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Tendências, resultados e desafios: estudo das práticas sustentáveis na indústria calçadista brasileira

Trends, results and challenges: study of sustainable practices in the Brazilian footwear industry

Tendencias, resultados y desafíos: estudio de las prácticas sostenibles en la industria brasileña del calzado

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Resumo: Este estudo analisou as tendências, desafios e resultados relacionados às práticas sustentáveis da indústria calçadista brasileira no período pós-pandemia (2022–2023). O objetivo foi identificar iniciativas e avanços que integrem sustentabilidade aos processos produtivos do setor. A pesquisa utilizou a análise de conteúdo categorial-temática, baseada em 21 relatórios da Abicalçados, e organizou as informações em três eixos principais: tendências, resultados e desafios. Os resultados revelaram um aumento no uso de materiais ecoeficientes, maior obtenção de certificações, como o selo Origem Sustentável, e reconhecimento em eventos nacionais e internacionais. Foram destacadas também ações de responsabilidade social, como doações e campanhas colaborativas. Contudo, o estudo identificou barreiras significativas, incluindo altos custos de implementação, falta de mão de obra qualificada e complexidade legislativa. Conclui-se que a sustentabilidade se consolidou como estratégia essencial para a competitividade do setor, ainda que obstáculos persistam. As implicações práticas incluem a necessidade de maior capacitação e incentivo a parcerias.

Palavras-chave: Sustentabilidade; Indústria calçadista; Certificação de origem sustentável; Práticas ecoeficientes; Desafios pós-pandemia.

Abstract: This study analyzed the trends, challenges, and outcomes related to sustainable practices in the Brazilian footwear industry during the post-pandemic period (2022–2023). The objective was to identify initiatives and advancements that integrate sustainability into the sector's production processes. The research employed thematic-categorical content analysis based on 21 reports from Abicalçados, organizing information into three main axes: trends, results, and challenges. The findings revealed an increased use of eco-efficient materials, greater achievement of certifications, such as the Sustainable Origin seal, and recognition in national and international events. Social responsibility initiatives, including donations and collaborative campaigns, were also highlighted. However, significant barriers were identified, such as high implementation costs, a lack of skilled labor, and legislative complexity. The study concludes that sustainability has become an essential strategy for the sector's competitiveness, although challenges persist. Practical implications include the need for enhanced training and encouragement of partnerships.

Keywords: Sustainability; footwear industry; sustainable origin certification; eco-efficient practices; post-pandemic challenges.

sharing of the work with proper acknowledgment of authorship and initial publication in this journal.

Contribuição dos autores segundo a Taxonomia CRediT

IJMD: conceptualization, project administration, investigation, formal analysis, methodology, data curation, visualization, and writing – original draft, review & editing.

MC: supervision, conceptualization, methodology guidance, and writing – review & editing.

DPT: investigation support, formal analysis assistance, and writing – review & editing.

GSJ: methodological support, data discussion, and writing – review & editing.

FEAB: data validation, analytical support, and writing – review & editing.

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Nothing to declare.

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Resumen: Este estudio analizó las tendencias, los desafíos y los resultados relacionados con las prácticas sostenibles en la industria brasileña del calzado durante el período pospandémico (2022–2023). El objetivo fue identificar iniciativas y avances que integran la sostenibilidad en los procesos productivos del sector. La investigación empleó un análisis de contenido temático-categorial basado en 21 informes de Abicalçados, organizando la información en tres ejes principales: tendencias, resultados y desafíos. Los hallazgos revelaron un mayor uso de materiales ecoeficientes, un incremento en la obtención de certificaciones, como el sello Origen Sostenible, y el reconocimiento en eventos nacionales e internacionales. También se destacaron iniciativas de responsabilidad social, incluidas donaciones y campañas colaborativas. Sin embargo, se identificaron barreras significativas, como los altos costos de implementación, la falta de mano de obra calificada y la complejidad legislativa. El estudio concluye que la sostenibilidad se ha convertido en una estrategia esencial para la competitividad del sector, aunque persisten desafíos. Las implicaciones prácticas incluyen la necesidad de fortalecer la capacitación y fomentar asociaciones.

Palabras clave: Sostenibilidad; industria del calzado; certificación Origen Sostenible; prácticas ecoeficientes; desafíos pospandémicos.

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1 INTRODUCTION

The historical development of the Brazilian footwear industry traces back to the 19th century, originating from tanneries and small-scale production aimed at meeting the needs of immigrant populations (Reichert, 2004). During this period, production was concentrated in two key regions: Vale dos Sinos in Rio Grande do Sul and Franca in São Paulo, dominated by small workshops (Costa, 2004; Schemes, 2006). German immigration, beginning in 1824, played a fundamental role in shaping the industry, as German immigrants brought expertise in tanning and craftsmanship, fostering the early development of shoemaking (Costa; Passos, 2004; Schemes, 2006). While production initially relied on manual methods, the late 19th and early 20th centuries witnessed a gradual mechanization process, particularly with the adoption of steam-powered machinery, although artisanal techniques remained prevalent until the 1960s (Costa, 2004).

Significant transformations in the Brazilian footwear sector emerged post-1960s, marked by the sector's entry into the export market (Costa, 2004). Vale dos Sinos distinguished itself as a critical industrial hub due to its strong political connections, advantageous positioning in international trade, and expertise in leather production (Costa, 2004). Beginning in the 1970s, the leather-footwear industry in Rio Grande do Sul underwent a comprehensive industrialization and export-oriented transformation, characterized by increased production capacity, technological advancements, and capital investment (Schneider, 2015). However, the 1980s and 1990s brought challenges, including heightened competition from Asian manufacturers, particularly China, which contributed to a decline in the industry's value and economic crises (Costa, 2004).

Currently, the Brazilian footwear industry faces persistent challenges from Chinese production and other Asian competitors, grappling with issues such as import-export dynamics, counterfeit goods, technological advancements, and cost-effective manufacturing (ABICALÇADOS, 2023f). Despite these pressures, Brazilian brands remain distinguished by their use of high-quality leather and innovative design, ensuring their continued relevance and competitiveness in both domestic and international markets (Kohan *et al.*, 2020).

