accuracy of forecasts, especially in volatile and seasonal contexts. According to these authors, the fusion of historical data, external variables, and sophisticated algorithms results in more informed decisions.

Table 3

AI and ML-Based Solutions for Monitoring and Tracking

Solution	Description
IoT devices	"IoT sensors installed in goods and vehicles collect real-time data, such as GPS location, temperature, humidity, and handling conditions";
Sensor Networks	"transmit data continuously to central systems, allowing constant monitoring of the conditions and location of assets";
IoT integration	"TMS systems integrate data from IoT sensors to provide real-time visibility into the status and location of goods during transportation";
Predictive analytics	"use ML algorithms to predict delays, optimize routes, and improve transportation efficiency";
Software Platforms	"platforms like Luft Digital offer end-to-end visibility, tracking shipments in real-time and providing continuous updates on the status of goods, occurrences, and even POD (proof of delivery)";
Alerts and notifications	"platforms send proactive alerts about delays, route deviations or inadequate conditions, allowing companies to respond quickly to problems";
Integration with RFID devices, barcodes and IoT sensors	"used to track the location and movement of items within the warehouse in real time";
Inventory Optimization	"ML algorithms analyze inventory data to optimize product disposition, reduce search times, and improve operational efficiency";
Route optimization	"analyze real-time data on traffic, weather conditions and transport restrictions, optimizing routes for faster and more efficient deliveries";
Data analysis	"advanced analytics tools that use ML to process large volumes of supply chain data, identifying patterns and anomalies";

Solution	Description
Demand and inventory forecasting	"predictive models that help predict future demand and adjust inventory levels in real time, avoiding excess or lack of products";
Last mile optimization	"platforms that use AI to optimize last-mile deliveries, considering factors such as customer locations, time windows, and delivery preferences";
Delivery tracking	"mobile apps, such as Luft Delivery, and real-time tracking systems that allow customers to track the status and location of their deliveries."

Source: INTERMODAL (2026).

The integration and use of these technologies demonstrate that artificial intelligence goes beyond its previous limitations, which focused only on demand forecasting, as now its application extends, in a significant way, to the real-time monitoring of operations and the integrated management of logistics activities in a more efficient and complete way. Artificial intelligence, according to Toledo and Camargo Filho (2025), has been one of the main responsible for influencing purchasing decisions, as it advances and is applied. This impact is especially evident in e-commerce, where technology has facilitated a more agile buying process that is adapted to consumer preferences and behaviors. Thus, artificial intelligence not only simplifies transactions but also adjusts to the needs and habits of users, making the shopping experience more efficient and enjoyable. The interconnection between forecasting and monitoring with logistics execution, without a doubt, strengthens a management model based on real data. This model brings greater operational transparency and, consequently, improves the efficiency of the purchasing processes and availability of products in the market. When these components are connected, a constant flow of information and faster decisions are ensured, resulting in a significant improvement in inventory management and customer satisfaction.

3.3 DATA-DRIVEN INVENTORY MANAGEMENT AND LOGISTICS EFFICIENCY

Data-based inventory management has established itself as one of the transformative axes of logistics operations, especially by integrating artificial intelligence techniques. In this sense, the use of automatic systems enables a more effective control of inventory levels, minimizing the uncertainties caused by demand variation. In e-commerce, process automation, enabled by artificial intelligence, leads to more assertive decisions about replenishment and inventory control, according to Freitas (2024).

The use of predictive models also transforms the way companies balance excess and stockouts. Peterson (2021) states that artificial intelligence is capable of predicting consumption trends based on past data and context variables, helping to keep inventories at optimal levels. This results in lower storage operating costs and increased product availability for the end consumer.

In analytical terms, the international literature has shown consistent progress in the implementation of artificial intelligence in inventory management. According to Albayrak Ünal et al. (2023), in a systematic review, machine learning algorithms have been used, in general, to predict demands, optimize inventory levels, and assist in strategic decision-making. These models increase data processing power and enable more detailed analysis, which results in greater efficiency in logistics operations.

Inventory forecasting, driven by artificial intelligence, becomes crucial for the coordination of supply chains in e-commerce. According to Çayli and Oralhan (2024), systems based on artificial intelligence enable more agile decision-making that is in tune with market fluctuations, especially in contexts of high volatility. These models are able to minimize operational failures and improve logistics performance comprehensively.

In addition, the use of artificial intelligence in warehousing operations has generated significant increases in operational efficiency. Favaro (2023) highlights that the use of sophisticated algorithms makes it possible to optimize the arrangement of products, minimize movement times, and make better use of physical space. These improvements have a direct effect on the productivity of operations and promote more integrated inventory management.

Finally, the use of artificial intelligence solutions for inventory management has increased the ability of companies to deal with demands that are, by nature, dynamic and complex. According to Gemniczak et al. (2025), the adoption of these technologies results in decreased logistics costs, increased accuracy of forecasts, and greater efficiency in processes. Thus, data-driven inventory management becomes a pillar of today's logistics efficiency.

4 FINAL CONSIDERATIONS

The use of predictive models with artificial intelligence in the management of purchases, inventories, and demands is transforming modern logistics, especially in organizations that need more agility in decisions and more detailed analysis. The growing availability of data, combined with the improvement of computational techniques, has enabled companies to create more integrated and evidence-based processes, which increases the consistency of operations and reduces uncertainties related to market dynamics.

In view of the analysis carried out, it is found that the research fully complied with what was proposed by investigating, in an articulated way, the theoretical aspects and practical applications of predictive models in logistics. Therefore, the general objective was achieved by exposing how artificial intelligence collaborates with the improvement of logistics processes and

the strengthening of managerial decision-making. Likewise, the specific objectives were fulfilled throughout the sections that form the theoretical foundation.

Regarding the first topic of the theoretical foundation, the research showed that the fundamentals of predictive models and artificial intelligence in logistics are anchored in analytical techniques capable of processing large volumes of data and identifying relevant patterns for scenario prediction. These models expand the ability of organizations to anticipate demands and adjust operations more consistently. Regarding the second topic, it was observed that the application of artificial intelligence in demand forecasting and purchase planning contributes to decisions more aligned with market needs, reducing estimation errors and promoting a greater balance between supply and demand. In the third topic, it was found that data-driven inventory management favors the reduction of operating costs, avoids both excesses and stockouts, and contributes to logistics efficiency, by allowing greater control and precision in the management of inventory levels.

A development that occurs naturally from this study is the recommendation for more empirical studies, especially focused on the application of predictive models in different segments of the economy. This expansion of studies is crucial to deepen and enrich the understanding of the effects that these models can cause in organizational contexts that are, by their nature, diverse and distinct. Therefore, it is hoped that these studies will help to elucidate the effectiveness and impact of predictive models in various work environments and sectors of the economy. In addition, it is pertinent and opportune to deepen the comparisons between the artificial intelligence techniques that were analyzed. It is important that this study also thoroughly evaluates the impacts that these techniques may have in specific management and administration contexts. Also investigate the interaction and synergy between predictive systems and the new technologies that are emerging, as this union can accelerate and favor the advancement of understanding about digital transformation processes in the logistics sector.

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