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Data Science as a Survival and Expansion Strategy for Small and Medium-Sized Companies Companies

Data Science as a Strategy for Survival and Expansion of Small and Medium-Sized Enterprises

Author: Vinícius de Souza Alexandre

Graduated in International Relations, from the Armando Álvares Penteado Foundation (FAAP)

Summary

The growing complexity of global markets, coupled with ongoing technological transformations, poses a structural challenge for small and medium-sized enterprises (SMEs): surviving and thriving in an environment of intense volatility. Data science, defined as the integration of statistics, machine learning, and computational analytics, is emerging as a strategic vector capable of redefining organizations' decision-making logic, enabling the transition from intuitive practices to evidence-based approaches (PROVOST; FAWCETT, 2013; DAVENPORT; HARRIS, 2017). This article analyzes, from a critical and interdisciplinary perspective, how data science can be applied to SMEs, offering tools for risk anticipation, early identification of opportunities, product customization, and process optimization.

It is argued that technological democratization and access to low-cost tools make it possible to adopt data science as a minimum infrastructure for competitiveness.
Mobilizing literature up to 2022, the study shows that the survival of SMEs will depend on the ability to transform dispersed data into applied organizational intelligence, constituting not only a technical resource, but a strategic imperative for long-term sustainability.
term.

Keywords: Data Science; Small and Medium Enterprises; Decision Making; Analytical Intelligence; Digital Transformation.

Abstract

The increasing complexity of global markets, coupled with ongoing technological transformations, imposes a structural challenge on small and medium-sized enterprises (SMEs): surviving and thriving in highly volatile environments. Data science, defined as the integration of statistics, machine learning, and computational analysis, emerges as a strategic vector capable of redefining organizational decision-making by shifting from intuition-based practices to evidence-driven approaches (PROVOST; FAWCETT, 2013; DAVENPORT; HARRIS, 2017). This article

critically and interdisciplinarily examines how data science can be applied to SMEs, offering instruments for risk anticipation, early opportunity diagnostics, product personalization, and process optimization. It argues that technological democratization and access to low-cost tools make the adoption of data science a minimum infrastructure for competitiveness. Drawing on literature up to 2022, the study highlights that SME survival will depend on their ability to transform dispersed data into actionable organizational intelligence, constituting not only a technical resource but a strategic imperative for long-term sustainability.

Keywords: Data Science; Small and Medium Enterprises; Decision Making; Analytical Intelligence; Digital Transformation.

1. Introduction: the urgency of an analytical shift in SMEs

The survival of small and medium-sized businesses, traditionally sustained by proximity to consumers and the ability to adapt quickly, is threatened in a scenario in which information has become the most important asset. The exponential increase in data generation across all sectors of the economy has brought with it the need for tools capable of extracting value from this information. For SMEs, which operate with tighter margins and are more vulnerable to crises, the ability to interpret data is no longer a competitive advantage but a prerequisite for market survival (BRYNJOLFSSON; MCAFEE, 2017).

Data science, as an interdisciplinary field, combines statistics, machine learning algorithms, and computational science to generate predictive and descriptive models capable of providing more robust responses to uncertain environments. Provost and Fawcett (2013) argue that the main function of this discipline is to convert raw data into analytical narratives that support strategic decisions. This conversion is particularly relevant for small and medium-sized organizations, whose resource constraints require more efficient and assertive allocations.

At the macroeconomic level, the digitalization of production chains and the consolidation of the so-called 4.0 economy have redefined the foundations of competitiveness. McKinsey & Company (2020) found that data-driven companies are up to 19% more likely to maintain a sustainable advantage in their sectors. Although these studies focus on large corporations, the underlying mechanisms—such as continuous feedback, systematic experimentation, and the reduction of information asymmetries—are replicable in SMEs, particularly through the spread of cloud solutions and accessible analytics software.

Technological democratization has reduced entry barriers that, until a few years ago, made data science adoption unfeasible for smaller companies. SaaS business intelligence tools, open-source libraries, and automated analytics platforms have made data science economically viable, shifting the challenge from acquisition to training and cultural integration. As Iansiti and Lakhani (2020) emphasize, contemporary competition is not based solely on tangible assets, but on digital architectures capable of continuous learning.

