

Integrating esg principles into industrial strategy: a paraguayan case in the plastics industry

Integrando princípios esg na estratégia industrial: um caso paraguaio na indústria de plásticos

Integrando los principios esg en la estrategia industrial: un caso paraguayo en la industria del plástico

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Received in: 5/8/2026

Acepted in: 7/6/2026

DOI: 10.23900/ra.v24i115.1389

Citation format:

Azar, F. A. B., & Dias, M. de O. (2026). Integrating esg principles into industrial strategy: a paraguayan case in the plastics industry. *Aposta: Revista De Ciencias Sociales*, 24(115), e1389. <https://doi.org/10.23900/ra.v24i115.1389>

Abstract

This is a descriptive case study that explains how Environmental, Social, and Governance (ESG) criteria are implemented in industrial corporations. It concentrates on the analysis of environmental management as a value. Corporate value can be increased through the implementation of the circular economy, reverse logistics, and energy efficiency. The Triple Bottom Line and ISO management systems are among the frameworks used in this study. Environmental governance makes compliance with regulations add value to the organization. In the case studied, efficiency and costs have been increased, and the organization's image has been improved. However, there are some limitations to the increase in the organization's value, due to product homogeneity and certification requirements. The case study is useful for analyzing the implementation of ESG in industrial corporations in the Mercosur region and is particularly useful for scholars and managers interested in improving the organization's sustainability by using environmental management to create long-term value.

Keywords

Environmental, Social, and Governance (ESG), Circular Economy, Reverse Logistics, Triple Bottom Line, Case Study.

Resumo

Este é um estudo de caso descritivo que explica como os critérios de *Environmental, Social, and Governance* (ESG) são implementados em corporações industriais. O foco está na análise da gestão ambiental como fonte de valor. O valor corporativo pode ser ampliado por meio da implementação da economia circular, da logística reversa e da eficiência energética. O *Triple Bottom Line* e os sistemas de gestão ISO estão entre os referenciais utilizados neste estudo. A governança ambiental transforma a conformidade regulatória em valor para a organização. No caso analisado, houve

aumento da eficiência, redução de custos e melhoria da imagem institucional. Contudo, existem limitações para o aumento do valor organizacional, relacionadas à homogeneidade dos produtos e às exigências de certificação. O estudo de caso é útil para analisar a implementação do ESG em corporações industriais na região do Mercosul e especialmente relevante para acadêmicos e gestores interessados em aprimorar a sustentabilidade organizacional por meio da gestão ambiental e da criação de valor de longo prazo.

Palavras-chave

Environmental, Social, and Governance (ESG), Economia Circular, Logística Reversa, Triple Bottom Line, Estudo de Caso.

Resumen

Este es un estudio de caso descriptivo que explica cómo se implementan los criterios de Environmental, Social, and Governance (ESG) en corporaciones industriales. Se concentra en el análisis de la gestión ambiental como fuente de valor. El valor corporativo puede incrementarse mediante la implementación de la economía circular, la logística inversa y la eficiencia energética. El Triple Bottom Line y los sistemas de gestión ISO se encuentran entre los marcos utilizados en este estudio. La gobernanza ambiental convierte el cumplimiento normativo en valor para la organización. En el caso analizado, se ha mejorado la eficiencia, reducido los costos y fortalecido la imagen institucional. Sin embargo, existen limitaciones para el aumento del valor organizacional, relacionadas con la homogeneidad del producto y los requisitos de certificación. El estudio de caso es útil para analizar la implementación del ESG en corporaciones industriales de la región del Mercosur y resulta especialmente relevante para académicos y directivos interesados en mejorar la sostenibilidad organizacional mediante la gestión ambiental y la creación de valor a largo plazo.

Palabras clave

Environmental, Social, and Governance (ESG), Economía Circular, Logística Inversa, Triple Bottom Line, Estudio de Caso.

1. Introduction

Environmental management, as a component of ESG practices in large industrial organizations, has become good management practice. The “sustainability” paradigm, originally linked to “green” and socially responsible organizations, has today become a strategic framework enabling corporations to create value and become more competitive. Industries that work with plastics face significant challenges in improving their environmental practices. As a result, such corporations are exposed to potential reputational damage and increased pressure from a variety of regulatory bodies. On the other hand, those that implement more efficient environmental practices will not only comply with requirements but also create value for the company as a whole. In addition, they will be able to offer new products and services to the market and implement innovative practices.

Sustainability today is more than a subject matter. It is a management tool that companies use to create value. One of the most widely used tools for measuring a company’s success beyond financial results is the Triple Bottom Line (TBL), introduced by Elkington (2001, 2002, 2006).

