Driving Operational Excellence: Business Intelligence in the Car Parts Industry

BLERTA LEKA (MOÇKA)[1], DANIEL LEKA[2], BRUNILDA BARAKU[1]
[1]Department of Mathematics and Informatics,
Agricultural University of Tirana, Faculty of Economy and Agribusiness,
St. "Paisi Vodica" 1025, Tirana,
ALBANIA

[2]Special Court of First Instance for Corruption and Organized Crime,
St. "Jordan Misja", 1057, Tirana,
ALBANIA

Abstract: - Business Intelligence (BI) is a vital tool for many different businesses, and the automotive sector, particularly the auto parts industry, reaps significant benefits from it. With an emphasis on product sales, pricing tactics, and improving staff performance, this study explores the revolutionary impact of BI in streamlining operations within the auto parts sector. By integrating BI, businesses can improve their overall sales performance, optimize their product offers, and fine-tune their pricing strategies. By providing employees with enhanced reports that support daily sales operations, better decision-making, and wider performance indicators, the study also emphasizes BI's critical role in enhancing employment statistics. This research illustrates how BI tools may improve decision-making by offering real-time data that enable executives, managers, and staff to react quickly and strategically to market dynamics through a case study of ABC Auto Parts Company. By incorporating BI into routine operations, a more data-driven and responsive environment is created, which enhances store management and sales processes. These insights boost performance indicators like monthly sales, increase operational efficiency, and give businesses a competitive edge. By highlighting the critical connection between BI, well-informed decision-making, and operational excellence, this study positions the auto parts sector for increased productivity and strategic expansion in a changing market. Demonstrating useful BI applications and their advantages, this study offers practical insights that help firms achieve long-term success through the best possible use of BI.

Key-Words: - Business Intelligence, car parts industry, sales optimization, predictive analytics, data-driven decision making, key performance indicators and employee empowerment.

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1 Introduction

The modern world depends heavily on the automobile sector. Demands are increasing, and technology is constantly evolving. Replacement parts are in high demand to support the maintenance and efficiency of the automotive industry. The expansion of product offerings, the growth of stores, and technological advancements have also automated parts of these businesses' operations through CRM systems and databases. The international car market and the Albanian one offer a diverse number of tools and parts, making it necessary to respond quickly to these market demands. Technological developments, employment volatility, environmental requirements and standards, global reorganization of the supply chain, foreign partners, the effects of the pandemic, market saturation, and organizational measures are some of the main issues facing the spare parts industry now, [1]. Common activities in this sector, such as inventory control, employee productivity measurements, and product sales growth, can be improved by applying business intelligence (BI), [2]. BI itself helps to transform information into valuable knowledge, and the auto parts industry can benefit from customer analysis as well as optimization of marketing strategies, [3]. These technologies enable real-time performance tracking, sales trend planning and evaluation, and the development of key performance indicators (KPIs) to guide business operations, [4]. Creating BI solutions includes information from databases or other data systems. Data is transformed into useful knowledge for decision-making using BI tools. Gartner's Magic Quadrant Lists Tableau, Power BI, and MicroStrategy as the most used tools for BI

development, for the advantages they offer in data scaling, automation, integration from multiple data sources, advanced visualization data, and user-friendliness. These platforms, with the integration of AI, also allow users to ask key questions, such as identifying potential customers or salespeople who are not meeting targets, [5].

Upgrading IT infrastructure is crucial for using BI strategies successfully, helping businesses reach their full potential in strategic decision-making and managing operations efficiently. Implementing these BI practices can significantly improve efficiency, product quality, and responsiveness to customer demands within the car parts industry. Table 1 synthesizes the capabilities of BI in the car parts industry alongside existing research, [6], [7].