This context requires SMEs to strategically reposition themselves. Managerial intuition, while still relevant, is insufficient to deal with the complexity of today's value chains.
Data science, by offering more accurate diagnoses and reliable predictive models, is a tool for reducing uncertainty. Shmueli and Koppius (2011) have already warned that predictability, when well-structured, can mitigate critical failures and increase the margins of success, strengthening organizational resilience.

The introduction of this perspective does not eliminate the need for strategic planning, but rather complements it with a layer of quantitative and qualitative evidence that supports decisions. In other words, data science does not replace entrepreneurial vision, but rather provides input for it to be realized under less risky conditions. The survival of SMEs, therefore, depends on the ability to combine empirical knowledge with analytical intelligence.

This article therefore proposes a discussion of how data science can be incorporated into small and medium-sized businesses in a structured manner, examining its benefits, limitations, and practical implications. The premise is that business survival, in increasingly unstable environments, will depend on the ability to transform scattered data into strategic intelligence, redefining the parameters of competitiveness in the 21st century.

2. Data Science and the reconfiguration of market analysis

Market analysis, a central element of any organization, takes on even greater importance in SMEs, which have limited resources to deal with fluctuations in demand.
Historically, many of these companies have based their strategies on empirical observations or the accumulated experience of managers. Data science, however, offers a qualitative leap by enabling the translation of large volumes of data into statistical patterns and robust predictions (CHEN; CHIANG; STOREY, 2012).

The use of predictive models transforms the decision-making process, allowing companies to anticipate consumption trends, identify changes in demand, and dynamically adjust inventories. This approach reduces waste, optimizes costs, and strengthens competitiveness.
Kumar and Reinartz (2016) highlight that personalizing offers, based on behavioral data, not only increases the conversion rate, but also increases customer loyalty — a vital factor for smaller organizations.

Beyond prediction, data science enables more refined causal analysis. A/B testing and advanced statistical techniques allow us to distinguish genuine effects from simple correlations, ensuring that marketing or innovation investments are directed to initiatives with the highest potential return (PROVOST; FAWCETT, 2013). This sophistication reduces the margin of error and protects companies with a lower tolerance for financial losses.

Another transformative aspect is dynamic pricing. Advances in machine learning algorithms enable real-time adjustments, taking into account variables such as seasonality, competitive activity, and purchasing behavior. Davenport and Harris (2017) emphasize that small price variations in strategic products can have a disproportionate impact on SMEs' cash flow, giving them greater financial resilience.

The use of data science in market analysis also strengthens the identification of underexplored niches. Using behavioral data, it's possible to detect latent demands and develop products or services targeted at specific segments. This adaptability, supported by analytical evidence, increases competitiveness and allows SMEs to occupy market spaces that might otherwise go unnoticed in conventional analyses.

Recent reports from McKinsey & Company (2022) indicate that companies that incorporate continuous data monitoring practices can respond more quickly to external shocks, such as health crises or economic fluctuations. For SMEs, building continuous learning models that adapt in real time to changing contexts can mean the difference between continuity and stagnation.

This final section highlights the importance of translating analysis into language accessible to managers. Interactive dashboards, interpretive reports, and recommendation systems transform statistical results into actionable insights, bridging the gap between data experts and decision-makers. This interface is essential for data science to become truly strategic, consolidating its position as a tool for organizational survival.

3. Internal Resource Management: Data-Driven Efficiency

Managing internal resources is one of the biggest challenges faced by small and medium-sized companies, given that they operate in contexts of limited capital, lean teams, and often poorly standardized processes. In this scenario, data science represents a tool capable of promoting the rationalization of material, human, and financial resources, mitigating waste and increasing operational efficiency. By translating data into performance metrics, it becomes possible to structure indicators that support decision-making and enable continuous adjustments—a critical factor in organizations that cannot afford prolonged failures.

The first aspect to be highlighted is the use of data analysis for financial management. Cash flow forecasting models based on machine learning algorithms allow for the anticipation of periods of increased or decreased liquidity, guiding credit strategies, negotiations with suppliers, and investment planning. Studies by Davenport and Bean (2021) indicate that organizations that adopt analytical mechanisms in their finances reduce the likelihood of default by up to 30% and are able to align operating costs with realistic growth targets.

Another key focus is workforce management. Using data to map individual and collective productivity, identify skills gaps, and predict employee turnover enables greater alignment between human capital and strategic objectives. McKinsey & Company (2020) argues that companies that apply advanced analytics to their talent management increase key employee retention by up to 25%. For SMEs, which rely heavily on small teams, retention becomes essential for operational continuity.

