MAPPING ESG RISKS IN THE POLISH LOGISTICS: A CAUSAL LAYERED ANALYSIS AND FORESIGHT PERSPECTIVE

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Purpose: This paper examines the barriers, risks, and strategic directions of ESG (Environmental, Social and Governance) implementation in Poland's logistics sector. It aims to identify institutional and cultural constraints, map ESG risks, and develop future scenarios.

Design/methodology/approach: The research is based on a qualitative, exploratory approach combining Causal Layered Analysis (CLA) and strategic foresight. It integrates literature review, secondary data analysis, and scenario development, grounded in institutional theory, risk management, and sustainability transitions.

Findings: ESG implementation is hindered by systemic, regulatory, cultural, and narrative barriers. Often seen as a formal burden, ESG lacks strategic integration. Three scenarios are developed, with "bottom-up leadership" proving the most resilient. A risk map shows ESG-related risks vary by approach.

Research limitations/implications: Reliance on secondary data limits generalizability. Future research should include stakeholder interviews and cross-country comparisons within the EU.

Practical implications: Logistics firms must shift from compliance to strategic ESG integration. Public support should address organizational culture and SME capacity.

Social implications: The paper redefines the social role of logistics in sustainability transitions, creating broader, value-based ESG narratives.

Originality/value: It is the first to apply CLA in analyzing ESG in logistics, giving a multi-perspective view of strategic risks and cultural challenges. It provides pragmatic insights for policymakers, researchers, and practitioners.

Keywords: ESG, logistics sector, Causal Layered Analysis, sustainability transitions.

Category of the paper: Research paper.

1. Introduction

The role and importance of sustainable development activities have grown in recent years. It is visible in EU regulations and the growing social expectations towards companies. The ESG (Environmental, Social and Governance) concept is becoming a key point of business

strategies and a tool for assessing risks related to the economy (Guo et al., 2024). Implementing ESG standards serves companies not only to limit the negative impact on the environment or society but also to build long-term value and competitive priority (Annesi et al., 2025).

The literature on the subject encounters various approaches to ESG. The compliance approach treats ESG as an obligation to meet regulatory requirements - mainly reporting and compliance with standards (Cremers et al., 2021; Christensen et al., 2022). The strategic approach focuses on integrating ESG with the core of the business model, seeing it as a source of innovation, efficiency and value for stakeholders. Based on values and identity, the third approach sees ESG as an element of the company's mission and social responsibility. The clash of these approaches in economic reality and their coexistence in managerial narratives causes tensions and risks requiring deeper analysis (Corsalini, 2023).

The logistics sector plays a core part in the economy and global supply chains and in shaping climate and social goals. The Polish logistics is fragmented and dominated by SMEs, which impedes ESG adoption due to insufficient knowledge, tools, and capital. ESG is generally viewed as an impediment tagged along with large companies (Sun et al., 2022; Zils et al., 2023).

With all the growing scholarly focus, sector-level ESG studies—especially within logistics—continue to be rare and are susceptible to overlooking deeper cultural and narrative dimensions. This article employs causally layered analysis (CLA) and foresight methodology to explore ESG issues and propose three 2030 development scenarios.

The aim of the paper is as follows: (1) to show the barriers limiting the implementation of ESG in logistics, (2) to provide three available future scenarios, and (3) to assess the strategic risks that may come from each of them. The main question is: How can we understand and reduce ESG risks in logistics by examining deep cultural, institutional, and narrative factors?

The text is a proposal for an interdisciplinary approach to the place of sustainable development in sectoral implementation. It combines institutional economics, strategic management, sustainable finance, and cultural analysis.

2. Theoretical framework

ESG is an acronym for three English terms: environmental, social, and governance. They are acronyms for ecological, social, and corporate governance issues. ESG describes how companies quantify and control their externalities on the natural world, social relations and internal governance rules (Adomako, Tran, 2022; Christensen et al., 2022).

