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ESG CRITERIA AS DETERMINANTS OF SUSTAINABLE TRANSFORMATION OF SUPPLY CHAINS

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Purpose: The objective of the study is to identify the scope and impact of ESG criteria on the sustainable development of enterprises from the perspective of supply chains. The problem on which the study focused boils down to answering the questions: What features should characterize the strategy of an enterprise in the context of sustainable development?; What tools and activities are used by enterprises in their efforts to implement ESG criteria from the perspective of the supply chain?
Design/methodology/approach: The research methods and techniques used included, among others: content analysis, cause-effect analysis, selected methods of qualitative and quantitative analysis, which were used to present and discuss the results of the study.
Findings: In the search for methods for operationalizing the implementation of sustainable development assumptions in supply chains, a theoretical and conceptual framework for the development of supply chains based on ESG values was developed. Using the general assumptions of the models, the scope and impact of ESG criteria on shaping the business strategy of enterprises were determined, taking into account the dependencies in the supply chain.
Research limitations/implications: The study has some limitations. While it argues for the rationale for developing sustainable supply chains using selected qualitative analysis methods, it does not use quantitative analysis methods. The contribution to the research design indicates the need for more empirical research on the determinants of ESG disclosures and their implications from a supply chain perspective.
Practical implications: The implications for business representatives primarily concern presenting the essence of actions consistent with ESG criteria, benefits and challenges related to their implementation from the perspective of supply chain relationships and value creation.
Social implications: External stakeholders can gain knowledge about the level and nature of their impact (positive, negative) on the implementation of actions consistent with the sustainable development strategy.
Originality/value: What The models (theoretical and conceptual) of shaping a sustainable supply chain proposed in the article, in accordance with ESG values, may contribute to improving decision-making tools in the field of designing a multi-faceted enterprise development strategy.
Keywords: ESG, sustainable development, sustainable supply chain.
Category of the paper: research paper.

Introduction

The concept of sustainable transformation of supply chains is associated with the conditions of stable socio-economic development, in which the activities of enterprises significantly contribute to improving well-being, while maintaining the need to respect the principles of rational resource management (Garcia et al., 2017; Cosma et al., 2020). The common ground of the new paradigm of development of economic entities are therefore activities at the interface of the following dimensions: economic, social, environmental, spatial and legal-institutional. The basis of the analyzed concept is a systemic approach to the study of individual dimensions and the relationships between them. In Rogall's research (2010) emphasizes that each of the systems develops at a different pace, hence maintaining appropriate relationships between economic, social, environmental, spatial and legal-institutional development is a major challenge in shaping sustainable supply chains. The complexity of this problem is intensified by the multidimensional nature of supply chains very often operating within global supply networks (Laari et al., 2016).

The concept of "sustainable supply chain" appeared in scientific studies in the 1990s (Singh et al., 2022). In his research, van der Vorst, as one of the forerunners, emphasized the need to integrate aspects of sustainable development into supply chain management processes. This led to the formation of the concept of a sustainable supply chain. The first decades of the 21st century are a time when the idea of sustainable supply chains matures and gradually becomes an increasingly important element of business strategies. Given the increasing pressure from customers and investors, the need to care for the natural environment and build resilience to climate change and market turbulence, companies strive to effectively incorporate the postulates of sustainable development into their operations (Geels, 2020; Hsiao et al., 2022). The strategic goals of business activities are consistent with the implementation of the UN Agenda for Sustainable Development 2030 (2015). The document constitutes a new global program of action for sustainable development until 2030. The implementation of the 17 sustainable development goals in combination with the goals of the Paris Climate Agreement (Dz.U., 2017) and the European Green Deal (2019) requires the implementation of sustainable consumption and production patterns, efficient resource management in accordance with the assumptions of the circular economy, a transition to sustainable mobility models, the use of energy from renewable sources, as well as the implementation of low-emission and climate-resilient solutions.