In the field of inventory management, data science offers models that combine sales history, seasonality, and consumer behavior to calibrate replenishment levels. This practice, in addition to reducing losses due to excess inventory, prevents stockouts that compromise the customer experience. Chen, Chiang, and Storey (2012) emphasize that the use of data in supply chain management increases predictability and reduces operational uncertainty, allowing small businesses to compete for spaces previously dominated by larger organizations.

Additionally, continuous monitoring of internal processes through sensors and digital systems integrates SMEs into the Industry 4.0 mindset. This integration enables real-time analysis, detecting failures before they become critical issues. The culture of predictive maintenance, already established in large industries, is beginning to be viable in smaller organizations as well, with a direct impact on cost reduction and increased reliability.

Data-driven management, however, requires significant cultural changes. Davenport and Harris (2017) emphasize that managers' resistance to abandoning empirical practices constitutes one of the biggest barriers to the full adoption of data science. Therefore, training in digital and statistical literacy is as essential as the implementation of technical tools, creating an ecosystem in which the interpretation of metrics is an integral part of the decision-making process.

It's important to emphasize that the internal efficiency achieved through data science transcends specific gains and directly impacts organizational survival. By reducing waste, predicting financial risks, and optimizing workforce management, SMEs increase their resilience, becoming more competitive in increasingly uncertain markets. Data science, in this context, should be understood as a fundamental architecture for sustainability, not just an additional technological resource.

4. Optimizing Operational Processes: Predictive Intelligence in Practice

Process optimization represents one of the areas where data science has proven most transformative. In small and medium-sized companies, where resources are scarce, operational efficiency is crucial for survival and sustainable growth. The use of predictive algorithms and advanced statistical models makes it possible not only to identify bottlenecks but also to propose solutions in real time, reducing costs and increasing productivity.

One of the most significant examples of data science's application in process optimization is the analysis of production chains. Integrating data from different stages of production allows us to detect inefficiencies and propose adjustments that improve the workflow.
According to Brynjolfsson and McAfee (2017), the digitalization of internal processes gives organizations greater capacity to adapt to external shocks, making them more agile and competitive.

Predictive maintenance is another field where analytical advances demonstrate a direct impact. Equipment monitoring using connected sensors and time-series analysis makes it possible to predict failures before they occur, reducing repair costs and avoiding unexpected downtime. McKinsey & Company (2022) estimated that adopting this practice can reduce maintenance costs by up to 40% and increase the useful life of machinery and equipment by 20%, representing a significant benefit for smaller companies.

Beyond production, data science can optimize customer service processes.
Natural language processing algorithms analyze interactions across digital channels and identify patterns of dissatisfaction, suggesting personalized responses and adjusting support workflows. This not only improves the customer experience but also reduces issue resolution time and associated service costs.

In the logistics field, data analysis applied to route planning allows for lower transportation costs, reduced emissions, and improved on-time delivery. This ability to optimize logistics operations enables SMEs to compete with larger players, whose differentiating factor often lies in more robust distribution chains. Davenport and Bean (2021) emphasize that the application of analytical models in logistics significantly increases efficiency and creates value perceived by the end customer.

However, implementing data-driven optimization is not without its challenges. The integration of heterogeneous systems, the need for data standardization, and information security are frequent barriers. The literature highlights the importance of governance policies and the use of *data quality management* practices to ensure the reliability of analytical models (IANSITI; LAKHANI, 2020). Without this infrastructure, there is a risk that decisions will be made based on incomplete or biased data, compromising the final result.

Data science's significant contribution to process optimization, however, isn't limited to cost reduction. It's a cultural transformation process, in which decisions are continually improved as new data is incorporated and analyzed.
In this sense, data science not only improves the efficiency of SMEs, but redefines their operating logic, making adaptability and innovation a constituent part of their corporate identity.

5. Innovation in Products and Services from Data Science

Innovation is a vital element for the competitiveness of small and medium-sized businesses, as it ensures not only differentiation but also the ability to adapt in volatile environments. Data science offers SMEs an analytical tool that transforms the innovation process into something less random and more systematic, allowing new products and services to be developed based on solid market evidence. This methodological shift alters the way business creativity is exercised, replacing trial and error with decisions based on precise metrics and predictive analysis.