Moreover, in recent years, sustainability has emerged as a focus for the Brazilian footwear industry, reflecting a global shift towards environmentally and socially responsible production (Feitosa; Sousa, 2013; Meyer; Froehlich, 2018; Pimenta; Périco; Sindelar, 2023). This transition is driven by increasing consumer demand for sustainable products, stricter regulatory frameworks, and the recognition that long-term competitiveness depends on sustainable practices (Feitosa; Sousa, 2013; Meyer; Froehlich, 2018; Pimenta; Périco; Sindelar, 2023). The industry faces the dual challenge of integrating sustainability into its processes while addressing traditional hurdles such as cost pressures, global competition, and technological modernization (Feitosa; Sousa, 2013; Meyer; Froehlich, 2018; Pimenta; Périco; Sindelar, 2023). Key initiatives have included adopting eco-friendly materials (Bodoga *et al.*, 2024), optimizing resource use (Silva *et al.*, 2020; Chagas *et al.*, 2021), implementing circular economy principles (Vier *et al.*, 2021), and enhancing transparency throughout the production chain (Rinaldi *et al.*, 2022).

Furthermore, the Associação Brasileira das Indústrias de Calçados (Abicalçados) provides a comprehensive portfolio of services and publications for the footwear sector, including Abinforma, sectoral and an-

nual reports, market analyses, and foreign trade assessments. This study, which investigates the post-pandemic trends and challenges within the Brazilian footwear industry during the 2022–2023 period, utilized the Abinforma reports as its primary data source. These monthly publications offer systematic updates on the developmental trajectory of the national footwear industry, enabling an in-depth analysis of the sector.

The research employs qualitative thematic-categorical content analysis to systematically examine textual data derived from the Abinforma reports. This methodological approach facilitates the identification of core themes and subthemes that characterize the sector's sustainability initiatives in the post-pandemic context. The analysis seeks to elucidate prevailing trends, operational challenges, and emergent outcomes related to the industry's sustainability strategies during the studied period.

The study's relevance is underscored by its interdisciplinary framework, integrating empirical data from industry reports with theoretical perspectives from academic literature. In this context, we adopt management perspectives such as those proposed by Bennett (Bennett, 1998), which discuss the integration of social values with business practices. Moreover, Kramer and Porter (Kramer; Porter, 2011) argue that companies can create value for both society and shareholders by focusing on areas where business objectives intersect with social goals.

Furthermore, this research contributes to the body of knowledge concerning the Brazilian footwear industry's post-pandemic dynamics, particularly its sustainability efforts. Thus, the findings hold practical implications for industry stakeholders, public policymakers, and academic researchers, providing a basis for informed decision-making and future investigations in this domain.

The primary objective of this study is to explore sustainability in the Brazilian footwear industry, focusing on trends, challenges, and outcomes in the post-pandemic period (2022–2023). Through a qualitative thematic-categorical content analysis, the research examines practices and developments aimed at promoting sustainability within the industry.

2 THE ROLE OF STRATEGIC SUSTAINABILITY IN THE FOOTWEAR INDUSTRY

Sustainability as a corporate strategy involves integrating environmental, social, and governance (ESG) practices into companies' operations and decision-making processes, aiming not only to meet legal obligations but also to create long-term value. Studies show that sustainable practices can bring competitive benefits such as greater operational efficiency, innovation, and a positive reputation among stakeholders, although direct financial impacts are not always immediate or guaranteed, as observed in Indian companies where ESG adoption did not necessarily result in better short-term financial performance (Sachin; Rajesh, 2022). Corporate governance plays a central role, with factors such as board gender diversity, ESG committees, and sustainability-based remuneration positively influencing carbon emission reductions and alignment with global goals such as the Sustainable Development Goals (Oyewo, 2023). Furthermore, green management certifications and technological innovation are important enablers for improving eco-efficiency, especially in industrial sectors with high environmental impact (Ruan; Ding; Yang, 2022). Companies that take responsibility for protecting bio-

diversity and endangered species also stand out in accountability and legitimacy, particularly when they seek partnerships and external recognition (Roberts *et al.*, 2021).

Moreover, the creation of shared value and sustainable value generation are approaches that seek to align companies' economic success with long-term social and environmental benefits. The concept of shared value proposes that companies can simultaneously generate profit and address social challenges by integrating social and environmental needs into their core business, thereby strengthening competitiveness and promoting sustainable development (Yang; Yan, 2020; Li; Zhu; Wang, 2023; Sáenz, 2023). Innovation in management and collaboration with multiple stakeholders are key factors for identifying opportunities that create value for both society and business, driving reputation, sustainable growth, and cultural transformation (Rubio-andrés; Ramos-gonzález; Sastre-castillo, 2022; Tapaninaho; Heikkinen, 2022; Hart; Milstein, 2003). Circular economy practices and collaborative business models, such as those within the sharing economy, expand sustainable value creation by involving different actors and promoting economic, social, and environmental benefits in an integrated manner (Lan *et al.*, 2017; Tapaninaho; Heikkinen, 2022; Cabral; Gohr, 2023). Furthermore, adopting shared value strategies contributes to achieving the Sustainable Development Goals and can improve companies' financial, social, and environmental performance (Almansoori; Nobanee, 2019; Li; Zhu; Wang, 2023; Sáenz, 2023). However, the success of these strategies depends on institutional context, member engagement, and organizational professionalization, requiring adaptive and systemic approaches (Gerrits; Pennink, 2022).