The evolution of attitudes and social behaviors over the past three decades, as evidenced by the results of the Cotton Incorporated Lifestyle Monitor™ Survey (2024), challenges brands and retailers to deliver sustainable products and services. Businesses are connected by flows of materials, information, and capital to their supply chain partners and can be held accountable for the environmental and social performance of their suppliers. In order to implement sustainability initiatives, companies must expand their focus beyond internal operations to external supply chain partners and a wide range of stakeholders. This study fills the knowledge gap on the sustainable transformation of supply chains with ESG criteria, taking as a key approach to viewing sustainability not only as a concept, but primarily as a new, holistic approach to managing a business from a supply chain perspective.

The integration of sustainability into supply chain management and sustainability reporting are based on the ESG concept, which includes three pillars: environmental, social and corporate governance. ESG is a project concerning actions for the Global Value Chain with specific goals. The publication of ESG data is to ensure comparability and transparency of information provided by companies and to enable investors to make informed decisions about sustainable investments.

According to the adopted thesis, the implementation of ESG criteria should be prepared in accordance with the principles that determine their high effectiveness and usefulness in the context of sustainable transformation of supply chains. The aim of the study is to identify the scope and impact of ESG criteria on the sustainable development of enterprises from the perspective of supply chains. The problem on which the study was focused comes down to answering the questions:

- What features should characterize the company's strategy in the context of sustainable development?
- What tools and activities are used by enterprises in their efforts to implement ESG criteria from the perspective of the supply chain?

Implementing practices consistent with ESG values is a challenge, but it can bring numerous benefits to organizations. Entities are already seeing the potential associated with the transformation towards sustainable supply chains. The models (theoretical and conceptual) of shaping a sustainable supply chain in accordance with ESG values proposed in the article can contribute to improving decision-making tools in the field of designing a long-term development strategy for the company.

Methods

In order to achieve the adopted research objective and answer the formulated research questions, selected research methods and techniques were used. Descriptive analysis was used to define the subject of the study and identify the basic relationships within it. The method of analysis and criticism of literature proved useful for systematizing the current scientific achievements and the state of knowledge on the essence of ESG criteria and factors determining the sustainable development of supply chains.

The literature review was conducted in accordance with the classic approach, i.e.: selection of sources, keyword search, review and selection of articles, in-depth analysis of selected publications in relation to the subject of the study, taking into account, among others, the latest publications and the number of citations. The analyzed scientific articles are indexed in the databases: Scopus, Web of Science, Science Direct and Google Scholar.

The compact scientific publications, reports, expert opinions and scientific articles used in the study were published by renowned publishers and foreign and domestic institutions. The review of the subject literature allowed us to develop a theoretical framework for the development of a model of sustainable supply chains based on ESG values, taking into account the influence factors: external (outside-in perspective), internal (inside-out perspective) and related to both perspectives simultaneously.

The causal-effect analysis identified the implications of sustainability and ESG criteria for shaping the long-term competitive advantage of the company. Then, the requirements and challenges for companies related to the implementation of the EU Directive on Sustainability Reporting and Reporting Standards were identified. Using the analysis and logical construction as well as qualitative analysis, a conceptual framework for the development of a model of sustainable supply chains based on ESG values was developed. Its application requires taking into account many variables, due to the complexity of reporting on sustainability in accordance with applicable standards. Using the general assumptions of the theoretical model and the conceptual model, the scope and impact of ESG criteria on shaping the business strategy of companies were determined, taking into account the dependencies in the supply chain.

Results

For businesses around the world, shaping sustainable supply chains is now a major concern, with many organizations committing to achieving net zero emissions by 2050 (Deloitte, Institute of International Finance, 2023). Research shows that stakeholders are increasingly demanding that businesses become more sustainable and consider their social and environmental impacts (Turzo et al., 2022). Researchers generally agree that consumers are increasingly making purchasing decisions based not only on meeting their own needs but also on environmental considerations (Hope, 2017; Bali Swain, Yang-Wallentin, 2020).

Analyzing theories of economic decisions in relation to bounded rationality, Ekström et al. (2017) and Sonne Nørgaard (2018) confirmed that social and psychological aspects influence purchasing decisions and the level of consumer satisfaction. Generation Z is the most active in this respect. A study conducted by DoSomething Strategic (2022) shows that 76% of respondents from Generation Z have purchased or would consider purchasing a product or service from a company with a good social and environmental impact. At the same time, 94% of respondents from this generation believe that companies are responsible for solving critical environmental and social problems (Cone Communications, 2017). For Generation Y, this percentage was 87%.