One area where data science proves particularly valuable is in analyzing consumer behavior. Mining data from digital interactions, purchase histories, and customer feedback enables the identification of latent demands—needs that have not yet been clearly expressed in the market but can be converted into concrete opportunities. Studies by Kumar and Reinartz (2016) show that personalized solutions generate greater loyalty and significantly extend the customer lifecycle.

Data science also expands SMEs' ability to conduct rapid prototyping and validate innovation hypotheses. Using predictive models, it is possible to simulate acceptance scenarios for a new product before its launch, reducing the risk of commercial failure. This approach allows for more efficient resource allocation, a critical aspect for companies with limited financial leverage. The logic of systematic experimentation, inspired by the scientific method, strengthens organizations' innovative resilience (PROVOST; FAWCETT, 2013).

Another relevant aspect is the integration of data science and design thinking methodologies. Analyzing large volumes of data can guide creative processes, offering insights into user preferences and behaviors. Thus, the creative intuition of managers and designers is enhanced by concrete information, resulting in solutions more aligned with the public's real needs. McKinsey & Company (2020) emphasizes that organizations that combine creativity and data outperform in innovation and value creation.

The impact of data science on innovation isn't limited to new product development, but also involves the reconfiguration of existing services. Through continuous usage analysis, real-time feedback, and behavioral segmentation, SMEs can dynamically adjust their offerings, maintaining relevance in highly competitive markets. This adaptability is essential for companies that rely on customer loyalty in local or regional contexts.

Using data to identify emerging trends further expands the possibilities for innovation. By monitoring social media, digital forums, and economic indicators, it's possible to detect cultural and consumer shifts at an early stage, offering SMEs the opportunity to position themselves as pioneers in specific segments. This positioning

advance strengthens reputation and consolidates the brand in transforming ecosystems (DAVENPORT; BEAN, 2021).

Finally, it's important to emphasize that data-driven innovation doesn't replace entrepreneurial vision, but rather complements it with more precise tools. Business creativity remains fundamental, but when combined with data science, it becomes more assertive, less vulnerable to failure, and more aligned with consumer expectations. In this way, innovation ceases to be an uncertain risk and becomes a continuous process of value generation supported by analytical foundations.

6. Risk Reduction and Crisis Management with Data Science Support

The survival of SMEs depends not only on their ability to grow, but also on their ability to withstand crises and mitigate risks in unstable environments. Data science offers an arsenal of techniques for anticipating problems, monitoring critical variables, and responding quickly to adverse scenarios. By structuring predictive analytics processes, smaller companies can detect signs of crisis before they become irreversible, strengthening their organizational resilience.

One of the most relevant examples is the application of predictive models in financial management. By cross-referencing historical cash flow data with external indicators, such as interest rates and exchange rate fluctuations, it is possible to anticipate moments of financial stress and plan contingency measures. Studies by McKinsey & Company (2022) indicate that organizations that use predictive analytics in their risk management reduce losses resulting from economic crises by up to 25%.

Data science also plays a strategic role in supply chain management, which is often a point of vulnerability for SMEs. Continuous supplier monitoring, combined with geopolitical and climate risk analysis, allows disruptions to be anticipated and alternative supply plans to be created. This adaptability ensures greater stability in times of uncertainty and differentiates companies that survive from those that fail to react.

In customer management, data allows for the identification of default behaviors and prediction of contract cancellation patterns. This allows SMEs to take preventative action, renegotiating terms or offering special conditions to at-risk customers.
Davenport and Harris (2017) highlight that anticipating losses is one of the main advantages of predictive analysis, as it reduces immediate impacts and strengthens relationships in the long term.

Data science also proves relevant in reputational crises. Monitoring social media and digital channels makes it possible to identify image crises in their early stages, before they escalate and undermine consumer trust. Analysis algorithms

of feelings allow mapping negative perceptions and guiding quick and appropriate responses, minimizing damage and preserving the brand's credibility.

Another aspect to consider is operational risk management. Anomaly detection models, applied to internal processes, help identify failures and irregularities before they compromise the company's operations. This type of monitoring strengthens internal controls and increases the ability to prevent fraud, deviations, or critical errors in areas such as logistics, production, and finance.