Table 1. The capabilities of BI in the car parts industry

Categories of Application	Business Impact
Sales	BI enables analysis of market trends and customer preferences to optimize product offerings.
Inventory	BI facilitates real-time insights into market trends and seasonal fluctuations, allowing businesses to adjust strategies quickly.
Pricing	BI tools help businesses make smart pricing decisions by analyzing competitor prices and understanding different customer groups.
Employee Efficiency	BI improves employee performance by giving insights into workforce behavior and supporting decisions based on data.

Organizations can enhance their BI capabilities through investments in automation and employee training, fostering a culture of data-driven decision-making, [7]. BI can assist in determining optimal pricing strategies based on car specifications and market trends, reducing pricing errors to a mean of 11.46%, [8].

While BI offers substantial benefits, challenges such as data integration and the need for skilled personnel can hinder its full implementation in the car parts sector, making it essential for businesses to adopt robust data management strategies that ensure access to high-quality, well-structured data to fully harness its potential.

This study highlights how BI can contribute to improving the car parts sector. The primary contribution of this study lies in the practical analysis of BI applications in optimizing part-sales procedures, refining pricing strategies, and enhancing workforce efficiency. Through a case study of the ABC Auto Parts company, the research provides a concrete example of BI tools in action, illustrating their impact on improving operational performance and enabling proactive decision-making.

2 BI in Part Selling Optimization

BI is transforming how the automotive parts industry approaches sales. By enabling companies to make data-driven decisions, BI plays an important role in shaping product offerings, optimizing pricing strategies, and enhancing the responsiveness of businesses to market fluctuations. BI organizes data in ways that provide clear insights into trends and performance, enabling businesses to maximize profitability and growth, [9]. By structuring data for efficient analysis and reporting, businesses can gain deeper insights into sales trends and operational performance. It can lead to better decision-making, improved customer satisfaction, and enhanced operational efficiency, [10].

2.1 Demand Forecasting

BI is highly effective for predicting demand and optimizing inventory turnover. BI technologies estimate demand for certain car parts by combining historical sales data, market trends, and customer preferences. For instance, integrating machine learning models with BI tools has significantly improved sales forecasts, achieving prediction accuracies of around 90.21%, [11].

Through these insights, businesses proactively manage inventory by ensuring popular items are adequately stocked while reducing excess stock of slower-moving products. Real-time insights into seasonal variations and market dynamics also enable companies to revise strategies swiftly and align them with shifting consumer needs. These capabilities allow businesses to maintain competitiveness and sustain growth in an evolving market. AI and machine learning improve forecasting capabilities, enabling more accurate predictions of customer demand, [12]. This directly enhances sales forecasting for auto parts and optimizes inventory management, as previously discussed in your study.

2.2 Pricing Optimization

Strategic pricing is fundamental for optimizing part sales, and BI tools support companies in creating effective, flexible pricing strategies. By analyzing

competitors' prices, customer behavior, and sales performance, BI tools help set competitive yet profitable prices. For instance, businesses use BI to develop dynamic pricing models that adapt to real-time market conditions, maximizing revenue potential.

BI solutions also provide insights into pricing impact by identifying trends such as customer segmentation and seasonal demand. By understanding these factors, companies can establish data-driven pricing models that balance market competitiveness and profitability, driving revenue growth and enhancing customer satisfaction.

2.3 Inventory Management

Inventory management is a critical area where BI provides transformative capabilities. By analyzing KPIs such as inventory turnover rates and customer feedback, BI helps businesses align inventory levels with demand, ensuring efficiency and cost control. For example, BI tools predict supply chain needs, allowing companies to minimize overstocking while avoiding stockouts of high-demand parts. The integration of BI tools into organizational workflows has shown measurable benefits, such as increased revenue and reduced cost, [13].

The integration of big data analytics with BI systems further enhances inventory management by uncovering actionable trends in consumer behavior and sales cycles. These tools allow for continuous monitoring and refinement of inventory strategies, enabling businesses to stay agile in responding to market dynamics.

2.4 Advantages of BI in Part-Selling Optimization

Table 2 shows the key advantages of BI in part-selling optimization, including market analysis, dynamic pricing strategies, real-time insights, customizable reporting, and big data integration, highlighting how these capabilities drive better decision-making, adaptability, and sales performance.