Environmental factors include, among others, greenhouse gas emissions, energy consumption and waste management (Friede et al., 2015; Kong et al., 2014). Social aspects include, among others, human rights respect, working conditions and relations with the local community (Eccles et al., 2014; Ali et al., 2020). Conversely, corporate governance issues like

transparency of decisions, board composition and moral conduct (Khan et al., 2016). ESG indicators help stakeholders and investors decide whether or not a firm does business sustainably and responsibly, which affects its financial condition and image.

Theoretically, ESG is determined not only by economic rationality or internal capacity but also by institutional environments. Drawing on institutional theory (DiMaggio, Powell, 1983), ESG uptake can be understood as a response to three types of pressure: coercive (e.g., EU legislative action such as the CSRD), mimetic (imitating industry leaders) and normative (civil society and stakeholder expectations). Coercive powers generally result in shallow or symbolic ESG practices in the disintegrative logistics sector.

Contemporary views of ESG in economic and management theory are increasingly concentrated on its strategic importance for value creation, organizational resilience, and risk management (Kaplan, Mikes, 2012; Leoni, 2025). ESG is an element of regulatory compliance and an element of corporate strategy. Considering ESG goals is particularly worthwhile in industries with substantial adverse impacts on the natural environment and of high value for the socio-economic development of countries (Almnadheh et al., 2025). Institutionally, ESG application can be described in terms of three types of pressure mentioned by DiMaggio and Powell (1983): coercive pressure (legislative demands, i.e. CSRD), mimetic pressure (copying market leaders) and normative pressure (stakeholder pressure).

The logistics sector is vital for socio-economic development and its harmful impact on the natural world. Green and organizational work regulations within this sector in the EU introduce tensions between formal compliance and actual operational change. Particular attention should be paid to the complexity of supply chains and their impact on ESG practice implementation. As Ahi and Searcy (2015) suggest, the lack of standard measurement and measurement instruments complicates the control of sustainable supply chains. For logistics, these are added by market fragmentation, the abundance of SMEs, and reduced operation visibility (Evangelista et al., 2018).

These organizational dynamics reinforce the gap between nominal ESG compliance and meaningful sustainability transformation. Strategic ESG integration is undermined by internal legitimacy deficit and perceived incoherence with business objectives, especially for SMEs.

The literature documents that the size of the logistics industry and the vast percentage of micro and small firms affect the implications of ESG implementation by businesses. Martinsen and Huge-Brodin (2014) illustrated that larger logistics firms are more likely to implement sustainable measures and ESG reporting. SMEs are likely to limit themselves to meeting the bare minimum formal requirements. This means that ESG transformation in the logistics sector is asymmetric and heterogeneous.

Qualitative and multi-faceted approaches help balance the complexity of adaptation conditions to the changing socio-economic climate with environmental protection conditions in mind. While SWOT or PEST primarily focus on surface drivers, Causal Layered Analysis (CLA) offers a richer method for addressing systemic complexity, resistance to change,

and visionary thinking. CLA has been applied successfully in foresight analysis and sustainable policy planning (Slaughter, 2004), gaining insights into buried cultural stories that keep change at bay.

Causal Layered Analysis (CLA) by Inayatullah (1998) allows ESG issues to be examined on four levels: litany (facts and figures), systemic (processes and structures), worldview (values and beliefs), and mythological (cultural metaphors and deep narratives). The approach allows recognition of the current state and provides directions for change by influencing organizational culture and industry identity.

Applying CLA to the analysis of ESG in logistics allows a better comprehension of why implementing sustainable practices is ostensible or superficial despite growing regulations and expectations. The application of CLA combined with foresight analysis enables the determination of obstacles and the proposal of realistic development scenarios, which is essential from the strategic management point of view and policy design in the sector's interests.

By integrating institutional schools, risk management, supply chain research and narrative methodologies, I aim to develop a theory structure that allows for extensive study of how ESG in logistics is both an external-driven response and, in fact, the transformative potential for an entire industry.