Sustainability practices are analyzed from a governance perspective, which assesses a company's transparency, accountability, and stakeholder participation. In short, sustainability has become an integral part of a company's management system and should not be seen as additional to other management practices (Farag, 2026).

Several studies have examined how ESG practices are operationalized within organizations through international standards. For instance, the environmental management standard ISO 14001 and the quality management standard ISO 9001 enable organizations to develop internal structures that minimize their environmental impact while increasing organizational efficiency. Studies explain how these practices are embedded in organizations and how they can contribute to sustainability (Da Fonseca, 2015; Ferreira, Poltronieri, and Gerolamo, 2019). Other studies have recently analyzed the update to ISO 14001:2015 and the opportunities and challenges it presents for organizations (Fonseca and Domingues, 2018). Furthermore, studies analyze the evolution of ISO systems and the barriers to their implementation in organizations. These studies highlight the commitment that organizations must make to adopt these systems as well as the cultural issues involved (Lutete, 2025; Sorooshian and Yee, 2019).

Researching ESG practices in emerging economies where there is an ongoing flow of investments into industries in these markets—within the environmental and social frameworks available to such industries—while recognizing their idiosyncrasies, is another relevant goal of this book. This type of research shall address how environmental, social, and governance practices can be implemented by industries of emerging economies, acknowledging their vulnerabilities and identifying best practices to tackle those challenges in the governance of environmental registries of indigenous communities of the Amazon, for instance, as explored by research conducted by Da Rocha and Bastos (2026). Likewise, other studies seek to analyze the importance of governance and innovation practices for project management, and to understand how sustainability practices are embedded in organizations' strategic decision-making processes, as does the research led by Araujo and Dias (2026).

The application of ESG practices in industries that produce and use plastics is becoming increasingly contentious. An environmental management strategy in a company producing plastics must address the waste generated by its products, improve resource use efficiency, and present a positive image. The environmental management practices a company uses to tackle these challenges can also add value, as they enhance its CSR and, therefore, its social legitimacy and reputation. Many companies in Latin America, including in the Mercosur region, are incorporating ESG practices into their operations to comply with regulatory requirements and gain a competitive edge.

This article examines the practices of a company that seeks to transform its environmental governance into value, focusing on a case study of an industrial corporation in the Mercosur region of South America. It describes the strategies this company uses to create strategic value from compliance with ESG principles and also discusses limitations to its practices, such as product homogeneity and the need for certificates and registrations. In the article, the case study is put within the frameworks of sustainability, governance, and innovation.

The article has three objectives. The first objective is to describe how the ESG criteria are integrated into sustainability and Triple Bottom Line (TBL) frameworks, as well as into the management system standards issued by ISO. The second objective is to describe an industrial corporation in the Mercosur region that manages its environmental performance in line with ESG criteria. The third objective is to analyze the practices of this case study for research and for management.

2. Literature Review

In the Environmental, Social, and Governance (ESG) literature, a shift is taking place from a merely compliance-based approach to incorporating sustainability into business competitiveness. This review paper analyzes the current literature on ESG practices through a theoretical lens on sustainability, corporate governance, ISO management systems, innovation, and supply chain management. Furthermore, an analysis of current studies on ESG practices conducted in Latin America are detailed:

2.1 ESG and Strategic Sustainability

Sustainability, or sustainable development, is currently discussed by several researchers who build on sustainability theory to develop frameworks for measuring organizational performance. In the Triple Bottom Line (TBL) model, Elkington (2001, 2002, 2006), a pioneer in sustainability, proposed an indicator to measure organizations' success across economic, social, and environmental dimensions. In recent years, the same author, together with other researchers, analyzed sustainability from a governance perspective, underlining the importance of organizations' transparency and stakeholder involvement (Elkington *et al.* 2006). Sustainability has recently been used as a management tool for long-term value, in project management from a governance perspective (Araujo and Dias 2026; Farag 2026). Gomes *et al.* (2026) analyzed the current challenges in organizations' environmental management, focusing on reducing waste and increasing resource-use efficiency.

2.2 Governance and Environmental Management

Several studies have examined environmental governance in the Amazon region, including environmental registries for indigenous peoples and communities (Da Rocha and Bastos, 2026). In Latin America, studies examine corporate social responsibility practices (López *et al.*, 2026; Zolano *et al.*, 2026), which can increase an organization's legitimacy when it engages in environmental management. There are also studies that evaluate an organization's environmental performance through audits (Mieles-Giler *et al.*, 2026). In addition, studies on environmental management accounting (Sinuraya and Sudibyo, 2026) and on green innovation to increase a company's competitive advantage have been conducted.