Sustainable supply chain management is often defined as the environmentally friendly practices of a company, both internally and externally with supply chain partners (Zhu et al., 2013; De Giovanni, Esposito Vinzi, 2012). According to Yang et al. (2013), environmental initiatives are impossible to implement without the involvement of the supply chain function. As a result, sustainable supply chain management has become a widely discussed issue, combining elements of corporate environmental management and supply chain management (Yang et al., 2013). ESG criteria leading to value-based sustainable development are becoming a key management tool. The analysis of studies and reports on the aspects of sustainable development shows that effective supply chain management is becoming increasingly important for organizations and requires taking into account many factors (Figure 1).

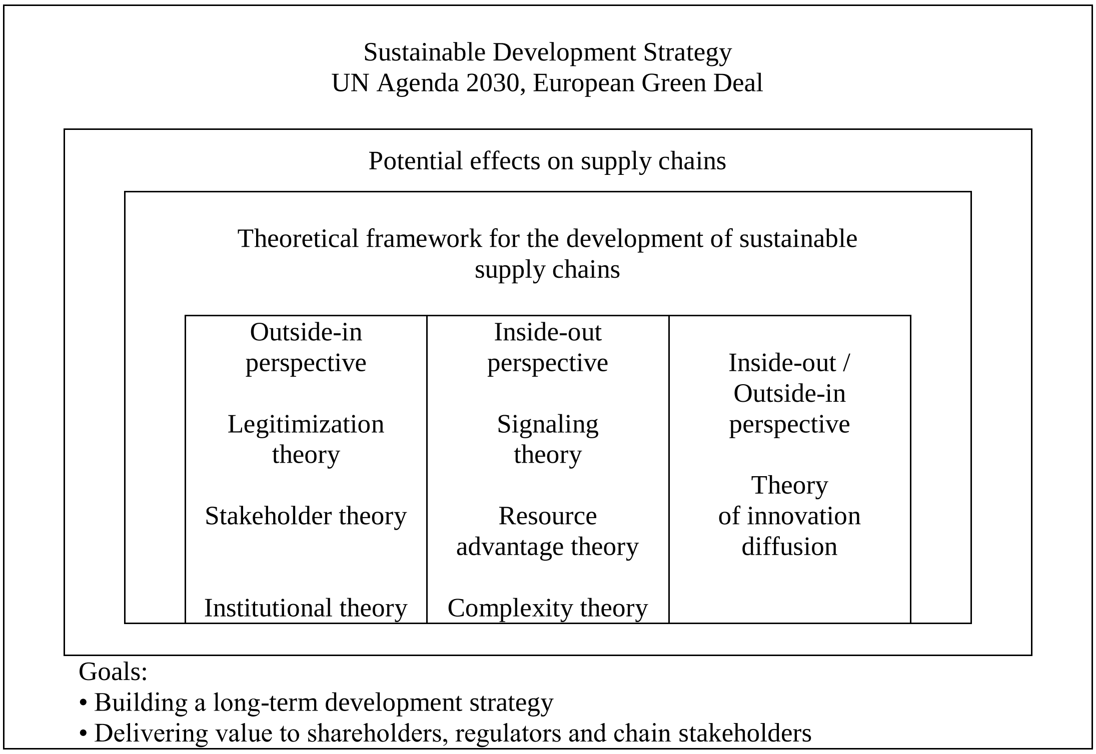

Figure 1. Theoretical Framework for the Development of Sustainable Supply Chains Based on ESG Values

Source: own elaboration based on (Ferreira-Quilice et al., 2023; Khanal et al., 2023).

The theoretical framework for developing sustainable supply chains based on ESG values takes into account external factors (outside-in perspective), internal factors (inside-out perspective), and both perspectives simultaneously. The outside-in perspective assumes that the source of sustainable corporate behavior is outside the company, meaning that they act sustainably in response to external pressures (Ferreira-Quilice et al., 2023; Singh et al., 2022). According to stakeholder theory, firms respond to the demands of their stakeholders in order to gain a competitive advantage and ensure their long-term survival in society (Johnstone, 2018).