Therefore, sustainability has emerged as an important source of competitive advantage in the footwear industry, especially as consumers and markets increasingly value responsible practices and sustainable products. Companies in the sector have invested in sustainability-oriented innovations, such as the use of recycled materials, efficient waste management, and eco-friendly design, strengthening their reputation and market differentiation (Baier; Rausch; Wagner, 2020; Kwak; Kim; Heo, 2023; Gohr; Rodrigues, 2025). Small and medium-sized enterprises, for example, stand out by adopting sustainability indicators that prioritize product quality, material consumption, and customer satisfaction, thus integrating economic, environmental, and social benefits (Mengistu; Panizzolo, 2021). Collaboration with value chain partners and the adoption of circular economy models further expand competitive potential, enabling product and process innovation (Dwivedi *et al.*, 2022; Kwak; Kim; Heo, 2023). However, challenges persist, including institutional barriers, lack of organizational policies, and difficulties in integrating Industry 4.0 technologies, particularly in emerging countries (Narwane *et al.*, 2021; Dwivedi *et al.*, 2022). Despite these obstacles, literature shows that companies developing dynamic capabilities and aligning sustainability with corporate strategy can not only meet regulatory and social demands but also achieve efficiency gains, customer loyalty, and access to new markets (Hermundsdottir; Aspelund, 2022; Bari; Chimhundu; Chan, 2022; Gohr; Rodrigues, 2025).

Our theoretical framework suggests that integrating sustainability as a core corporate strategy, underpinned by ESG practices, shared value creation, and innovation, enables companies to enhance their competitiveness while addressing social and environmental challenges. Specifically, in the footwear industry, adopting eco-efficient production, circular economy models, and stakeholder collaboration fosters sustainable value generation and market differentiation. However, the success of these strategies is contingent upon organizational

governance, institutional contexts, and dynamic capabilities to overcome barriers and fully realize sustainability's potential. Therefore, our theoretical hypothesis posits that the effective integration of sustainability-oriented strategies within the Brazilian footwear industry generates both competitive and societal value, but its impact is mediated by internal capacities, governance structures, and external institutional environments. This perspective guides our theoretical analysis of outcomes and challenges faced by the sector in implementing sustainability as a strategic imperative.

3 METHODOLOGY

3.1 Methodological procedures, data collection and corpus construction

We conducted documentary research based on Abinforma reports published by Abicalçados, focusing on extracting information to understand the phenomenon (Kripka; Scheller; Bonotto, 2015). With this in mind, we concentrated on the textual and graphical materials contained in the reports, specifically the news presented each month.

Between January 2022 and December 2023, Abicalçados released a total of 21 reports in the Abinforma category. No report was published in October 2022, and in November and December of each year, only a single report was produced. Thus, the empirical corpus of this study comprised 21 reports, as characterized in Table 1. For identification purposes, the reports were coded using the year followed by the respective month; for example, 202201 refers to the report published in January (01) of 2022. The complete list of Abicalçados reports analyzed in this study is available online.¹

3.2 Data Analysis

The data exploration strategy adopted in this study was grounded in the thematic-categorical content analysis methodology outlined by Bardin (Bardin, 1977). This approach focuses on pre-defined categories aligned with the research objectives and is designed to facilitate the systematic interpretation of language, messages, and texts. Bardin's framework emphasizes the importance of understanding the structure, content, meaning, and context of the analyzed materials. In alignment with the observations of Sampaio and Lycarião (Sampaio; Lycarião, 2021), this method enables the construction of objective inferences from textual data through a rigorous process of content coding, which subsequently defines analytical categories such as trends, results, and challenges.

The qualitative analysis involved an exhaustive review of 21 Abinforma reports. Each report underwent meticulous scrutiny to map recurring themes, which were systematically recorded in a Microsoft Excel spre-

¹<<https://github.com/ItaloDantas19/IndustriaCalcadista>>

Tabela 1 – Composition of the document corpus – *Abinforma Reports*

ID	Title	No. of pages	Quantity of words
202201	Number of franchises grows throughout Brazil	39	13.847
202202	Differentials qualify Brazilian footwear exports	32	11.575
202203	Women who develop the footwear sector	26	8.794
202204	Physical events boost exports	30	10.007
202205	Challenges of the footwear industry	34	12.910
202206	Footwear chain celebrates pact for sustainability	28	10.570
202207	Logistics is a challenge for the footwear sector	33	11.295
202208	The footwear industry has already generated more than 27 thousand jobs in 2022	29	11.487
202209	E-commerce represents more than 30% of shoes sold in Brazil	25	8.974
202211–12	What to expect from the Brazilian footwear industry in 2023	31	13.054
202301	The footwear industry is more cautious, but foresees growth	32	10.783
202302	Brazilian footwear show: the Brazilian footwear fair	31	10.797
202303	International actions increase footwear exports	34	14.543
202304	Four decades alongside the national footwear sector	25	8.536
202305	Footwear consumption is expected to increase by more than 3% in 2023	29	12.618
202306	Sustainability: a reality of no return for the footwear production chain	30	13.629
202307	Latin America produces more than 1.5 billion pairs of shoes	26	10.496
202308	Union of the footwear sector strengthens BFShow	23	7.387
202309	International scenario impacts on exports from the production chain	28	12.717
202310	Current scenario points to growth in the footwear industry	33	11.207
202311–12	First edition of BFShow mobilizes the national footwear sector	39	13.593
Total		637	238.819

Source: prepared by the authors based on research data.

adsheet. These themes were subsequently organized into categories and subcategories, structured into three overarching analytical axes reflecting the research objectives: trends, results, and challenges. This categorization supported a coherent qualitative analysis, enabling the identification of patterns and interconnections among themes.

In the initial phase of the investigation, all 21 reports were revisited, and each news item was categorized according to the identified themes and subthemes. Importantly, allowing the same news item to be assigned to multiple categories proved essential for capturing the multifaceted nature of the reports. This analytical flexibility enabled a more nuanced understanding of the data, revealing the complexity of the issues addressed and the interrelations among themes, thereby strengthening the depth and robustness of the analysis.

3.3 Background of study

In previous research, we identified three central themes characterizing the Brazilian footwear industry in the post-pandemic period: (1) exports, internationalization, and the domestic market; (2) cooperatives, associations, and business fairs; and (3) sustainable aspects. This study focuses on the third theme, which is defined by the following key concept:

- **Sustainable aspects:** encompasses content related to actions and initiatives undertaken by the Brazilian footwear industry in the field of sustainability, including the adoption of eco-efficient production practices, the use of ecological materials, reduction of environmental impacts, recycling and reuse programs, sustainability certifications, development of ecological products, investments in renewable energy, and environmental and social awareness initiatives promoted by companies in the sector.