2.3 ISO Standards and Management Systems

As far as ISO standards are concerned, in addition to the Environmental Management – Environmental Management Systems – Requirements with Guidelines for Use (ISO 14001:2015) (Da Fonseca, 2015), there are also several standards related to quality management (ISO 9001), other management systems, and more recent ISO management system standards. In general, sustainability has been operationalized at the operational level thanks to these standards. Organizations that implement these standards are sustainable, as they have established a management system that adds value to their stakeholders while minimizing their environmental impact. On the other hand, the application of ISO 14001:2015 by organizations from several countries has been studied by several researchers. For example, Fonseca and Domingues (2018) conducted a study in Portugal, analyzing several challenges faced by organizations of various sizes and presenting recommendations for the use of such an environmental management system within this country. Lutete (2025) analyzed the evolution of the ISO management systems. Moreover, there are also demotivating factors to the implementation of the ISO 14001:2015 by organizations in Malaysia, which were analyzed by Sorooshian and Yee (2019). The link between Environmental management systems and product life-cycle engineering to encourage their use in circular-economy practices is the subject analyzed by Poltronieri *et al.* (2021).

2.4 Innovation and Human Resource Management

Innovation supports ESG practices and increases their effectiveness. In the context of university management, for instance, sustainable practices that reduce negative environmental impacts have been described by De Oliveira *et al.* (2026). In terms of the workforce, green human resources management can motivate employees' innovation and environmental enthusiasm, as

analyzed by Zhou *et al.* (2026). In this sense, Sinuraya and Sudibyo (2026) studied how green human resources management mediates between competitive advantage and organizational practices, through green innovation.

2.5 Latin American Context

The reviewed studies were conducted in Latin America, a region with specific ESG issues. The findings of the studies on the Environmental Management Practices of organizations conducted by López *et al.* (2026) and Zolano *et al.* (2026) strengthened the legitimacy of the organizations studied. The environmental performance of the organizations analyzed by Miele-Giler *et al.* (2026) was improved by environmental audits. The results of the studies on the governance of environmental sustainability in projects conducted by da Rocha and Bastos (2026) were also reviewed. In general, the reviewed studies examine the opportunities and limitations of ESG integration in Latin American emerging markets.

2.6 Synthesis

A comprehensive approach to integrating ESG practices into organizations is presented. On one hand, sustainability theories (sustainability, Triple Bottom Line – TBL, Elkington, 2001, 2002, 2006), ISO management systems (Da Fonseca, 2015; Ferreira *et al.*, 2019; Fonseca and Domingues, 2018; ISO 9001 and 14001; Lutete, 2025; Poltronieri *et al.*, 2021; Sorooshian and Yee, 2019), environmental and social governance (ESG) practices (Biondo and Dias, 2025; Da Rocha and Bastos, 2026; López *et al.*, 2026; Miele-Giler *et al.*, 2026; Zolano *et al.*, 2026) are presented. On the other hand, sustainability practices (Gomes *et al.*, 2026; Okay *et al.*, 2026; Poltronieri *et al.*, 2021), and practices that align the organizations and stakeholders' interests (Biondo and Dias, 2025). In addition, some empirical studies from Latin America were analyzed to understand how ESG is integrated into organizations in emerging markets, where sustainability is both a necessity and an opportunity.

3. Methodology

The research design for this study is a single descriptive case study of an industrial organization from the Mercosur region. It is in the researcher's interest to thoroughly analyze how ESG principles are implemented within organizations, and therefore, a case study seemed the most appropriate research method. Case studies are particularly suitable for very complex phenomena, which are studied within the real-life context in which they occur. In this type of research, various sources of evidence are combined, and processes and developments are analyzed over a certain period

of time (Yin, 2004). A descriptive case study provides a more in-depth description of an organization's environmental management practices, along with the corresponding governance structures and decision-making processes, than other research methods, such as quantitative studies or cross-sectional analyses (Saunders, Lewis, and Thornhill, 2009). In this study, the descriptive case study provides a suitable framework for analyzing the application of ESG elements and the organization's environmental management within the Triple Bottom Line framework and in conjunction with an ISO management system. This study will follow a descriptive approach; consequently, the case study will be descriptive as well. Descriptive case studies in organizational research examine in-depth practices within an organization (e.g., how organizations manage). Descriptive studies are of use to organizations themselves as well as to other organizations with similar issues. In addition, such studies describe processes and results that are not explained in quantitative studies or cross-sectional studies. Such is the case with this study. The study seeks to provide a narrative description of the practices studied in relation to the organization's environmental management practices, and an analysis of those practices (Saunders *et al.*, 2009).