These BI features empower businesses to respond effectively to market dynamics, optimize their strategies, and maintain a competitive edge in the industry while maximizing revenue potential, [15].

Table 2. Advantages of BI in part-selling optimization

Category	Details and Benefits
Market Analysis and Product Portfolio Optimization	Analyze trends and customer preferences to identify high-demand products.
	Introduce new products and phase out outdated ones.
	Align product offerings with market needs to boost sales.
Dynamic Pricing Strategies	Leverage BI tools for data-driven pricing decisions.
	Analyze competitor pricing and customer segmentation.
	Develop flexible pricing models to maximize revenue.
Real-Time Market Insights	Provide up-to-date information on market trends and seasonal changes.
	Track KPIs like sales trends and inventory turnover.
	Adjust strategies to respond to market shifts.
Customizable Reporting	Generate tailored reports on product performance and market demand.
	Identify opportunities for improvement.
	Support data-driven decision-making for strategy refinement.
Big Data Integration [14]	Analyze large datasets to uncover trends and customer preferences.
	Use KPI alerts to monitor optimization efforts.
	Make timely adjustments to enhance outcomes.

3 BI Integration for Employee Performance Enhancement

BI stands out as a tool for improving employee performance. Negash's exploration of BI clarifies its role in enhancing employee performance within organizations, emphasizing the importance of informed decision-making and operational efficiency, [16]. BI has a significant impact on employment statistics, decision-making processes, and overall operational excellence within industries such as car parts. The primary objective is to demonstrate how BI can be seamlessly applied in daily operations to enhance workforce management, [17].

As a transformative tool, BI reshapes many facets of workforce strategy, from recruitment to talent retention, enabling data-driven decision-making. Through BI tools, organizations can analyze employee demographics, turnover rates, and skills, contributing to more effective human

resource management. BI influences workforce statistics and supports data-informed choices that optimize operations, helping align staffing levels with organizational objectives, identify skill gaps, and promote continuous improvement, ultimately strengthening employee performance and efficiency. Integrating BI fosters, a strong link between informed decision-making and operational success.

Table 3. Key employee categories that would benefit from BI integration

Employee Category	Required Knowledge	User interaction recommendations
Sales Managers and Analysts	Knowledge in data analysis and interpreting KPIs.	Options for filtering and creating clear visual reports.
	Ability to understand market trends and customer preferences.	Visual graphs and reports to help understand sales data and market trends.
Inventory and Stock Management	Knowledge of inventory management and logistics.	Simple interfaces for viewing product availability and managing orders.
	Ability to work with data related to product movement and stock management.	Options for inventory management assistance and automated ordering to adjust to market demands.
Customer Service Representatives	Ability to understand customer information and data usage.	Intuitive interfaces for viewing and managing customer data in real-time.
	Ability to use BI to offer personalized services.	Simple options to suggest parts that may be needed based on customer requests.
Employees with Limited Experience or Low Technological Knowledge	Limited use of technology or little experience in data analysis.	Simple and user-friendly interfaces with limited functionality to avoid information overload.
	Adaptation to using BI systems and direct assistance.	Use of visual graphs and icons to facilitate data understanding and clear instructions.
HR and Performance Managers	Ability to analyze employee performance data.	Interfaces for monitoring and analyzing employee performance with options for ongoing reporting.
	Deep understanding of KPIs and other performance indicators.	Visual graphs and easy-to-understand reports for managing employee performance and development.

Key metrics—including sales performance, customer acquisition cost (CAC), employee satisfaction and engagement, training effectiveness, and workforce productivity—are highlighted and defined. These KPIs equip organizations with a comprehensive framework for assessing both individual and team performance, thus shaping strategies for talent acquisition, development, and retention. Embedding BI in routine operations is a strategic necessity for optimizing workforce dynamics. BI provides real-time insights through personalized dashboards, cultivating a culture of ongoing improvement. By incorporating BI into everyday processes, decision-makers access current, relevant data to swiftly address workforce challenges.