In total, 339 news items were identified across the 21 Abinforma reports. These items were initially classified into the three main thematic categories described above and subsequently organized into the three analytical subcategories—trends, results, and challenges—as defined in the methodological procedures. Of the total corpus, 54 news items were specifically related to sustainable aspects of the footwear industry. The results relevant to the focus of this study are summarized in Table 2.

4 RESULTS AND DISCUSSIONS

Considering the analysis presented above, a total of 53 news items were identified as being related to sustainability within the Brazilian footwear industry (Figure 1). From this perspective, the identified trends reveal increasing awareness and the progressive adoption of sustainable practices, marked by the promotion of sustainability-oriented events and greater engagement across the sector.

The results indicate meaningful advances, including the achievement of sustainability-focused certifications, recognition at industry events, and proposals for the use of sustainable materials. Additionally, social

Tabela 2 – Frequency distribution of the *Abinforma* report categorization process

Year	Month	Trends	Results	Challenges
2022	Jan.	2	2	0
	Feb.	0	2	0
	Mar.	0	2	0
	Apr.	0	1	0
	May	0	2	1
	Jun.	1	0	1
	Jul.	3	2	0
	Aug.	2	3	0
	Sept.	0	0	0
	Nov./Dec.	1	2	0
2023	Jan.	1	1	0
	Feb.	2	1	0
	Mar.	1	1	0
	Apr.	0	3	0
	May	0	1	0
	Jun.	2	1	0
	Jul.	0	3	0
	Aug.	1	0	0
	Sept.	2	0	0
	Oct.	1	1	0
Total		21	30	2

Source: prepared by the authors based on research data.

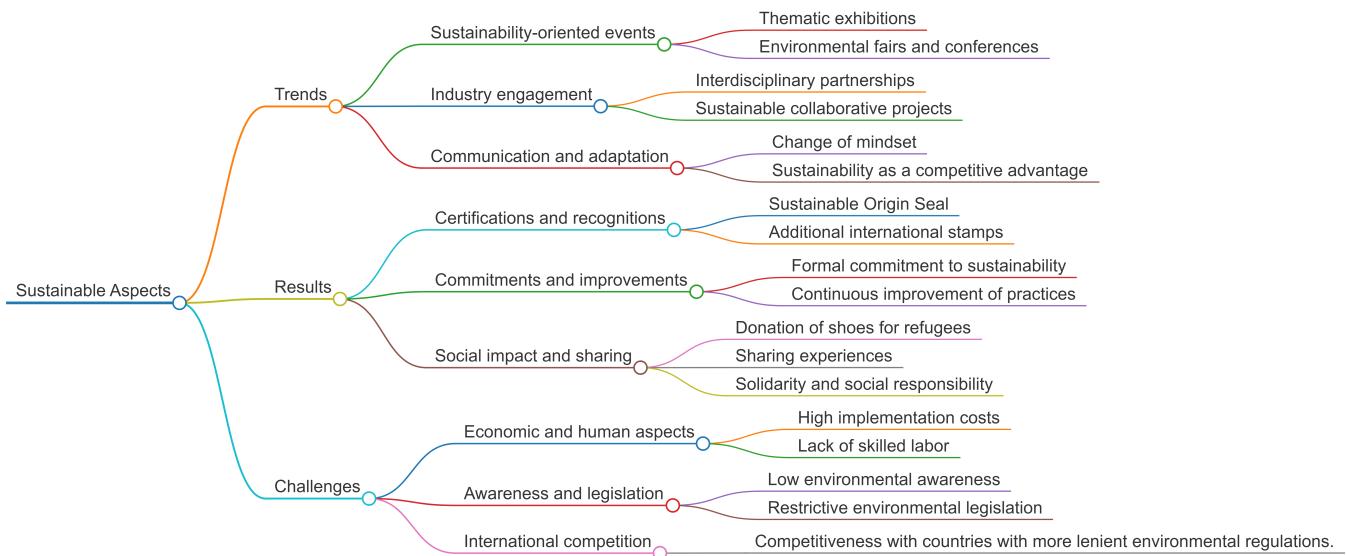
solidarity initiatives—such as shoe donation programs aimed at supporting refugees—emerged as relevant outcomes associated with sustainability-oriented actions in the sector.

Conversely, the challenges highlight significant barriers to sustainability implementation, including high adoption costs, a shortage of qualified labor, and limited awareness among industry actors. Further difficulties were also identified, such as competition with countries operating under less stringent environmental regulations and the complexity of existing legislative frameworks.

In the following subsections, we provide an in-depth discussion of each of these analytical categories—trends, results, and challenges—exploring their implications for sustainability in the Brazilian footwear industry.

4.1 Sustainability trends in the Brazilian footwear industry

The analysis of 21 reports published between 2022 and 2023 highlights 21 trends related to sustainability in the Brazilian footwear industry. These trends reflect a growing awareness of environmental challenges

Figura 1 – Results of item categorization for “sustainable aspects”

Source: prepared by the authors based on research data.

and the incorporation of sustainability as a strategic dimension of the sector (Feitosa; Sousa, 2013; Meyer; Froehlich, 2018; Pimenta; Périco; Sindelar, 2023).

First, we examine the role of trade fairs as vehicles for promoting sustainability (ABICALÇADOS, 2022g; ABICALÇADOS, 2022e; ABICALÇADOS, 2023f). Events such as FIMEC (International Fair for Leather, Chemical Products, Components, Machinery and Equipment for Footwear and Tanneries) (ABICALÇADOS, 2022g), InspiraMAIS (ABICALÇADOS, 2023f), and the CICB Sustainability Forum (ABICALÇADOS, 2023c) have played an important role in fostering discussion, knowledge exchange, and the dissemination of best practices. These initiatives have encouraged engagement among companies, institutions, and professionals, reinforcing the sector's commitment to sustainable practices.