Data were gathered from organizational documents, technical reports, such as the organization's environmental management reports, and other reports detailing the organization's environmental practices, their management, and their improvement. The reports also include certification reports, which detail the organization's compliance with its environmental management system, such as ISO 14001. This type of data is qualitative and is analyzed in detail using a range of qualitative techniques to gain in-depth insight into the organization's practices (Strauss and Corbin, 1998). The findings were subjected to thematic analysis, revealing several themes that run throughout the data. These include environmental governance, the organization's adoption and implementation of practices within its circular economy strategy, and its practices and procedures that facilitate negotiation with other organizations to achieve its objectives. The themes have been described in detail to provide a clear picture of the organization's practices regarding its ESG issues. Single case studies are subject to several limitations that limit the transferability of results to other organizations, industries, or countries (Yin, 2004). In addition, within the framework of descriptive case studies, there is a risk of insufficient information and incorrect or incomplete data (Saunders, Lewis, and Thornhill, 2009). As a result, qualitative research is particularly vulnerable to researcher bias (Saunders, Lewis, and Thornhill, 2009). However, through constant comparison and reflexivity, the researcher can address these limitations, provided that his or her interpretation is correct and complete.

The limitations identified for the single case study methodology of this study are acknowledged. However, the chosen methodology, which examines a single industrial organization within an industrial sector in a regional context, is suitable for this study's objectives. The focus on a single industrial organization describes and analyzes the successes and problems encountered by the organization in its attempts to implement environmental management. Thus, the methodology chosen for this study combines the advantages of the single case study of Yin (2004), the descriptive analysis of Saunders *et al.* (2009), and the grounded theory techniques of Strauss and Corbin (1998) to study how environmental management can be transformed from a matter of compliance to a matter of strategic value.

4. Case Description

The ESG Case is about an industrial corporation from the Mercosur region, Mega Plásticos SA¹ one of the leading companies from Paraguay that have benefited from the Paraguayan Regime de Maquila (a policy framework created to attract foreign direct investment to stimulate industrialization through tax incentives and flexibility of regulatory requirements). Mega Plásticos SA implements practices of sustainable production of plastic goods and the case analyzes the implementation of ESG practices and the use of environmental management systems for the environmental as a strategic lever of value creation for the corporation for compliance reasons.

5. Context

5.1 Organizational Context

Mega Plásticos SA is 15 years old and operates under the Paraguayan Regime de Maquila. It is a pioneering company in the country's industrial sector. The company began its activities in the mid-2000s and, over the years, it has grown and evolved to become a leader in the region. Its innovative business model is based on the import of advanced recycling technologies and production of finished goods. The Mercosur framework is also used by the Mega Plásticos SA to operate in other countries of the region, taking advantage of the tax benefits and of the flexibility of the maquiladora regime to increase its competitiveness in the global market. The adoption of ESG practices in the company analyzed here is particularly relevant for environmental management purposes, since – as mentioned by Gomes *et al.* (2026) – in Latin America there is an increase in waste generation and a low level of resource use. Mega Plásticos SA transforms pollution agents (plastics) into a valuable

¹ The owners of the company have expressly consented to the disclosure of the company's name for the purposes of this scientific article.

raw material for production of goods and follows a strategy of circular economy by using reverse logistics to add value to its productions. The way that the ESG principles are integrated in the Mega Plásticos SA's strategy for value creation in a sustainable manner, is in accordance with the sustainable development frameworks proposed by Elkington (2001, 2002, 2006).

The "E" (Environmental) pillar of ESG at Mega Plásticos is operationalized through concepts that redefine industrial production: (a) *Circular Economy*: Mega Plásticos SA replaced the linear model of "extract-disposal" with a closed cycle where the waste is reintegrated as an input, generating this circular economy, we have a higher cost with workers, machine investments, process quality controls, but we have gains from not discarding what I understand as a virgin raw material (since we do not use external recycling) which just needed extra care to be able to return to the process as raw material again. Some sectors do not allow the use of this raw material, but we end up using it in other segments, for example a transparent packaging does not allow us to use recycled material and in this case, Mega Plásticos SA manufacture black tarpaulins using this raw material in a greater proportion. (b) *Reverse Logistics*: Mega Plásticos SA implement return channels so that post-consumer material is not lost, but rather valued again in our plant. The business model starts at the foot of the machine, where we have the discards by type and color of plastic, since we use several such as PE, PP, BOPP and PVC. (c) *Impact Mitigation*: Mega Plásticos SA focus on reducing the carbon footprint and energy efficiency, taking advantage of Paraguay's clean matrix, since Paraguay is the only country in the world that generates 100% of energy behind water, so we are known as a model country.