The development of new systems requires an understanding of user profiles and their technological knowledge. For Business Intelligence tools to be successfully integrated, it is essential to address training and skill gaps, [18]. Ensuring that employees possess the necessary skills to effectively use advanced BI tools is critical for successful adoption.

The following Table 3 outlines key employee categories that would benefit from BI integration, the knowledge required for each category to fully utilize the system, and interface recommendations to ensure the system is accessible to users with varying levels of expertise. By implementing user-friendly BI systems, organizations can cultivate a data-driven culture, enhance decision-making, and improve workforce performance across all organizational levels.

3.1 Application in the Automotive Sales Sector

In the automotive sales sector, BI tools assist in strategic planning and performance monitoring, enhancing forecasting and establishing meaningful performance benchmarks. BI solutions in car sales can be implemented through applications and BI tools, which allow monitoring of company sales and analysis of employee expenses and management sales, [19]. These solutions provide actionable insights, improve organizational performance, and enable real-time analytics, intuitive reports, and delivery of business insights, [20]. By adopting the BI system, businesses can now produce income statements for various categories such as location, service, customer, tools, products, and employees. This process, previously taking two weeks, has been streamlined for just 31 minutes using Microsoft Excel, [21].

3.2 Mobile BI and SSBI Empowerment

BI can also be used in mobile formats. Mobile BI empowers directors in the car parts industry and other sectors by providing real-time access to critical data, enabling them to monitor key performance indicators, make informed decisions on the go, and improve both operational efficiency and strategic planning, [22]. Self-Service Business Intelligence (SSBI) can further empower employees by giving them direct access to data insights and minimizing reliance on IT teams, [23]. Platforms such as SAP Analytics Cloud, Tableau, and Power BI enable users without technical expertise to generate reports and dashboards, facilitating prompt, data-informed decision-making. For example, sales teams can quickly access live customer data, allowing them to adjust their strategies in real time. SSBI also democratizes data access, fostering a data-driven culture across departments. By making data accessible to more employees, decisions become more fact-based. For instance, Human Resources (HR) can leverage SSBI to analyze productivity trends, thereby informing recruitment and training decisions and improving overall operational efficiency.

4 Integrating BI Into the Car Parts Industry

The integration of BI has a pervasive impact on various aspects of the car parts industry, allowing for effective management within this dynamic sector. According to data from the General Directorate of Road Transport Services in Albania, the national vehicle fleet totaled 914,925 units as of June 30, 2024, with 34,129 vehicles registered between July and October, [24]. This data can be integrated into BI frameworks to enable predictive analysis of parts demand, track vehicle registration trends by brand and model, and optimize the management of inventory for replacement components. Additionally, the higher influx of vehicle registrations can provide insights into future service and parts needs, supporting targeted marketing and efficient resource allocation in the car parts industry.

The data shown in Figure 1 reveals a heavy skew towards older vehicles in the fleet, with over 59% of vehicles being more than 15 years old. This highlights the need for potential upgrades or maintenance to improve fleet efficiency and reduce operational costs. In contrast, newer vehicles (0-4 years old) make up only about 2.2%, indicating limited investment in the latest models. The most common brands are Volkswagen, Mercedes Benz, and Daimler Chrysler, with significant market shares, suggesting a preference for well-established manufacturers within this fleet. With over 59% of vehicles older than 15 years, BI can help identify opportunities for replacements and maintenance.