FIMEC, for instance, integrated sustainability at the core of its programming, emphasizing solutions aimed at guiding the industry toward a more eco-responsible future (ABICALÇADOS, 2022g). One of the proposed interventions was the *Estúdio Fimec*, designed as a sensory experience enabling attendees to explore emerging trends in sustainable materials and technologies. This space showcased eco-friendly products from exhibitors and served as a forum for discussions on consumer behavior, supporting informed decision-making in the development of sustainable collections (ABICALÇADOS, 2022g). The initiative featured a diverse range of materials demonstrating innovation potential in eco-conscious production, fostering collaboration between manufacturers and designers committed to responsible practices (ABICALÇADOS, 2022g). The exhibition also highlighted natural materials sourced from artisanal communities—such as buriti fibers, cotton, and seeds—thereby promoting ethical production practices and supporting local economies (ABICALÇADOS, 2022g).

Similarly, InspiraMAIS advanced sustainability across environmental, economic, social, and cultural dimensions (ABICALÇADOS, 2023f). The event emphasized the need for industry-wide cultural change,

extending sustainability beyond environmental concerns to encompass social and economic factors. A key focus was the promotion of eco-responsible materials and production processes, particularly transparency and traceability within supply chains. According to Silvana Dilly, executive director of Assintecal, the event has accelerated the adoption of sustainable practices by convening suppliers, manufacturers, and designers around eco-friendly solutions (ABICALÇADOS, 2023f).

As reported by Abicalçados (ABICALÇADOS, 2023f), the 2023 edition of InspiraMAIS saw a significant increase in the number of sustainable products exhibited, reflecting rising international demand for such solutions. This shift toward sustainability has been driven by the need to comply with increasingly stringent global environmental standards, reinforcing the importance of events such as InspiraMAIS in shaping a more sustainable future for the fashion industry through the dissemination of materials and practices among producers (ABICALÇADOS, 2023f).

From the perspective of Porter and Kramer, collective efforts of this nature can generate shared value, whereby businesses address societal challenges through innovative strategies while simultaneously enhancing competitiveness (Kramer; Porter, 2011). This approach extends beyond traditional corporate social responsibility by embedding social and environmental objectives into core operations and long-term strategies (Park; Lee; Kim, 2023). Through initiatives such as trade fairs, companies can establish partnerships that drive economic growth while contributing to the resolution of broader social and environmental challenges (Brailly, 2016; Park; Lee; Kim, 2023). Such collaboration fosters sustainable business models that benefit companies, communities, and ecosystems alike, amplifying positive outcomes across multiple stakeholders (Brailly, 2016; Park; Lee; Kim, 2023).

Collaboration and partnerships have also emerged as drivers of sustainability in the Brazilian footwear industry (ABICALÇADOS, 2022e; ABICALÇADOS, 2022d). Projects developed by Sindifranca and ILSA Brasil for industrial waste management (ABICALÇADOS, 2022e; ABICALÇADOS, 2022d), as well as the Sinbi Charity Campaign (ABICALÇADOS, 2022d), illustrate concrete efforts to mitigate environmental impacts.

The collaboration between Sindifranca and ILSA Brasil exemplifies how industrial cooperation can address environmental challenges while enhancing sectoral performance (ABICALÇADOS, 2022e). ILSA Brasil has demonstrated the feasibility of converting leather industry waste into high-performance agricultural fertilizers, bridging industrial waste management and agricultural productivity (ABICALÇADOS, 2022e). This initiative responds to longstanding demands for sustainable waste solutions, formalized through a protocol of intentions to establish a processing unit in Franca (ABICALÇADOS, 2022e). The facility, expected to begin operations within 18 months, aims to manage leather waste streams while reducing environmental burdens and fostering regional economic opportunities (ABICALÇADOS, 2022e).

Collaborative efforts targeting social sustainability have also generated societal benefits. The *Lençóis do Bem* campaign, led by Sinbi and Acib, mobilized resources to support the Santa Casa hospital in Birigui by transforming donated fabrics into hospital linens (ABICALÇADOS, 2022d). This initiative exemplifies how industry associations can leverage networks to address community needs, integrating social welfare into industrial responsibility (ABICALÇADOS, 2022d). Such actions highlight the potential of partnerships to

catalyze systemic change and foster resilience and inclusivity within local ecosystems (Everard *et al.*, 2017; Kozar *et al.*, 2019).

These initiatives underscore the importance of organizational cooperation, which, as argued by Bonassi and Lisboa, can generate innovative solutions to complex problems (Bonassi; Lisboa, 2003). Outcomes such as waste reduction and structured environmental responsibility indicate that collaborative strategies are instrumental in advancing sustainability within the sector (Everard *et al.*, 2017; Kozar *et al.*, 2019).

Beyond collaboration, there is increasing integration of sustainability into operational strategies across the footwear industry (ABICALÇADOS, 2022d; ABICALÇADOS, 2023f; ABICALÇADOS, 2023c; ABICALÇADOS, 2023d). Campaigns such as *Sustainability in Practice* in Nova Serrana, the *Sustainability Rounds*, and exhibitions at InspiraMAIS demonstrate an industry-wide transition toward sustainable practices (ABICALÇADOS, 2022d; ABICALÇADOS, 2023f; ABICALÇADOS, 2023c; ABICALÇADOS, 2023d).

The *Encontro Sustentabilidade na Prática*, for example, promoted the adoption of sustainable materials during the 13th Febrac event in Nova Serrana, emphasizing environmental, social, economic, and cultural dimensions of sustainability (ABICALÇADOS, 2022d). The introduction of the *Origem Sustentável* certification—the only global ESG certification for footwear production—reinforced alignment with international standards (ABICALÇADOS, 2022d). Audited by external entities such as Senai and Bureau Veritas, the certification enhances competitiveness by appealing to environmentally and socially conscious consumers (ABICALÇADOS, 2022d).

Similarly, the 4th Sustainability Business Roundtables, organized by Assintecal in partnership with Abicalçados and CICB, strengthened connections between suppliers and buyers of sustainable materials (ABICALÇADOS, 2023d). By facilitating partnerships aligned with sustainability goals, the initiative supports the transition to eco-responsible production while meeting evolving consumer expectations (ABICALÇADOS, 2023d).