The conceptual framework proposed in this study synthesizes three layers of analysis: Institutional Pressures (external ESG drivers shaping organizational response), Strategic Risk Mapping (ESG-related risks arising from shallow vs. deep implementation), Narrative and Cultural Layers (deep-rooted beliefs influencing sectoral transformation).

This coupled framework allows a structured understanding of how external pressures, strategic risks, and embedded cultural stories converge in influencing ESG pathways within logistics (Figure 1).
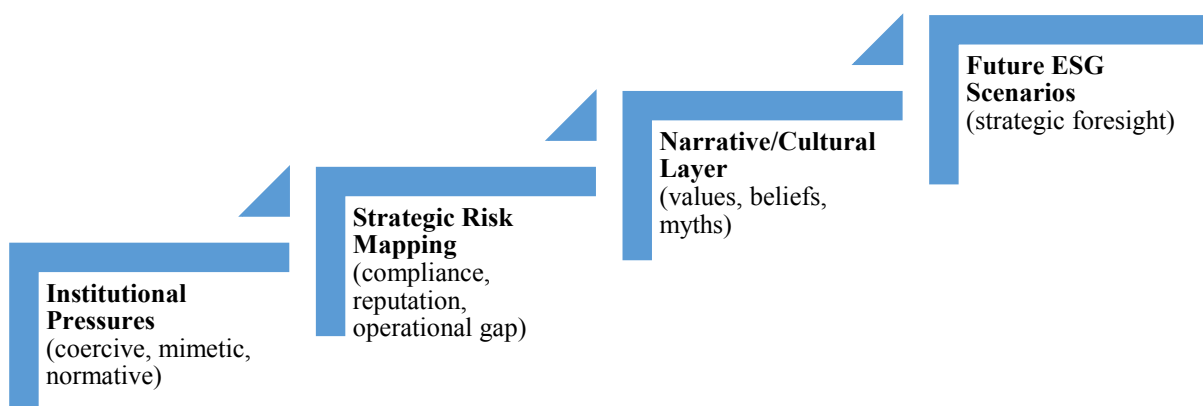

Figure 1. Theoretical framework for ESG integration in the logistics sector using CLA.

Source: own elaboration based on Inayatullah (1998), DiMaggio (1983), Kaplan, Mikes (2012).

3. Methodology and Research Design

This research is qualitative, conceptual and exploratory. It is not aimed at quantitative hypothesis testing but at developing a rich scenario and contextual analysis for the Polish logistics sector.

The research's primary purpose is to perform a multi-level analysis of the conditions and barriers to using ESG strategies in the logistics sector in Poland using the Causal Layered Analysis (CLA) tool and foresight approach. The purpose is also to identify potential ESG development paths up to 2030 and analyze the strategic risks related to each. In particular, the study seeks to:

- Identify key barriers and enablers to ESG implementation in logistics.
- Examine how different levels of analysis (litanic, systemic, ideological, mythological) affect the perception and use of ESG in the sector.
- Develop plausible scenarios of ESG evolution until 2030 and comment on their consequences for the sector's strategy.
- Strategic risk assessment for each scenario for key ESG fields.

Research questions:

- On what grounds and why will ESG implementation continue to be superficial for most logistics players?
- What are the prevailing stories and perceptions among logistics players regarding ESG?
- Which paths will likely be followed by ESG strategy development within logistics based on a 2030 vision?
- What strategic risks are associated with each option for ESG implementation?

The study employed a foresight approach and the Causal Layered Analysis (CLA) methodology, by which it is conceivable to analyze socio-economic problems from the perspective of different cognitive depths: data, structures, worldviews and narratives. CLA allows for examining discernible systemic circumstances (institutions and policies, for example) and less transparent cultural, linguistic, and evaluative aspects.

Sources of data chosen: Secondary analysis of data (desk research) was used, including:

- ESG and sustainable development reports of some of the chosen logistics operators (e.g. InPost, DB Schenker, Raben).
- EU and national institution documents (e.g. SFDR, CSRD, Fit for 55, GOZ strategies).
- Scientific literature on the topic of logistics, ESG, foresight and risk management.
- Expert and industry analyses (including Transport Intelligence, PwC, Deloitte, and E&Y reports).