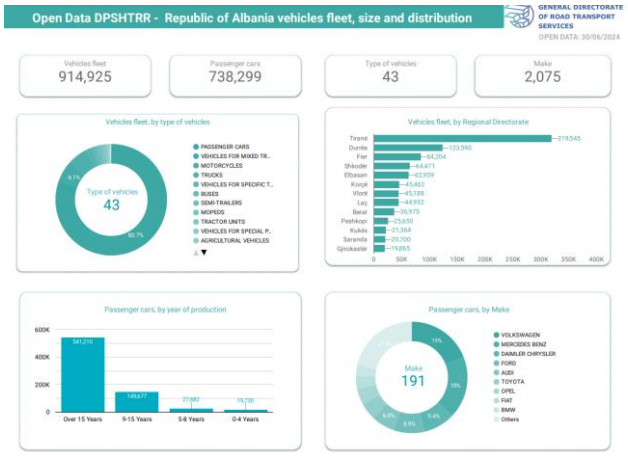

Fig. 1: Open Data DPSHTRR - Republic of Albania vehicles fleet, [24]

BI tools are essential for examining customer needs, aligning them with business objectives, and promoting collaboration among stakeholders. By enabling performance tracking, evaluation, and analysis, BI supports informed decision-making and improves operational efficiency, [25]. Figure 2 displays a dashboard designed for the car parts sector, offering a user-friendly interface to monitor different stages of the production process.

Figure 2 presents a comprehensive dashboard for analyzing stock performance and pricing strategy within an automotive retail context. The dashboard is divided into multiple sections, each displaying key performance indicators and metrics that offer insights into inventory and pricing efficiency. At the top, summary metrics provide an overview, including total units in stock (369), retail rating, market condition, and performance rating. The market condition at -27% suggests a challenging environment for sales, while the average days to sell are broken down, showing local averages (38 days) compared to dealer averages (34 days). A line graph in the Local vs. AT Days to Sell section compares the average days to sell on Auto Trader (AT) listings against industry standards over the past six weeks, highlighting a peak in selling time for AT listings in week 41, which may indicate a market slowdown during that period. The Sale Difference to Valuation chart shows a steady increase in sales prices as a percentage of valuation,

from 102.1% to 103.5%, implying either strong demand or an effective pricing strategy.

Fig. 2: Price Smart Dashboard
Source: RWA Automative, [25]

In the Auto Trader Retail Rating section, a bar chart breaks down retail ratings by price bands, indicating that vehicles rated above 80 are predominantly underpriced relative to valuation, suggesting potential pricing adjustments to maximize profit margins. The Auto Trader Retail Rating measures vehicle performance on the Auto Trader platform using sales data, pricing, and customer feedback. A scatter plot analyzing the relationship between the price-to-valuation ratio and days in stock, grouped by retail valuation band, shows clustering near 100-105% of the valuation, indicating balanced pricing but also identifying outliers for possible revision. These reports assist sales managers by providing advanced monitoring and analysis to maximize profits from used vehicles. These reports assist sales managers by providing advanced monitoring and analysis to maximize profits from used vehicles. They help with:

- Stock analysis to identify profit opportunities.
- Comparison of company sales with market standards.
- Identification of vehicles at a lower or higher price than the usual price.
- Making decisions easily for setting the price

KPIs in the auto parts industry

KPIs (Key Performance Indicators) are essential for evaluating the efficiency of any company. Knowing them and reflecting them in BI reports gives a good overview of the company's situation, which also helps with informed decision-making. Table 4 highlights the key KPIs for the auto parts industry, focusing on sales, customer satisfaction, and pricing [26], [27], [28]. Tracking these metrics helps businesses improve efficiency, increase competition, and increase customer loyalty, driving sustainable growth.

Table 4. KPIs for the car parts industry

KPI	Key Metrics	Impact
Sales Revenue and Inventory Turnover; Tracks the effectiveness of sales strategies and operational efficiency.	• Sales Revenue • Inventory Turnover Rates	Reflects financial health and supply chain efficiency. Supports profitability and operational balance.
Customer Satisfaction Index (CSI); Measures customer satisfaction with quality and service of purchased parts.	• CSI Score	High CSI promotes brand loyalty, repeat business, and a positive reputation.
Pricing Effectiveness; Evaluates the impact of pricing strategies on revenue growth and competitiveness.	• Pricing Competitiveness • Profit Margins	Balances market competitiveness with profitability.