In this context, Nishimura, Gontijo, and Triska emphasize that industries adopting environmentally conscious approaches are better positioned to meet market and regulatory demands (Nishimura; Gontijo; Triska, 2023). This shift aligns with broader changes in consumer behavior and public policy prioritizing transparency and environmental stewardship (Gardner *et al.*, 2019; Esan; Ajayi; Olawale, 2024), enabling firms to remain competitive while fostering long-term growth (Sharma; Vredenburg, 1998).

Sustainability is increasingly viewed not merely as a compliance requirement but as an opportunity for competitiveness and differentiation (ABICALÇADOS, 2022g; ABICALÇADOS, 2023b). Research conducted by the Economist Intelligence Unit indicates a 71% increase in online searches for sustainable products across 54 countries, influencing global and emerging markets alike (ABICALÇADOS, 2022g). Initiatives such as *BrazilianFootwear.com*, promoted by Abicalçados and ApexBrasil, enhance the international visibility of sustainable Brazilian brands (ABICALÇADOS, 2022g).

Several companies exemplify this transition through innovative practices. Piccadilly has adopted an ESG-oriented strategy, producing animal-free footwear using recycled and eco-conscious materials (ABICALÇADOS, 2022g). Grendene offers 100% vegan and recyclable products, while brands such as Bibi and Boaonda incorporate atoxic materials, recycled waste, renewable energy, and reduced CO₂ emissions into their produc-

tion processes (ABICALÇADOS, 2022g). These examples reflect rising consumer demand and an industry-wide commitment to sustainable innovation (Feitosa; Sousa, 2013; Meyer; Froehlich, 2018; Pimenta; Périco; Sindelar, 2023).

Bennett argues that sustainability strengthens enterprise competitiveness by enhancing resilience and market positioning (Bennett, 1998). Sustainability has thus evolved into a strategic imperative driven by consumer demand for ethical practices and accountability (Evans; Welch; Swaffield, 2017; Tomşa; Romonți-maniu; Scridon, 2021). Firms increasingly leverage sustainability to differentiate brands, mitigate risks, and access new markets (Lloret, 2016; Ioannou; Serafeim, 2019).

According to a survey conducted by Abicalçados, 87% of Brazilian footwear companies adopt environmentally appropriate waste disposal practices, 73% control restricted substances, and 48% use renewable energy sources (ABICALÇADOS, 2023b). As highlighted by Schlindwein, the *Origem Sustentável* certification supports communication of these advances to national and international markets, enhancing sectoral image and competitiveness (ABICALÇADOS, 2023b).

Overall, this transition reflects a broader shift in corporate and consumer mindsets, in which environmental and social considerations are integral to business success rather than optional (Lloret, 2016; Evans; Welch; Swaffield, 2017; Tomşa; Romonți-maniu; Scridon, 2021). As evidenced in the reports, sustainability has become synonymous with innovation and progress (ABICALÇADOS, 2022g; ABICALÇADOS, 2023b), positioning proactive firms to thrive in an evolving market landscape (Lloret, 2016; Ioannou; Serafeim, 2019).

We conducted documentary research based on Abinforma reports published by Abicalçados, focusing on extracting information to understand the phenomenon (Kripka; Scheller; Bonotto, 2015). With this in mind, we concentrated on the textual and graphical materials contained in the reports, specifically the news presented each month.

4.2 Sustainability results in the Brazilian footwear industry

Further analysis of the 21 reports revealed 30 results related to sustainability in the Brazilian footwear industry, underscoring a growing commitment to environmental, social, and economic responsibility. Among the main achievements identified are the Diamond Seal from the *Origem Sustentável* program and other high-level certifications obtained by companies in the sector. This program stands out as one of the most prominent results highlighted in the reports, in which:

Origem Sustentável [Sustainable Origin] certifies companies in the sector with production processes based on the most important international sustainability references, aligned with the United Nations Sustainable Development Goals and the Global Reporting Initiative (ABICALÇADOS, 2022g, p. 21).

Accordingly, sustainability seals appear almost monthly in the reports, awarded to Brazilian footwear companies such as Usaflex (ABICALÇADOS, 2022g), Vulcabras (ABICALÇADOS, 2022c), Piccadilly (ABICALÇADOS, 2022b), Bebecê (ABICALÇADOS, 2022e), Via Marte (ABICALÇADOS, 2022d), Ramarim

(ABICALÇADOS, 2023f), Pampili (ABICALÇADOS, 2023h), and Lotus (ABICALÇADOS, 2023e). These certifications illustrate a formal commitment to sustainable practices and highlight the sector's pursuit of continuous improvement in environmental and social performance (Pimenta; Périco; Sindelar, 2023). As argued by Porter and Kramer and Lloret, embedding sustainability into corporate strategies enhances competitiveness by aligning business operations with stakeholder expectations (Kramer; Porter, 2011; Lloret, 2016).

Beyond symbolic recognition, these certifications play a strategic role in reshaping the competitive landscape of the Brazilian footwear industry (Pimenta; Périco; Sindelar, 2023). By obtaining and maintaining such distinctions, companies demonstrate their capacity to integrate sustainability into core business models, aligning with global trends and regulatory frameworks (Kramer; Porter, 2011). In this sense, sustainability certifications also contribute to value creation by strengthening corporate image and legitimacy (Bowers, 2010; Rahmi; Susanto; Muda, 2022).

Furthermore, the commitment to continuous improvement, evidenced by recurrent certifications, reflects a proactive approach that mitigates environmental risks while fostering innovation in product development and supply chain management (Gouda; Saranga, 2018). As highlighted by Lloret, such integration can create shared value, benefiting both companies and the communities in which they operate, while reinforcing consumer trust and brand loyalty (Lloret, 2016). This perspective is reinforced by Abicalçados, which states that:

In addition to sustainability being a market requirement, it can help competitiveness by reducing costs and organizing production processes (ABICALÇADOS, 2022h, p. 12).