Phases of the study:

- Identification of the most critical ESG issues in logistics based on the literature and industry research.
- Construction of a four-stage CLA analysis – for ESG challenges and barriers in the industry.
- Development of three alternative scenarios of ESG evolution until 2030: regulated change, bottom-up leadership and surface-level adaptation.
- Comparison of strategic risk maps for each scenario – into reputational, operational, regulatory, supply chain and innovation risk.

The adopted method allows for considering both formal and hidden (cultural, systemic, narrative) determinants that influence the adoption of ESG. Foresight with CLA can capture current obstacles and future avenues of change.

The paper is interdisciplinary – it combines economic, institutional, and foresight approaches, making it possible to comprehend better the problem of sustainable development in the logistics sector.

4. Research results

Table 1 summarizes barriers to ESG implementation in Polish logistics using Causal Layered Analysis (CLA). On the litany level, surface-level media stories and technical problems dominate, such as a lack of ESG reports, considering sustainable activities costly and unprofitable, especially for SMEs, and EU regulatory pressure.

At the system level, institutional deficiencies are evident – no money, ESG professionals and individual training programs. The industry, dominated by SMEs, treats ESG as a challenge and not a possibility.

On the worldview level, there is a deeply ingrained sense that ESG is a means "for the big guys" and that it does not correspond to the national reality. There is a short-term view, and ESG is not integrated with the companies' mission.

At the mythological level, deep cultural narratives play – logistics is only transport and marginally contributing to the environment. Entrepreneurs see themselves as solo "warriors" rather than responsible actors of change, which makes it difficult to identify with the notion of ESG.

Table 1.
CLA of ESG Implementation Challenges in Logistics Sector in Poland

CLA Layer	Analytical Level Description	Key ESG Challenges in Logistics	Interpretation and Deeper Meaning	Transformative Recommendations
1. Litany (Facts, data, dominant media narratives)	The visible level of discourse: facts, statistics, media headlines, public debates.	• Only a minority of logistics companies in Poland publish ESG reports • Lack of coherent ESG benchmarks tailored to the logistics sector • Dominant narratives: "Green technologies are unavailable", "SMEs cannot afford ESG", "More bureaucratic burdens"	These are surface-level symptoms of deeper systemic and cultural barriers. ESG is often perceived in a technical rather than strategic manner.	• Develop public ESG knowledge repositories for the TSL sector • Create sector-specific ESG guidelines (e.g., aligned with ESRS) • Disseminate best practices through industry and national media
2. Systemic (Institutional, regulatory, and market structures)	The institutional and financial environment that shapes firms' operational capacity and decision-making.	• Lack of dedicated support programs for ESG implementation in logistics (e.g., tax incentives, green fleet subsidies) • Insufficient number of ESG professionals (e.g., compliance officers, analysts) • Misalignment of vocational and managerial education with ESG needs • Prevalence of SMEs with limited implementation capacity	The system does not facilitate ESG advancement. ESG is treated as a compliance burden rather than a source of competitive advantage.	• Introduce fiscal incentives and public grants • Establish ESG competence centers (e.g., under logistics chambers) • Launch micro-grant schemes for ESG in SMEs • Embed ESG in logistics education and professional training
3. Worldview (Beliefs, cultural values, business logic)	The values and ideologies that shape strategic choices and management mindsets.	• ESG is perceived as an external imposition rather than a development opportunity • Belief that sustainability is only relevant for large enterprises or public actors • Low trust in institutions and regulatory bodies • Strong orientation toward short-term financial performance	The sector operates according to cost-efficiency logic and reactive compliance. ESG is not integrated into strategic management.	• Reframe ESG as a value-generating opportunity • Promote values-based leadership in logistics firms • Link ESG to KPIs and core business strategies • Educate on long-term risk reduction and stakeholder value
4. Mythic (Deep cultural narratives and identity archetypes)	The deepest level: subconscious narratives, metaphors, and archetypes that shape sectoral identity.	• "Logistics is just transport – it does not affect the environment" • "An entrepreneur is a fighter – success comes from cost-cutting, not sustainability" • "ESG is an EU-imposed agenda – not our priority" • "Poland lacks the conditions to implement ESG effectively"	These narratives foster a sense of disempowerment and disconnect from the sustainability agenda. ESG is not part of the sector's identity.	• Build new narratives: "Logistics as the backbone of the green economy" • Showcase local ESG champions among SMEs • Conduct campaigns to reshape entrepreneurial archetypes • Incorporate ESG into sectoral culture and professional ethics