Finally, integrating data science into crisis management not only strengthens immediate response capabilities but also contributes to building an organizational culture focused on prevention. Companies that develop continuous analysis mechanisms become less vulnerable to external shocks, more agile in their responses, and better prepared to seize opportunities even in adverse contexts. For SMEs, this data-driven resilience can mean the difference between survival and collapse.

7. Evidence-Based Decision Making: The End of Intuition as the Only Recourse

Decision-making is the core of management in any organization, but in small and medium-sized businesses, this process is even more critical, given that mistakes often have immediate and difficult-to-absorb impacts. Historically, SME managers have relied on intuition and practical experience to guide their decisions. While these elements remain relevant, the complexity of contemporary markets demands more sophisticated mechanisms. Data science emerges as the way to replace or complement intuition with robust evidence, reducing the margin for error and increasing the predictability of consequences.

The data-driven decision process allows you to structure testable and measurable hypotheses. Davenport and Harris (2017) have already highlighted that organizations that use data analysis in their decision-making processes demonstrate superior performance in innovation, profitability, and customer retention. This superiority stems from the ability to construct comparative scenarios and project risks based on empirical evidence. For SMEs, the ability to test hypotheses before making investments can mean the difference between continuing or discontinuing their activities.

Data-driven decision-making also strengthens the alignment between strategic objectives and performance metrics. When clear indicators are defined and monitored in real time, managers can quickly adjust their actions to address deviations or emerging opportunities. This dynamism is essential for smaller companies, whose response times need to be faster than those of large corporations.

Furthermore, data science enables more inclusive decisions that are less dependent on a single leader's perspective. By democratizing access to dashboards and analytical reports, different levels of the organization can contribute complementary insights.

enriching the decision-making process. This openness reduces the concentration of power in a single figure and promotes a more collaborative organizational culture.

Another key focus is strengthening resilience. Evidence-based decisions are less susceptible to cognitive biases, such as excessive optimism or exaggerated risk aversion. Research by Shmueli and Koppius (2011) shows that the use of predictive models increases the accuracy of strategic choices, mitigating judgment errors common when managers rely solely on subjective impressions.

The practice of continuous experimentation, derived from the scientific method, also forms part of the decision-making process as an extension of data science. Controlled testing, regression analysis, and causal modeling allow SMEs to adjust their strategies in short learning cycles, reducing costs and maximizing results. This adaptive management model brings small businesses closer to the practices established by large global corporations.

In short, data science transforms decision-making into a systematized, transparent, and replicable process. Intuition, once predominant, becomes just one of the elements considered, subordinated to a logic of empirical validation. This movement, simultaneously cultural and technological, marks a historic rupture in SME management and redefines the parameters of organizational success.

8. Data Science as a Pillar of Business Sustainability

Corporate sustainability is not limited to the environmental field, but also involves an organization's ability to remain economically viable, socially responsible, and culturally relevant in the long term. For small and medium-sized businesses, this concept takes on even more sensitive dimensions, as their survival depends on a delicate balance between costs, innovation, and reputation. Data science, in this context, emerges as a pillar of support, providing the necessary tools to align efficiency, growth, and responsibility.

In the economic field, data analysis allows for the identification of opportunities for energy efficiency, logistics optimization, and waste reduction. These gains not only strengthen cash flow but also position the company in line with environmental sustainability practices, increasingly demanded by consumers and business partners. McKinsey & Company (2022) pointed out that companies that adopt data-driven sustainability metrics increase their attractiveness to investors, which expands their opportunities for accessing capital.

From a social perspective, data science favors more inclusive and effective policies. By analyzing customer and community profiles, SMEs can identify specific needs and adjust their product and service offerings to serve previously neglected audiences. This practice

strengthens social bonds and expands potential markets, while contributing to reducing inequalities. Chen, Chiang, and Storey (2012) argue that the application of big data can be used not only for commercial purposes but also to generate tangible social value.

Cultural sustainability is also supported by data science. Real-time trend monitoring and digital interaction analysis enable small businesses to stay up-to-date with changes in societal behavior and values. This ability to adapt culturally is crucial to maintaining relevance in constantly changing markets.

Another crucial aspect is governance. Data science, when integrated with *compliance* and transparency policies , contributes to building trusting relationships with internal and external stakeholders. The ethical and responsible use of data strengthens corporate legitimacy, preventing reputational crises that can be fatal for smaller organizations. Davenport and Bean (2021) warn that companies that fail to establish ethical standards for data use run significant risks of losing credibility, which compromises their long-term sustainability.
term.