Business Intelligence is essential for maximizing efficiency in the car parts industry, particularly in optimizing the sales of individual components. By leveraging BI insights and monitoring relevant KPIs, businesses can enhance their product offerings, pricing strategies, and overall sales potential, thereby maintaining a competitive edge in the market. Furthermore, effective implementation of BI involves aligning BI processes with organizational goals, ensuring high-quality data integration, and fostering managerial support for actionable intelligence, [29].

Integrating feature engineering with machine learning algorithms has demonstrated the potential to enhance predictive accuracy in the car parts industry, with studies showing an improvement in the qualification rate of approximately 3%, [30]. This approach can drive operational excellence by refining inventory management, optimizing sales forecasts, and improving overall decision-making efficiency in automotive spare parts operations.

Although BI has proven effective in optimizing operational efficiency and improving sales and workforce performance in the auto parts industry, a significant limitation exists in how BI systems integrate with external data sources. Efficient

implementation of BI in a retail company enables deeper insight into customer behavior, optimizes inventory management, and enhances sales performance through data-driven strategies, [31]. By leveraging data visualization and continuous analysis, BI supports better decision-making, ensures adaptability to market changes, and provides a competitive edge in the dynamic retail landscape.

Currently, many BI systems focus on internal data, but linking them with external sources, such as governmental databases or automotive-specific data, could offer a more comprehensive predictive maintenance tool. Future exploration into this integration could help address patterns of common mechanical issues tied to specific vehicle make and models, enhancing decision-making for businesses involved in part-selling optimization and maintenance. This potential integration could allow businesses to predict part failures and plan for proactive maintenance, increasing the efficiency of service providers and reducing downtime for customers.

5 Case Study: ABC Auto Parts Company

ABC Auto Parts Company started its journey modestly, initially focusing on trading automotive parts. The business expanded and improved its operations throughout time, eventually rising to the top of the nation's market. ABC Auto Parts has over 30 years of experience in the car parts market. Its initial investments in CRM programs and databases, along with more than two years of experience in BI, position the company to sustain quality and continue progressing for many years to come. This move was made to boost productivity, simplify processes, and preserve its leading position in the fiercely competitive automotive industry.

ABC Auto Parts has distribution throughout the decision, where there are currently 16 stores with warehouses. The products have efficient distribution and close access. The company has cooperated with 60 overseas suppliers. It offers a wide product line with the latest automotive accessories and parts.

ABC Auto Parts serves a variety of industries, including auto repair, retail, transportation, automotive, institutions, non-governmental organizations, and financial institutions. The company has more than 3,000 customers throughout Albania and provides products through its wide network, which makes it simple for customers to access services nationwide. Improvements brought forth by this company's BI integration include:

- Managed inventory: ABC Auto Parts may monitor product demand patterns and make the necessary plans by using BI analytics.
- Dynamic pricing methods: The company has increased profitability by implementing flexible pricing strategies with the help of BI, enabling real-time price adjustments based on demand and competition. The use of market analysis, data on consumer preferences and price sensitivity has enabled ABC Auto Parts to increase profits without losing competition.
- Improved supply chain efficiency: BI analytics have improved purchasing processes, reducing stock shortages and increasing operational flexibility. This improvement has enabled quick responses to unexpected requests and optimized the management of supplier and transport data.
- The BI dashboard has improved team performance and increased efficiency in the sales process by providing them with valuable insights to forecast demand more accurately.
- Continuous improvement and adaptation: BI data analysis has allowed ABC Auto Parts to remain competitive and make continuous improvements in all its operations.

The introduction of BI solutions to the educational and managerial staff has significantly contributed to the increase in the number of employees who can access and process BI reports. Managers have integrated BI into their daily activities, providing added value to customers and meeting market needs dynamically and efficiently.