Source: own elaboration.

CLA use has shown that ESG issues in the logistics sector are not technical or regulatory but deeply ingrained, cultural, ideological and narrative-based. Effective ESG transformation thus requires multi-level action – not just regulatory and cost adjustments, but adjustments of mind, values and social narratives about the contribution of logistics to economic transformation.

Table 2 presents three possible development paths for ESG in Polish logistics by 2030: Regulated transformation, green grassroots leadership, and apparent adaptation. Each one has been examined using the CLA methodology, enabling understanding not only drivers from the outside world but also underlying stories and assumptions shaping the strategy towards ESG.

Scenario 1: Regulated transformation. ESG is introduced mainly due to EU regulations, not out of conviction. Companies are in reaction, often treating ESG as an obligation, not a strategy. The most significant risk is a formative implementation without fundamental changes, threatening greenwashing and exclusion of SMEs. Not only is the law necessary, but it also supports companies in its implementation.

Scenario 2: Green Grassroots Leadership. ESG is becoming part of companies' identity and strategy. Changes are taking place at all levels - from data to values. Companies, including SMEs, treat ESG as a way to build relationships, reputation and innovation. This scenario shows the most significant potential but requires promoting good practices and supporting change leaders.

Scenario 3: Apparent adaptation. ESG is limited to reporting "on paper". There are no fundamental changes, and ESG is perceived as unnecessary bureaucracy. Such a model will result in lost trust and the risk of exclusion from European supply chains. The most important educational activities and improvement of reporting quality are resumed here.

Table 2.
Future ESG Scenarios in the Polish Logistics Sector by 2030 – CLA and Strategic Foresight Approach

Scenario	Description	Connection with CLA Layers	Opportunities / Risks	Strategic Implications
Regulated Transformation	ESG is implemented primarily under pressure from EU and national regulations. Companies comply formally, focusing on legal conformity.	• Litany: increasing number of ESG reports • Systemic: emergence of subsidies, public support, and standards • Worldview: ESG seen as cost and obligation • Mythic: continued narrative of external enforcement	Opportunities: regulatory compliance, standardization Risks: superficial implementation, SME exclusion, greenwashing	Financial and educational support for SMEs is essential. ESG must be reframed as a source of value, not only compliance.

Cont. table 2.

Grassroots Green Leadership	Transformation is driven by proactive SMEs and industry leaders integrating ESG with values and strategy.	• Litany: new ESG indicators, grassroots benchmarks • Systemic: sectoral self-regulation and collaboration • Worldview: ESG as opportunity and innovation • Mythic: redefined entrepreneurial archetype as a change leader	Opportunities: cultural shift, innovation, enhanced reputation Risks: limited scalability without systemic support	Support grassroots ESG leaders and storytelling. Enable networks of good practices and partnerships.
Superficial Adaptation	ESG is formally adopted but lacks real operational changes. Focus is on reporting and penalty avoidance.	• Litany: increased reporting, poor data quality • Systemic: no structural reform • Worldview: ESG as bureaucracy • Mythic: reinforced belief that logistics has no real impact	Opportunities: minimal, primarily reputational Risks: credibility loss, stagnation, marginalization in EU	Monitoring and education are needed. There is a risk of "dead ESG" that undermines transformation.

Source: own elaboration.