This dynamic illustrates how sustainability has evolved from a peripheral concern to a central component of long-term business resilience and market differentiation in the footwear sector (Ciasullo; Cardinali; Cosimato, 2017; Mengistu; Panizzolo, 2021).

A second major result identified in the reports concerns the recognition of sustainable actions at national and international events (ABICALÇADOS, 2022f; ABICALÇADOS, 2022d; ABICALÇADOS, 2022h; ABICALÇADOS, 2023a). Participation in these events has reinforced the industry's role as a sustainability advocate. Discussions on female leadership at the International Footwear Forum (ABICALÇADOS, 2022f; ABICALÇADOS, 2023a), sustainability-focused debates at the Latin American Footwear Forum in Guatemala (ABICALÇADOS, 2022d), and sustainability-themed events in Franca and Jaú (ABICALÇADOS, 2022h) demonstrate the sector's engagement with social and environmental agendas.

At the Guatemalan Forum, Abicalçados emphasized the relevance of the *Origem Sustentável* certification, highlighting its alignment with human rights principles and its unique positioning in the international context (ABICALÇADOS, 2022d). The continuous dissemination of the certification at Brazilian events has supported companies in understanding performance metrics and adapting strategies to achieve sustainability standards (ABICALÇADOS, 2022d; ABICALÇADOS, 2022h). In Franca and Jaú, the discourse also sought to demystify sustainability as an exclusively environmental issue, emphasizing the integration of human rights, social, economic, and cultural dimensions (ABICALÇADOS, 2022h).

According to the literature, such events provide platforms for knowledge exchange and collaboration, corroborating Bennett's argument that collective engagement is essential for industries adapting to societal and market pressures (Bennett, 1998). These initiatives also amplify the visibility and credibility of sustainable practices, reinforcing the sector's market position (Brailly, 2016; Park; Lee; Kim, 2023).

Regarding female participation in the industry, this theme appeared predominantly in reports published in March, in connection with International Women's Day (ABICALÇADOS, 2022f; ABICALÇADOS, 2023b). These special editions highlight that women represent the largest consumer segment and approximately 50% of the workforce, yet occupy only 33% of leadership positions (ABICALÇADOS, 2022f; ABICALÇADOS, 2023b). Although the industry remains predominantly male, the reports indicate gradual change (ABICALÇADOS, 2022f).

Previous research shows that women account for approximately 49.3% of the workforce in the Vale do Sinos region (Santos, 2011) and 40% in Franca, São Paulo (Tomazini, 2003). However, they remain concentrated in lower-paid auxiliary roles, such as preparation, sewing, and finishing. These functions are often associated with stereotypically gendered attributes, reflecting historical constructions that continue to shape labor markets (Tomazini, 2003; Bennett, 1998). Despite their essential contributions, women face persistent barriers to upward mobility and leadership positions, compounded by precarious working conditions and wage inequality (Santos, 2011; Tomazini, 2003).

In addition, the industry has prioritized innovation in product development during the 2022–2023 period, emphasizing sustainable materials, manual techniques, and natural dyes (ABICALÇADOS, 2022c; ABICALÇADOS, 2023i; ABICALÇADOS, 2023g). These initiatives, presented at InspiraMAIS, reflect a growing portfolio of sustainable materials and demonstrate a shift toward environmentally responsible consumption while reinforcing the relevance of artisanal production techniques (ABICALÇADOS, 2022c; ABICALÇADOS, 2023i; ABICALÇADOS, 2023g). According to Kramer and Porter, innovations of this nature address sustainability challenges while generating competitive differentiation (Kramer; Porter, 2011).

Beyond production and innovation, social responsibility initiatives further demonstrate the sector's commitment to broader societal goals (ABICALÇADOS, 2022e). One notable example is the donation of 12,000 pairs of shoes to Ukrainian refugees, reported in July 2022 (Figure 2). As highlighted in the report:

People arrive with nothing, fleeing the horror of war. At this time of humanitarian crisis, all help is very important. We have the potential to help many people. Every contribution is very important, and a closer check may even reveal shoes retained in shipping, warehouses, or logistics processes (ABICALÇADOS, 2022e, p. 16).

As emphasized by Bennett, such actions enhance corporate reputation while addressing urgent social needs (Bennett, 1998). These initiatives reinforce the industry's legitimacy and its capacity to integrate sustainability with tangible social impact (Bonassi; Lisboa, 2003).

Finally, the launch of an international 10-episode series on sustainability in the Brazilian footwear industry underscores the strategic role of communication in promoting sustainable practices. As stated by Abicalçados, the initiative aims to position the Brazilian industry as a global sustainability leader (ABICALÇADOS,

Figura 2 – Shoe manufacturers sent 12 thousand pairs to Ukrainian refugees



Source: Abicalçados (ABICALÇADOS, 2022e).

2022g). By educating and engaging stakeholders, this effort fosters a shared understanding of sustainability's role in shaping the future of the industry (ABICALÇADOS, 2022g).

4.3 Sustainability challenges in the Brazilian footwear industry

Nevertheless, the analysis of the 21 reports published over the last two years identified two main challenges related to sustainability in the Brazilian footwear industry (ABICALÇADOS, 2022b; ABICALÇADOS, 2022a). The first major internal challenge concerns the high costs associated with implementing sustainability measures (ABICALÇADOS, 2022b; ABICALÇADOS, 2022a), which include investments in eco-friendly materials, advanced technologies, and employee training (ABICALÇADOS, 2022b). As noted in one of the reports:

Aiming to reduce the effects of increases in raw material costs, the company [Piccadilly] has been looking for smarter models, which use fewer materials and reduce waste, which is another of the brand's points of attention (ABICALÇADOS, 2022b, p. 8).

Such expenses can place significant pressure on the financial capacity of smaller enterprises, requiring careful strategic assessment of return on investment over time (Zhang; Wang, 2022). As suggested by Lloret, aligning financial strategies with sustainability goals demands innovative approaches to cost optimization while simultaneously enhancing environmental performance (Lloret, 2016). In this context, government support through financial incentives or targeted funding programs could help mitigate these barriers and foster more inclusive progress across the sector.