As in any organization, sustainability practices are driven by the corporation's leadership, who are committed to integrating sustainability to the organization's strategy and culture. Farag (2026) asserts that sustainability practices must be part of an organization's management strategy and should not be seen as a secondary add-on practice. In this corporation, environmental governance is also linked to the clean energy strategy promoted by the government of Paraguay. This is because 100% of the country's energy is generated from hydroelectric power plants. Thus, the corporation is also supporting a national strategy that is consistent with its own environmental governance practices. As noted by López *et al.* (2026), in order to increase the legitimacy of an organization in the eyes of its stakeholders, the organization must practice corporate responsibility. In the change process for the implementation of the ESG practices at the corporation the employees of the corporation played an important role. At the beginning the employees were against the use of post-consumer recycled (PCR) resins, because of quality problems of the products made with these materials as well as instable production processes. The negotiation of Biondo and Dias (2025) stressed the interests of the stakeholders. The production employees were negotiated by management. Management provided the

employees with technical support and training for the use of the PCR resins. Thus the employees instead of being imposed by management were involved in the design of the ESG practices of the corporation, which had a positive impact on their commitment to the change process.

The transition to the implementation of ESG practices to this industrial corporation has been developed in three stages, the first one was the implementation of internal recycling systems, starting with the separation of the different types of waste and the different plastic colors in production processes. Practices related to reverse logistics were also implemented in order to manage the product's life cycle. Poltronieri *et al.* (2021) analyzed practices related to environmental management systems for product life cycle engineering. The use of post-consumer recycled resins (PCR) in production requires significant technical challenges. The main problem with PCR is the thermal degradation of the polymers, which are often used in production processes. In the second phase of the Mega Plásticos SA's strategy, the use of PCR resins in production lines was introduced. In order to face these challenges, the company required significant investment in laboratory in order to test the product and the production process in order to control the process and to achieve the desired quality of the product. In order to achieve the desired quality of the product, Mega Plásticos SA also required significant investment in process control in order to achieve homogenization of the batches of raw materials. The use of dynamic filtration, for example, is one of the technologies that can be used in order to achieve production of high-quality products using PCR resins. As Sinuraya and Sud in one of their recent studies stated, the use of dynamic filtration systems has the ability to improve the quality of final products produced from PCR resins.

In order to comply with external requirements of compliance the organization is working in order to obtain environmental and quality management certifications in the real world of business, adopting the two standards ISO 14001:2015 and ISO 9001:2015 for the Environmental and Quality Management Systems (ESMG and QMSG) of the organization. In order to implement sustainability practices in the organization, in order to decrease the negative impacts on the environment and to increase the efficiency in the use of the available resources in order to add value to the organization, these two standards are very useful (Da Fonseca, 2015; Ferreira *et al.*, 2019). In order to implement the standard ISO 14001:2015 for the Environmental Management System of the organization, there are many challenges that organizations have to face during the transition process in order to obtain the certification (Fonseca and Domingues, 2018). For this reason, the corporation of the case study has provided training to its employees and has audited the plant in order to verify if the environmental management system of the organization is working correctly in order to achieve the environmental goals and objectives of the organization. The actions carried out by the organization in order to

implement the ESG practices and the environmental management system of the organization are effective and allow the organization to improve its organizational culture (Mieles-Giler *et al.*, 2026).

5.2 The Paraguayan Scenario and the Maquila Regime

Mega Plásticos S.A., the first large industry in the country, inaugurated in 2005 and also the first Brazilian industry and among the first five companies in the Maquila project, copied at the time from Mexico, is inserted in the industrial context of Paraguay, a country that has been consolidating itself as a strategic hub for Mercosur. Utilizing the Maquila Regime allows our organization to import advanced recycling technologies with tax exemptions, optimizing investment in green technology.

Our plant has regional relevance due to its high production capacity and the ability to export sustainable solutions to demanding markets, such as Brazil, Argentina, Bolivia, Uruguay and other Mercosur partner countries and since 2024 we have joined the USA. Sustainability here is not just a concept, but a market tool that allows us to compete globally through cost efficiency and socio-environmental responsibility, as well as being part of our culture and our ideology of global care.

6. The Transition to PCR and Chip Recycling: The Episode and the Organizational Reaction

Mega Plásticos implemented a robust system for the internal recycling of shavings, discards and defective materials and the transition to the use of post-consumer recycled resins (PCR), only ours, in its production lines. At first, the production team showed technical resistance, fear, distress and expressed fear about the loss of quality; production of the final product and instabilities in the manufacturing process, which with the President's technical knowledge in process, machines and resins, made all the difference propelling his team to success.

As an owner, I led the management in full support of this change, ensuring that the transition was accompanied by technical support and investments in laboratory infrastructure to validate each step of the process, at many times I failed and thought about giving up, but the years and resilience that every industrial must have, today I can say that the decision was assertive, It is worth remembering that the process is never like exact mathematics, which constantly needs supervision and improvement, but it motivates me.