This theory is an evolution of the legitimacy perspective, which takes into account the existence of a social contract between firms and society and the resulting expectations towards firms (Danisch, 2021). The response of firms to external pressures is also justified by institutional theory. According to Calabrese et al., (2022) and Johnstone (2018), institutions are socially constructed norms that become normalized as behavior to be imitated. The sustainability of supply chains also results from internal conditions and decision-making processes of the company (inside-out perspective). This perspective adopts the signaling theory, according to which companies send signals to stakeholders about the implementation of sustainable development assumptions, in line with ESG values (Papoutsi, Sodhi, 2020). The resource advantage theory focuses on the ability of companies to gain competitive advantage from valuable resources. According to the complexity theory, the development of sustainable supply chains is more difficult to achieve when the complexity of companies increases. The theory of diffusion of innovation also provides arguments in the field of supply chain development. Adopting the outside-in/inside-out perspective, it focuses on explaining why, how and with what frequency the implementation of new technologies, consistent with ESG values, takes place (Khanal et al., 2023).

Implementing a sustainable development strategy in supply chains, in line with ESG values, determines the appropriate basis for the business case. This strategy is to support building a long-term competitive advantage for the company and meet the growing requirements of both internal and external chain stakeholders.

The review of the literature on the subject shows that the concept of ESG can be analyzed from the perspective of a concept, concept, system, principle, pattern or model combining pillars, dimensions, aspects, factors of an environmental, social and governance nature (Calabrese et al., 2022; Ocicka et al., 2023). ESG as a concept representing the practices and effects of an enterprise's activities of an environmental and social nature comes from the world of finance. Its origins date back to the 1970s, when a small group of investors were interested in the practices of the companies in which they invested (Kaźmierczak, 2022). ESG is a concept according to which entrepreneurs should be guided not only by the pursuit of achieving maximum profit, but also by taking care of the natural environment "E", social responsibility "S" and corporate governance "G" (Table 1).

In the area of protection and counteracting degradation of the natural environment, the following activities were identified as important: assessment of criteria for the implementation of the environmental strategy and policy, environmental management, compliance with the principles of responsibility and care for the environment, and identification of the risk to business resulting from climate change. Issues of social responsibility and human rights include factors such as: relations with market participants (suppliers, customers, partners), working conditions and compliance with employee rights and occupational health and safety rules. Important aspects in this area also include the quality policy pursued both in relation to management procedures and product quality, as well as the company's information policy and its transparency. Within the third pillar "G", the analysis covers factors such as: the company's management structure, respect for shareholders' rights, respect for information obligations towards all shareholders, decision-making independence and management skills.

Table 1.
Foundations of the ESG concept

Environmental	Social	Corporate Governance
Environmental management strategy Environmental policy Principles of responsibility and care for the environment Energy consumption Pollution emissions Raw material supply Water management Renewable energy	Equal pay for the same positions regardless of gender Compliance with employee rights Security and data protection Quality policy Relations with participants in the value chain	Company supervision Company management structure Respecting information obligations towards all shareholders Respecting shareholders' rights Tax transparency Counteracting corruption and bribery

Source: own elaboration based on (Responsiblee, 2022).

Studies indicate that while the quality and level of corporate sustainability disclosure has improved, the substantive scope of progress remains limited (Bose, Khan, 2022; Silva, 2021). A content analysis of 100 sustainability reports conducted by Silva (2021) found that only 30 made general reference to ESG. Most of the reports lacked metrics to help stakeholders quantify corporate engagement. At the same time, research findings indicate that corporate sustainability contributions are unbalanced. Most corporate efforts have been focused on the economic and environmental aspects of sustainability (Mio et al., 2020). As noted by Khaled et al. (2021) and Pizzi et al. (2020), the social dimension of goals has received much less attention than other dimensions of development. The ability to track environmental, social and governance criteria is crucial for real, measurable improvements in sustainability at national and global levels (Danisch, 2021; Turzo et al., 2022). In their studies, Rosati and Faria (2019) found a positive relationship between the location of companies, national corporate responsibility and sustainability reporting. Furthermore, Calabrese et al. (2022) investigated the relationship between the income level of the country where companies are headquartered and their disclosure of ESG values in their sustainability reports, showing a positive relationship. At the same time, there are studies examining the relationship between companies' sustainability disclosure and greenwashing or tokenism (Mahmood, Uddin, 2021; Journeault et al., 2021).