Another internal challenge highlighted in the reports is the shortage of a skilled workforce capable of implementing and managing sustainable practices effectively (ABICALÇADOS, 2022b). In the case of the footwear brand Luiza Barcelos, the report states:

Today our workforce is aging, the current generation no longer wants to work with shoes; they want technology. It is a great challenge to stimulate this generation, and we do this work internally with current employees (ABICALÇADOS, 2022b, p. 9).

In regions with limited access to qualified professionals, companies face difficulties in meeting technical and managerial demands, a challenge also emphasized in the reports addressing the Brazilian footwear industry (ABICALÇADOS, 2022b). This issue becomes particularly critical as sustainability is increasingly integrated into operational frameworks (Vona *et al.*, 2018; Zhang; Mei, 2020).

These findings underscore the importance of partnerships with educational institutions to develop tailored training programs. As emphasized by Pimenta, Périco, and Sindelar, collaboration between industry and academia can help address skill gaps and strengthen innovation capacity (Pimenta; Périco; Sindelar, 2023). Initiatives involving PG4 Galleria and the Suzana Santos Group, developed in partnership with SENAI (National Industrial Apprenticeship Service), illustrate efforts to expand technical training in the footwear sector, although the reports also reveal low adherence and unfilled vacancies in these programs (ABICALÇADOS, 2022b). Furthermore, targeted consumer awareness campaigns are essential to address limited market demand for sustainable products, corroborating Bennett's argument that consumer education plays a key role in encouraging the adoption of environmentally responsible products (Bennett, 1998).

From an external perspective, footwear manufacturers point to Brazil's complex environmental legislation as a persistent obstacle to the adoption of sustainable practices (ABICALÇADOS, 2022b; ABICALÇADOS, 2022a). According to the Pampili brand:

In addition to the macroeconomic issue of exchange rate fluctuations and increased costs, the footwear industry faces the internal challenge of improving productivity, establishing new sales channels, and implementing—and communicating—productive practices aligned with ESG concepts (ABICALÇADOS, 2022b, p. 10).

The bureaucratic nature of regulatory frameworks may discourage companies from pursuing certification processes or fully integrating compliance into their operations (Vigneau; Humphreys; Moon, 2015; Vona *et al.*, 2018). In this context, collaborative policymaking between public and private sectors could help simplify regulations and create a more enabling environment for sustainable initiatives (Caloffi *et al.*, 2017; Jiao *et al.*, 2023). As argued by Porter and Kramer, shared value emerges when businesses and governments align their interests to address societal needs through mutually beneficial policies (Kramer; Porter, 2011).

Additionally, competition with countries that maintain lower environmental standards represents a further challenge, placing Brazilian companies—operating under stricter regulatory and cost structures—at a competitive disadvantage (Féres; Reynaud, 2012; ABICALÇADOS, 2022b; ABICALÇADOS, 2022a). The undervaluation of sustainable products in global markets further exacerbates these difficulties (ABICALÇADOS, 2022b; ABICALÇADOS, 2022a; Camilleri *et al.*, 2023). Promoting recognition of the environmental and social efforts embedded in Brazilian footwear production could help differentiate these products and strengthen their competitive positioning (ABICALÇADOS, 2022a). As stated in one of the reports:

It has been ten years since we began the extensive awareness process observed today. The sustainable origin of our products is tracked using professional methods and criteria that effectively guarantee the origin of products and processes (ABICALÇADOS, 2022a, p. 13).

Public policies aimed at encouraging sustainable production and consumption—such as tax incentives and institutional marketing campaigns—are therefore essential for positioning Brazilian sustainable footwear as a global benchmark (Feitosa; Sousa, 2013; Meyer; Froehlich, 2018; Pimenta; Périco; Sindelar, 2023). In this regard, events such as *InspirarMais* (ABICALÇADOS, 2023f) and sustainability-focused forums (ABICALÇADOS, 2023c) play a crucial role in enhancing the visibility and legitimacy of these efforts, reinforcing sustainability as both a strategic and ethical dimension of the Brazilian footwear industry (Feitosa; Sousa, 2013; Meyer; Froehlich, 2018; Pimenta; Périco; Sindelar, 2023).

5 FINAL CONSIDERATIONS

The Brazilian footwear industry has existed for centuries, going through a process of craftsmanship, mechanization, exports, until reaching the wider adoption of sustainable practices. In this context, this study explored the trends, challenges, and results of sustainable practices within the Brazilian footwear industry during the post-pandemic period (2022–2023). Using qualitative thematic-categorical content analysis, the research identified key patterns and categories by analyzing reports from the Brazilian Footwear Industry Association (Abicalçados). This methodology allowed for a systematic understanding of sustainability efforts, focusing on operational advancements, industry trends, and persistent barriers.

Furthermore, the findings highlighted significant achievements, such as the growing adoption of eco-friendly materials, increased certifications, and recognition at national and international events. One of the main accomplishments is the Sustainable Origin certification – a globally recognized ESG standard for the footwear industry, aligning production processes with international sustainability benchmarks and UN Sustainable Development Goals. It ensures environmental responsibility, transparency, and social equity throughout the supply chain. Additionally, social responsibility initiatives, including donations and collaborative campaigns, underscored the industry's commitment to social sustainability. Despite these advancements, challenges related to implementation costs, skilled labor lacks, and regulatory complexities remain prominent.

From these results, it is evident that sustainability is no longer a tangential concern but an integral part of the Brazilian footwear industry's strategy. Companies are leveraging eco-conscious practices to enhance their market positioning and address global demands for transparency and accountability. This shift aligns with broader trends emphasizing innovation and ethical responsibility as drivers of competitiveness.

However, the study acknowledges its limitations, including the reliance on a single data source and the focus on reports, which might not capture the full diversity of sustainability practices across the industry. Future research could benefit from broader datasets and interviews with key stakeholders to enrich the analysis. In conclusion, the study successfully achieved its objective of mapping the sustainability landscape of the

Brazilian footwear industry. Nonetheless, further investigations are encouraged to explore emerging practices and develop strategies for overcoming persistent challenges, ensuring the continued evolution of sustainable practices in this sector.

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