6.1 Technical Breakdown: Thermal Degradation Control

To achieve the standard of excellence required in the MBA, we detail the extrusion process with PCR. The main challenge is to avoid thermal degradation of the polymer's molecular chains. At Mega Plásticos, we control this risk through: (a) *Heat Zone Control*: Micrometric adjustments to gun

temperatures to prevent recycled material from overheating. (b) *Dynamic Filtration*: Use of automatic screen changers with very fine screens to ensure that impurities from the post-consumer material do not affect the physical integrity of the product. (c) *Batch Homogenization*: Mixing processes that ensure that the recycled resin maintains constant mechanical properties. (d) *Separation of products*: Having the separation already at the foot of the machine is the easiest and least complex process, but it requires a lot of conversation with the workers and having the separation with the batch number, the date and the machine, makes it easier to find the person who made a mistake and thus better train the team. (d) *Correct storage*: In the process, it is not enough just to separate, you need to store correctly, for this you need space and constant inspection and analysis, in addition to very well-established controls. (e) *Machine cleaning*: Machine cleaning is teaching the behavior of controls and managements, using KABAN, 5S processes, are fundamental for success.

7. Challenges

The industrial corporation is successfully implementing all of all of the environmental practices. It still has some problems to resolve, for instance, it has not yet reached the product homogeneity desired. In order to export its products to Brazil, for example, the corporation must comply with the strict technical requirements of this country for the certification of the environmental and quality management systems of its production. The ISO implementation demotivating factors, described by Sorooshian and Yee (2019), are not applicable to this corporation, since it is already implementing ESG practices and is very positive with respect to sustainability. However, there is much skepticism with respect to this subject from other stakeholders. There is a global debate with respect to the responsibility of the producers for the waste generated by the plastic products, as described by Gomes *et al.* (2026). Thus, there is uncertainty with respect to the future regulatory requirements that will be applied to this type of waste.

The organization that manufactures plastic products also has an external image that causes environmental pollution. Although the ESG practices of this organization are positive for its external image, there are also many skeptics. They doubt that the corporation is able to reduce the amount of waste it generates and to increase the percentage of post-consumer recycled (PCR) resins used in its production. In order to show the stakeholders that the organization is serious about its commitment to the ESG practices, the organization promoted the concept of sustainability and the practices of the corporation in implementing the circular economy in its production. In addition, the organization also promoted the role of internal sustainability champions. These internal sustainability champions are also employees of the organization and they are expected to be able to advocate the ESG practices of

the corporation to other employees and to be able to support them in implementing these practices in their work.

8. Strategic Outcomes

In terms of how the corporation works, as well as how it generates value, ESG practices have brought many very positive changes. First, Mega Plásticos SA has decreased its use of virgin raw materials needed to produce its various products. This is particularly relevant in terms of plastic materials. In addition, it has reduced costs. And perhaps most importantly, Mega Plásticos SA has been able to keep a large amount of waste out of the landfills. The practices are also allowing the corporation to be leaders in terms of circular economy practices within the Mercosur region (Elkington, 2006).

Finally, regarding the image or reputation that the corporation projects, it is a pioneer in Mercosur in terms of adoption of practices that are part of the circular economy. Although the image is very positive from the point of view of sustainability of an organization that is a pioneer in terms of recycling of materials, in the view of stakeholders, using plastics is not always viewed favorably. Thus, the organization can benefit from implementing practices of green HRM in order to foster the enthusiasm of its employees and their capacity to generate innovations.

9. Discussion

The aim of this case study is to explain how ESG practices are operationalized within an industrial corporation that has embedded sustainability and seeks to generate economic and reputational value. The main practices for achieving sustainability include incorporating ESG practices from the circular economy, using reverse logistics, and managing sustainability practices within management systems monitored and controlled under the ISO framework, as proposed by Elkington (2001, 2002, 2006), and implemented by Ferreira *et al.* (2019) and Da Fonseca (2015). Despite these changes, Mega Plásticos SA's main operational change is a reduction in the use of virgin raw materials. To implement this change, a set of practices to develop sustainability within the organization has been embedded into the company's management system. ISO 14001 and ISO 9001 environmental and quality management systems offer a framework for organizations to develop their environmental and quality practices and implement them to achieve their objectives (Da Fonseca, 2015; Ferreira *et al.*, 2019). In this sense, implementing updated versions of ISO management systems requires cultural changes within organizations, and these changes must be managed by management (Fonseca and Domingues, 2018). The challenge of employees' resistance to using post-consumer

recycled resins in Mega Plásticos SA's products required changes in the company's management. The set of barriers to the successful implementation of ISO management systems identified by Sorooshian and Yee (2019) includes leadership issues and training needs that organizations must manage to implement sustainability practices within their management systems.