Building trust in organizations in the ESG area by presenting concrete progress across the value chain and reporting is the basis for redefining the sustainability strategy (Figure 2). Implementing the assumptions of this strategy is to enable the achievement of long-term value for shareholders and a wider group of stakeholders, in accordance with the Corporate Sustainability Reporting Directive, CSRD (2022).

Regulations on ESG criteria

The concept of sustainable supply chain development

ESG criteria

Environment Social Governance

Traits	Actions	Tasks
Hardiness Inclusiveness Creating value Effectiveness Durability	Building a business strategy that takes into account the opportunities and risks associated with sustainable development Identifying and managing significant company/chain impacts on “E” and “S” Developing decision-making processes for managing ESG performance in conjunction with financial results Creating reliable data on sustainable development	Reporting Verification of the goals of the UN 2030 Agenda and the European Green Deal Comparability and transparency of information Building trust in ESG

Enterprise/Supply Chain Sustainability Reporting

Cross-sectional standards	
ESRS 1 General rules	ESRS 1 Mandatory indicators

Subject standards		
Environment: ESRS E1: Climate change ESRS E2: Pollution ESRS E3: Water and marine resources ESRS E4: Biodiversity and ecosystems ESRS E5: Resource use and the circular economy	Social: ESRS S1: Employment ESRS S2: Employees in the value chain ESRS S3: Social environment ESRS S4: Consumers and end-users	Governance: ESRS G1: Business Practices

Figure 2. Conceptual Framework for the Development of Sustainable Supply Chains Based on ESG Values

Source: own elaboration.

Materialising environmental, social and governance risks require companies to formalise their sustainable transformation efforts and integrate them into their business strategy, improve communication and increase transparency. The expectation is for consistent, comparable and transparent information on climate and other environmental, social and governance information. According to the directive, management must demonstrate how they have assessed the business opportunities and risks related to sustainability issues (including the company’s environmental and social impacts) as well as the potential impact on financial results.

Making business decisions based on sustainability considerations will require information on whether and how the company manages its sustainability performance and why certain actions have been taken.

In the ESG Reporting Guidelines (Krzysztofik et al., 2021), the concept of Environment, Social, Governance is equated with sustainability reporting, understood as the practice of measuring and disclosing accountability to internal and external stakeholders and presenting an entity's ability to achieve sustainable development goals and ways of managing impacts on society. Sustainability reporting is a key means by which the European Commission wants to verify the implementation of sustainable development goals. The publication of ESG data is intended to ensure the comparability and transparency of information provided by companies and to enable investors to make informed decisions about sustainable investments. The principles of disclosure are set out in the European Sustainability Reporting Standards, ESRS (2023).

The sustainability reporting standards consist of a set of cross-cutting standards (ESRS 1 and ESRS 2) and thematic standards in the area of environmental, social and corporate governance. A company will be required to report only those aspects of development, sustainability that are material to it. For this purpose, a dual materiality assessment must be carried out to check which issues are material to the company. However, the dual materiality assessment does not apply to the requirements resulting from ESRS 1 and ESRS 2. As cross-cutting standards, these standards are mandatory for all companies. In the case of the remaining thematic standards (environmental, social, business conduct), after assessing dual materiality, the company determines which elements it should disclose. Dual materiality has two dimensions: impact materiality and financial materiality. A sustainability issue meets the dual materiality criterion if it is impact material, financially material or both. A sustainability issue is impact material if it relates to a significant actual or potential, positive or negative impact of a company on people and the environment in the short, medium and long term. Importantly, a company should not only analyse its activities but also the entire value chain. Impact assessment should take into account:

- scale of impact (how serious the impact is),
- scope of impact (how widespread the impact is),
- irreversibility (whether and to what extent negative effects can be remedied),
- likelihood (in the case of potential impact).

A sustainability report prepared in accordance with the applicable ESRS standard will be subject to mandatory audit.