Initially, BI was primarily used by the reporting and pricing office, also providing information to general managers and supply chain managers. With this reading, the BI was then made available to the sales managers in each store. Efficient use has been noticed by managers, reporting to employees and employees who have a long working time in this sector. However, a noticeable difference is that store managers with longer employment periods in this sector use BI more frequently compared to younger managers, who need more training and support to fully benefit from BI's capabilities. Occasional training sessions have been organized to familiarize them with the usage and benefits of BI, with the aim of increasing its usage by younger managers and optimizing their performance. This process is an important part of the continuous improvement of culture, which relies on BI technologies and ensures

a quick and effective response to market demands and changes.

6 Conclusions

Business Intelligence (BI) has started rapid development during the last decade, being enriched with technology and the innovations it can take in the decision processes of optimizing operations. The sales department, corrections management, logistics, and production will be used at that time to increase efficiency and make other decisions. BI has significantly improved the entrepreneurial process in businesses and the auto parts industry as well. Through its integration, business leaders are more informed, increasing sales performance and promoting an improved organizational culture. This study identifies the role of BI in optimizing pricing strategies, refining product offerings, and driving success in the buying and selling processes.

BI helps visualize and monitor Key Performance Indicators (KPIs), such as:

- Sales revenue
- Inventory turnover rates
- Customer Satisfaction Index (CSI)
- Price Effectiveness

These indicators allow businesses to:

- To measure the progress of their work
- To improve prices
- To improve the supply chain
- Manage inventory more dynamically

The ability to have the right information at the right time ensures that businesses remain competitive and profitable.

In the case presented in the study, the implementation of BI initially in the offices of reports and determination of prices and its positive impacts, moving to the directorates of imports and general directorates. Now it has become a readable part even for managers with applicable knowledge and extended reports. The decision-making process in the company has been improved. However, some challenges have been encountered in its use by all employees. It is necessary to develop regular training, clear GUIs, and ongoing support to ensure that staff at all levels understand and use BI tools effectively, maximizing their impact.

Technology is evolving, and many BI tools have made it part of AI, enabling users to ask questions and provide appropriate solutions. Integrating artificial intelligence (AI) and machine learning (ML) with BI offers improved predictive analytics. These systems can provide deeper insights into supply chain management, customer behavior, and predictive maintenance. The adoption of BI confronts me with great importance, which is about high data challenges, data issues, and solutions to them, which organizations need to take care of. For data protection and security, raise more, label to stay stable in the power of redundant data for information practices, and strengthen the trust of stakeholders. The ABC Auto Parts Company case study highlights the success achieved by the company in the past two years regarding simplifying procedures, increasing worker performance, and raising customer satisfaction and retention rates. It is expected that integrating BI with modern technologies like AI and ML will improve its effectiveness even more. For the challenges of this potential, organizations must address those who are interested, prepare their workforce for the effectiveness of BI, and respect the standards regarding their data. As an imperative strategy and not just technological development, BI is like a basis for information decision-making, counters, and innovations, with applications that extend to the automotive sector and all the industries that want to put in place.

7 Recommendations for Future Research

Future studies will focus on improving the BI systems by integrating them with external databases, such as government data from the General Directorate of Road Transport Services in Albania, especially regarding cars registered, used, and new ones. This integration can provide valuable insights by identifying groups of used cars, but also newer ones, mechanical issues associated with certain car parts that are more defective, this will improve predictive maintenance models. When you analyze the data of previous customers and integrate trusted automotive site information and historical maintenance logs, this will fuel BI systems to recommend parts that should be replaced before the car reaches its service date, thereby giving service providers the power to optimize their operations. However, it brings major challenges to data security and privacy. Therefore, future work needs to focus on the secure models and protocols for sharing such data among automobile firms, governmental bodies, and BI solution providers, while maintaining sensitive data. These domains can facilitate the development of more data-driven BI insights, hence

improving the decision-making process and operational efficiency in the auto parts sector.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work, the authors used ChatGPT and Grammarly to improve readability and language of the manuscript. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.

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Conflict of Interest

The authors have no conflicts of interest to declare.