In terms of sustainability governance, environmental management enhanced the corporation's legitimacy in its interactions with stakeholders. In this sense, it increased stakeholders' trust in the corporation. According to Elkington (2006), sustainability governance requires transparency and accountability to increase legitimacy for interacting with stakeholders. Lopez *et al.* (2026) and Zolano *et al.* (2026) have investigated how corporate responsibility affects corporate image in Latin America, thereby increasing credibility. Therefore, it seems that sustainability governance is broader than compliance with rules and includes the management of internal organizational culture, as illustrated by the corporation's internal sustainability champions. This has been named as green human resource management by Zhou *et al.* (2026), and it increases employee innovation and enthusiasm. On the other hand, there is a negative perception of plastics, as they are considered non-renewable materials that generate large volumes of waste and cause environmental problems. However, in the study by Gomes *et al.* (2026), the authors argue that plastics can be a strategic material when used responsibly. In this sense, the company studied in this case adopted practices related to the circular economy and reverse logistics, as analyzed by Poltronieri *et al.* (2021), which aim to support environmental management through life-cycle engineering.

Negotiation in the ESG implementation of this industrial corporation was critical to develop sustainability practices within the corporation. The interest-based negotiation approach developed by Biondo and Dias (2025) was extremely useful to the corporation's management in aligning the interests of its management and employees around sustainability practices. As Araujo and Dias (2026) assert, within the project management framework, governance and innovation are integrated; therefore, negotiation frameworks are essential for any sustainability initiative to reconcile the interests of the different stakeholders involved. Even so, as noted by Lutete (2025), ISO management systems are evolving and thus need to be improved to remain competitive. The use of environmental audits, as reported by Mieles-Giler *et al.* (2026), constitutes a means to assess and improve Mega Plásticos SA's environmental performance. The study by Gomes *et al.* (2026) revealed the negative image plastics have in the public eye and, consequently, the need for innovative management practices to transform this material into a valuable resource.

In summary, this case study on practices of a Brazilian corporation has provided to academics and to practitioners from organizations from industries of emerging markets relevant information and

lessons which can be used in order to put into practice sustainability practices and ESG practices in general within the Triple Bottom Line framework, specifically taking into account the application of the existing theoretical frameworks for the integration of sustainability practices within organizations such as ISO practices for sustainability. The study also supported the existing body of knowledge on governance and negotiation practices that affect sustainability in organizations, as well as on recycling and reverse logistics for materials such as plastics. It also analyzed the main opportunities and constraints of integrating sustainability practices into organizations in the plastics industry, and presented recommendations for organizations to generate strategic and sustainable value for all their stakeholders.

10. Implications and Lessons Learned

This case study offers a number of lessons for ESG implementation in industries based in emerging markets, such as those in Mercosur. By incorporating the ESG dimension into a corporation's industrial operations, it is possible to increase the generation of economic and reputational value. In this sense, compliance with environmental and social regulations, as well as with good governance practices, becomes a strategic tool for sustainability management. First, the way in which international standards, such as ISO 14001 (Environmental) and ISO 9001 (Quality), can be used to make ESG a core part of an organization's activities on a day-to-day basis. The case shows how, by embedding environmental management within the organization, Mega Plásticos SA benefited from the structured approaches of the ISO 14001 standard and the ISO 9001 quality management system. The way in which such standards can be updated (Lutete, 2025) requires significant cultural adaptation, placing a heavy burden on organizations. The organization that adopts such a standard must invest in training its employees to apply it correctly. Internal audits also play a key role in sustaining compliance with such a standard.

In terms of lessons that can be learned from the corporation studied in this case, the main takeaway is that the organization's governance system extends beyond mere compliance with regulatory requirements related to sustainability and environmental matters; in fact, it includes a whole array of practices that facilitate the effective and strategic implementation of sustainability at all levels and by all stakeholders of the organization. As already noted elsewhere (Elkington, 2006; López, 2026; Zolano, 2026, etc.), a sustainable organization is one that is managed with the utmost transparency and held accountable by stakeholders for its actions and decisions. From this perspective, the practice of allowing a number of internal sustainability champions to implement sustainability practices within the organization is crucial, as this will create and facilitate the

conditions that allow for the greatest degree of employee involvement and, thus, for the greatest degree of creativity, enthusiasm, and, therefore, for the greatest degree of effectiveness in terms of the organization's efforts at sustainability. As noted elsewhere (Zhou, the use of a number of sustainability 'green' human resource management practices can also increase the level of creativity and innovation implemented by employees, while furthermore, they also increase employees' enthusiasm and motivation to implement practices and policies in terms of sustainability that are favorable to the organization as a whole.