Furthermore, incorporating data-driven sustainable practices opens doors to certifications, partnerships, and integration into global value chains. In a world where financial capital and end consumers increasingly value companies committed to social and environmental responsibility, SMEs that rely on evidence to structure their sustainability strategies stand out.

Finally, it's important to understand that data science, by strengthening business sustainability, also ensures the longevity of SMEs themselves. By balancing innovation, efficiency, and responsibility, these organizations can transcend the limitations imposed by their size and establish themselves as relevant players in economic and social ecosystems. Thus, data science is not just an operational resource, but the backbone of a lasting business strategy.

Conclusion

The analysis conducted throughout this article demonstrates that data science is no longer a differentiator restricted to large corporations, but has become a strategic imperative for the survival and consolidation of small and medium-sized businesses. In an environment characterized by economic instability, global competition, and constant technological transformation, SMEs that remain tied solely to intuitive management models face increasing risks of obsolescence. Therefore, adopting data-driven practices is not an optional choice, but a prerequisite for organizational viability in the 21st century.

It was found that data science not only acts at the operational level, but also structurally reconfigures decision-making, innovation, and sustainability processes. By providing

By providing more accurate diagnoses and more reliable projections, it creates a governance environment capable of reducing uncertainty and increasing the margins of success. This logic doesn't negate the importance of managers' empirical experience, but rather complements it with tools that enhance its effectiveness, converting intuitions into testable hypotheses and actionable evidence.

The reviewed literature shows that companies that adopt analytical practices achieve superior results in profitability, innovation, and customer retention. This pattern, although observed in large corporations, is equally applicable to SMEs, as technological democratization has made previously financially unviable analytical tools accessible. The current challenge no longer lies in the cost of technology, but in the cultural and organizational capacity to incorporate it systematically, overcoming internal resistance and skills gaps.

Another important point is that data science doesn't just boost immediate competitiveness, it also contributes to long-term sustainability. By aligning economic efficiency, social responsibility, and cultural relevance, it strengthens the role of SMEs as agents of change in broader ecosystems. Companies that use data responsibly not only survive but also position themselves as key players in global value chains, gaining legitimacy with customers, partners, and investors.

In the field of innovation, data science acts as a catalyst, transforming creative processes into systematized, evidence-driven practices. This combination of creativity and analytical rationality reduces risks and increases the effectiveness of initiatives. For smaller organizations, where room for error is limited, this approach represents a decisive differentiator, enabling innovations to achieve greater impact with lower investment.

The ability to anticipate risks and manage crises has also proven to be one of the most important contributions of data science to SMEs. In a scenario marked by recurring disruptions—such as health crises, economic fluctuations, and political instability—the ability to detect early signs and prepare rapid responses is a vital advantage. This type of resilience not only protects the continuity of operations but also increases stakeholders' confidence in the organization's ability to adapt.

Applying data to internal resource management and operational processes further reinforces this framework. Inventory optimization, predictive equipment maintenance, and streamlining logistics flows exemplify how data science can generate concrete efficiency gains. Such practices allow SMEs to compete in markets previously dominated by larger companies, reducing asymmetries and strengthening their competitive position.

However, it's important to recognize that incorporating data science presents significant challenges. Information standardization, systems integration, and data quality assurance are recurring obstacles. Furthermore, ethical issues related to the use of personal data require constant attention, otherwise the company's credibility may be compromised.

The sustainability of data science adoption will therefore depend on the ability of SMEs to structure governance policies and invest in digital literacy for their employees.

Given this panorama, it is concluded that data science should not be understood only as Not just a technical tool, but a **strategic architecture** that spans all dimensions of the organization. It redefines how companies perceive their environment, formulate their strategies, and build their legitimacy in the market. For SMEs, whose vulnerability is greater, this architecture constitutes not only a competitive advantage, but a survival requirement.

Finally, this study reinforces the need for managers, researchers, and public policymakers to understand the centrality of data science for the future of small and medium-sized businesses. Disseminating knowledge, expanding incentives for digitalization, and building support networks can accelerate this process, ensuring that data science consolidates itself as a collective asset of the contemporary economy. In an information-driven world, survival will be the privilege of those who know how to transform data into intelligence, and thriving will be the destiny of organizations that can align this intelligence with values of innovation, ethics, and sustainability.

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