Discussion

Despite doubts about the disclosure of ESG ratings, researchers (García-Sánchez et al., 2020; Turzo et al., 2022) confirm that pressure from institutions, stakeholders and society is crucial to improving the implementation of sustainable development strategies. ESG ratings are considered indicators of companies' actual behavior in the context of sustainable development (Papoutsi, Sodhi, 2020). By integrating sustainable strategies in supply chains, companies can support the development of a sustainable economy, e.g. by developing products consistent with the goals of a resource-efficient economy or expanding their offer with products and services that protect against the materialization of climate risks. The introduction of practices consistent with ESG criteria will increase the pressure on such activities in relation to other participants in the chain with which the company cooperates. Currently eligible companies will be forced to report ESG indicators generated throughout their business cycle, both upstream and downstream. For companies that are already investing in collecting sustainability data today, this perspective can be a key competitive advantage in the future (Table 2).

Table 2.
Implementation of ESG values in supply chains

Effects	Activities	Challenges
Increased competitiveness	Investing in eco-friendly transport, eco-design	High costs of implementing innovations
Reduced risk related to operations, regulations and reputation	Implementing telematics systems to monitor fuel consumption and CO_2 emissions	Lack of appropriate infrastructure for sustainable logistics
Increased customer loyalty and brand trust	Fleet management systems and route optimization	Increased competition and customer expectations
Saving operating costs	Implementing ESG standards among suppliers and contractors, ESG audits at suppliers	Obtaining certificates
Improved profitability of enterprises	Increasing stakeholder involvement	Changes in legal and political regulations
Increased added value	Supporting local communities	Insufficient knowledge of stakeholders on ESG
Increased employee motivation	Ensuring decent working conditions and safety for employees throughout the supply chain	Building organizational and operational resilience

Source: own elaboration.

Sharing data and analyzing the company’s value in terms of ESG criteria is becoming important not only for transparency, but also for sustainable development and building solid business relationships within the supply chain. It is therefore important to:

- select the right suppliers who share the company’s values related to sustainability,
- build transparency to effectively recognize and address sustainability challenges,
- optimize resources to minimize waste and improve energy consumption,
- adopt environmentally friendly actions by using sustainable materials and embracing the circular economy.

Investors have come to believe that by applying ESG criteria, they can avoid companies whose practices may be a source of risk. The Sustainability Accounting Standards Board (SASB) has prepared for each industry issues related to sustainable development, divided into opportunities and risks that can have a significant impact on the company's assets and financial situation (SASB, 2021). These issues include: environment, social capital, human capital, business model and innovation, leadership and management. They are a source of comparisons of companies from a given industry in terms of the quality of their ESG policies. Using a risk assessment map related to individual ESG interest areas, prepared on the basis of SASB standards for the clothing industry, Alva Group experts assessed companies in this industry (Mazurowska, Płowska, 2022). The ESG Intelligence Fashion Retailers Q1 2021 report (Alva Group, 2021) included 19 entities in the ranking, assigning them points from +63 (Marks and Spencer) to -52 (Primark), thus clearly communicating the quality of their ESG policy. Marks and Spencer leads the Alva Group’s ESG Index for the fashion sector, with new sustainability standards for denim, safe dyes and 86% less water usage than the industry average. Adidas’ community integration and relationship building initiatives have earned it a 2nd place spot on the ESG Index.

Areas of particular improvement in the fashion industry include processes and oversight mechanisms to ensure the health and safety of supply chain workers, respect for human rights and decent working conditions, as also confirmed by Clarity AI research. The Key ESG Learnings and Best Practices in the Fashion Industry (Clarity AI, 2024) report uses a proprietary ESG risk assessment methodology to present the results of a four-year study that analyzed over 280 organizations. The aim was to identify companies that have made the most significant improvements in terms of sustainability and to provide recommendations on how to improve performance. SMCP SA (France) reported best practices in improving its ESG performance. These mainly concerned progress in environmental and social standards aimed at improving the health and safety of workers in its supply chain. SMCP implemented environmental criteria in the selection process of its suppliers and sourcing partners. By enforcing key supply chain standards, actively monitoring working conditions, and working with suppliers to address issues, the company is better positioned to protect long-term shareholder value. It also declared that it will include human rights criteria, including the prevention of forced labor, in the monitoring process of its suppliers and sourcing partners.