The case also shows that innovation is needed to improve an organization's performance in its ESG matters. The corporation analyzed in this case study had to address technical issues before beginning to use post-consumer recycled resins. The corporation's lab played a crucial role in resolving technical issues to enable the use of resins in the production process. Once the corporation had solved the technical problems, it began using the resins in its production process. To ensure the quality of the production process, the corporation also began to monitor it more closely. As Sinuraya and Sudibyo (2026) stated, innovation is one of the factors that explain success in industrial projects. To embed ESG practices in an organization's management, interest-based negotiation is fundamental for strategically aligning its interests with those of its employees (Biondo and Dias, 2025). The way governance and innovation are managed in projects has been analyzed by Araujo and Dias (2026). As shown above, in the corporation analyzed in this case study, both elements are managed through the same processes and teams; therefore, they are integrated into the organization's management.

The case study also highlights a number of limitations faced by the organization and other organizations in the plastics sector in fully embedding ESG practices into their operations. Product homogeneity is one area in which the organization is striving to improve. Furthermore, in certain export markets where the organization operates, strict certification requirements are in place that are far more demanding than those in other countries. The organization is facing several challenges in its sustainability efforts, which can be addressed through environmental audits designed to monitor and improve its performance. Furthermore, there is a great deal of work required to innovate and better manage plastics, as well as the organization's reputation. In summary, the application of ESG practices has generated several benefits for the corporation. Not only are there operational and strategic benefits, but also reputational benefits. To achieve these benefits, sustainability must be embedded in the organization's culture and supported by good governance, innovation, and negotiation practices. The case study provides further empirical evidence on the opportunities and constraints that ESG practices face in emerging markets.

11. Conclusions

This case study describes how Environmental, Social, and Governance (ESG) practices can be effectively implemented in an industrial corporation in the Mercosur region, using environmental management to create value. Circular economy practices, reverse logistics, and the use of ISO management systems are among Mega Plásticos SA's practices that demonstrate that corporate sustainability is not only compliance but also a key asset for generating long-term value. The Triple Bottom Line (Elkington, 2001, 2002, 2006; Elkington *et al.*, 2006) in this case study specifically refers to environmental management and the value it created for the organization. ISO management systems (Da Fonseca, 2015; Ferreira *et al.*, 2019; Fonseca & Domingues, 2018) were used to implement and embed sustainability practices. From a Governance perspective (López *et al.*, 2026; Zolano *et al.*, 2026), practices were identified that helped the organization build legitimacy and trust with stakeholders. Negotiation and participation (Biondo & Dias, 2025; Araujo & Dias, 2026) by management and employees of the organization created a formal framework for addressing practices and matters of importance. The findings also identified several practices that could be considered innovative. The organization had incorporated a number of technological and organizational practices that enabled it to address specific problems and enhance its competitiveness (Sinuraya & Sudibyo, 2026; Zhou *et al.*, 2026).

A number of limitations, however, were identified that affected the organization's sustainability. The homogeneous nature of the organization's products, certified under multiple sustainability-related certifications, created specific challenges for the organization. Moreover, the organization's use of plastics negatively affected its reputation. This had created a situation in which the value of the organization's products was affected (Lutete, 2025; Miele-Giler *et al.*, 2026; Gomes *et al.*, 2026). It is clear from this case study's findings that the organization must develop specific practices to tackle sustainability-related issues and create long-term value. From a practitioner's perspective, sustainability must form part of an organization's culture. Therefore, practices in Governance, negotiation, and innovation that support sustainability within an organization are crucial for helping organizations create value in sustainability. From a scholarly perspective, this case study provides evidence from one organization in an emerging market (Mercosur) to support or reject claims about ESG integration in emerging markets. The study also identifies a number of practices, opportunities, and constraints that organizations encounter in sustainability.

12. Future Research

The present case study opens up a number of avenues for further research, for instance, regarding the implementation of ESG principles in other Latin American countries. It would be interesting to conduct research in countries such as Chile, Colombia, or Mexico, analyzing the various regulatory frameworks, cultures, and markets, and how companies implement their sustainability policies. However, industrial corporations from emerging markets have to adapt to more mature sustainability environments when doing business in the United States. Open questions for potential studies include possible certification schemes applicable to the corporation in question, as well as the corporation's support for sustainability and innovation through its governance and the use of ISO standards. Last but not least, the study could examine the corporation's negotiation strategies with its corresponding stakeholders across different environments.

A variety of paths the above research could take. Firstly, the embedding of ESG practices within other Latin American countries could provide very interesting research. Also, the ways in which sustainability is currently operationalized in other Latin American countries, such as Chile, Colombia, and Mexico, and in North America, including the United States and Canada, would be very interesting. However, above all, the author is very interested in exploring how an industrial corporation from an emerging market 'negotiates' within the Sustainability environment of a mature market. This would involve a study of issues of: (i) governance; (ii) ISO standards; (iii) innovation; (iv) negotiation and stakeholder management within such a market and within a corporation.

13. References

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