In Poland, the fashion industry has been appreciating LPP's activities for several years as one of the companies that best report on the implementation of the sustainable development strategy in accordance with ESG criteria. The 2023 sustainable development report prepared by LPP, taking into account the double materiality analysis, was the first step towards achieving compliance of the reporting process with the CSRD directive (LPP, 2024). The company is implementing a number of activities in the "E" area, including projects supporting the transition to a low-emission and circular economy. The positive assessment by the Science Based Targets initiative (SBTi) of the decarbonization goals adopted by the company has also set long-term plans for reducing the Group's greenhouse gas emissions. In the most challenging scope 3, by increasing the use of preferred raw materials with a lower carbon footprint, LPP reduced emissions per unit of purchased product resulting from the purchase of goods and services by 6.12%. In turn, in scopes 1 and 2, covering direct and indirect emissions related to the use of vehicles and own buildings, i.e. offices and warehouses, LPP committed to reducing emissions by 42% by 2030 compared to the base year of 2021. Actions aimed at achieving this goal are to include, among others, reducing the consumption of electricity and heat, decarbonizing the power grid, electrifying the car fleet and, above all, switching to renewable energy sources. In a situation where the company does not have the option of choosing so-called green energy, such as in its own brand stores, it focuses on monitoring and reducing its consumption. The popularization of the idea of the circular economy, including the "second clothing circulation" remains one of the key challenges, mainly due to the scale and costs of developing texile-to-textile recycling technology. An example of a partnership aimed at reducing the use of primary resources is the cooperation between LPP and the Polish start-up Use Waste, implemented since 2022. In the report, LPP also indicated its involvement in the implementation of projects from the "S" area. In 2023, in accordance with the OECD guidelines for multinational enterprises, the map of the most significant risks related to human rights and workers' rights was updated. A survey was conducted on risks, remedial and corrective actions in the field of human rights and workers' rights among suppliers in India, Pakistan and Bangladesh.

Summary

The study identified the factors that determine the sustainable development of supply chains. The scope and impact of ESG criteria on shaping the business strategy of companies, taking into account the relationships in the supply chain, were determined. Our findings show that there is a tendency to undertake activities in supply chains consistent with ESG criteria, which not only contribute to the implementation of sustainable development goals, but also create clear financial value. The analysis of the content of corporate reports confirms that companies prioritize environmental issues, including reducing CO_2 emissions. Companies operating in the supply chains of environmentally sensitive industries, such as fashion, are striving to improve their actual sustainability performance and reporting. Despite efforts to improve these conditions, the complex web of suppliers, subcontractors and workers in the fashion industry poses challenges. Key issues include worker health and safety, fair wages and the prevention of child and forced labour. Furthermore, because the industry tends to source from lower-cost countries, production often takes place in regions with lax labour regulations and enforcement. This creates reputational risks and can lead to increased scrutiny and costs, including regulatory fines and supply chain disruptions. In conclusion, the study showed the need to adopt and prioritize sustainable practices throughout the supply chain, deepen cooperation with stakeholders and align business strategy with ESG criteria.

The presented results of the study contribute to the further development of scientific research and provide several practical implications.

In terms of designing further directions of scientific research on sustainable development, the research implications concern issues related to sustainability reporting, taking into account the value chain. The contribution to the research design also indicates the need to expand empirical research on the factors determining the disclosure of information consistent with ESG criteria and their consequences from the perspective of the supply chain.

The results have several practical implications for various stakeholders. First, given the importance of the topic of sustainable development and the obligation to report both upstream and downstream of the supply chain, policymakers and national regulators should encourage companies to take steps to integrate sustainable development into their business strategy. Second, external stakeholders can gain knowledge about the level and nature of their impact (positive, negative) on the implementation of activities consistent with the sustainable development strategy. The implications for business representatives primarily concern the presentation of the essence of activities consistent with ESG criteria, the benefits and challenges related to their implementation from the perspective of supply chain relationships and value creation.

Despite its theoretical and practical implications, this study has some limitations. While it argues for the validity of actions to develop sustainable supply chains using selected qualitative analysis methods, it does not use quantitative analysis methods. This is primarily due to the limitations in obtaining consistent data for companies, taking into account both upstream and downstream relationships. At the same time, it may pose a challenge for future research due to the obligation to report on sustainability based on accepted standards.

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