Synthetic cross-sectional conclusions:

- Full ESG transformation will not happen without changing deep cultural and narrative layers – even the best regulations will not transform the sector if ESG does not become part of its identity.
- The "green leadership" scenario is the best of possible scenarios, but it involves active support of change leaders, especially SMEs – through mentoring, networks and narrative campaigns.
- The biggest threat is not the lack of ESG implementation but its superficiality – formal actions without depth increase the reputational and operational risk of the sector.
- The integrated CLA + foresight approach provides good insight to public decision-makers, business and academia, allowing for better development intervention planning.

The three foresight scenarios were constructed following a structured Causal Layered Analysis (CLA). The link to CLA layers—litany, systemic, worldview, and mythic—is made explicit in the third column of Table 2. By this, the methodology enables us to examine how visible deeper institutional foundations, management logic, and cultural accounts shape ESG behaviours (e.g., disclosure). For example, in the "Superficial Adaptation" scenario, high-level reporting (litany) accompanies the absence of structural change (systemic), a worldview that ESG is bureaucracy, and firmly rooted myths that logistics does not concern itself with the environment (mythic). The reverse scenario, though, under "Green Grassroots Leadership", illustrates changes in all the CLA levels, suggesting that successful ESG change must address, at least, policy, belief, identity, and values.

The analysis of ESG risks in three foresight scenarios – Regulated transformation, Green leadership from below and Apparent adaptation – shows different risk profiles and potential for the sector's resilience to the challenges of implementing sustainable development (Table 3).

Reputational risk is most evident in the Apparent adaptation scenario, where companies limiting themselves to ESG declarations expose themselves to accusations of greenwashing and loss of trust from partners. The lack of real action may result in exclusion from business relations.

Operational risk is the lowest in the Green leadership scenario, where ESG is integrated with the strategy. In other cases, the lack of coherence and implementation leads to gaps in governance, environmental safety and operational resilience.

The Regulated transformation scenario best mitigates regulatory risk, although it may not meet market expectations. Companies in the Apparent adaptation scenario are most exposed to sanctions and exclusion from regulated markets.

The risk of exclusion from EU supply chains is particularly high in the Apparent adaptation scenario. The requirements for transparency, carbon footprint and risk management no longer apply to leaders but to smaller subcontractors.

Strategic (innovation) risk is limited only by companies operating by the Green Leadership scenario. The rest treat ESG as a cost, losing the opportunity to develop innovative business models and competitive advantage.

Table 3.
A comparative risk analysis for three foresight-based ESG implementation scenarios

Risk Domain	Regulated Transformation	Grassroots Green Leadership	Superficial Adaptation	Strategic Comments
Reputational Risk	Low (compliance-based trust)	Low (values-driven, credible)	High (risk of greenwashing and distrust)	Superficial adaptation leads to loss of stakeholder confidence and brand damage.
Operational Risk	Medium (costly, reactive adaptation)	Low (integrated into operations)	High (inefficient ESG integration)	Only the leadership scenario aligns ESG with core logistics operations.
Regulatory Risk	Low (meets formal standards)	Medium (voluntary standards may lag behind)	High (non-compliance or symbolic compliance)	Scenario 3 exposes firms to legal sanctions or future exclusion.
Supply Chain Exclusion Risk (EU)	Medium (compliance, but no innovation)	Low (preferred partner in green chains)	Very High (lack of trust, poor transparency)	In Scenario 3, firms may be excluded from sustainable EU value chains.
Strategic Innovation Risk	High (focus on minimum standards)	Low (ESG as innovation driver)	High (no real improvement or learning)	Only Scenario 2 treats ESG as a competitive and transformative asset.

Source: own elaboration.

Risk analysis shows that the greatest threats to the sector result from apparent and superficial actions not supported systemically or culturally. On the contrary, the most significant potential for resilience and advantage is gained by those companies that engage in ESG deeply and authentically, regardless of regulatory pressure.

For the logistics sector to effectively implement sustainable development goals and remain competitive, actions are necessary at three levels:

- Institutional - support from the state and industry organizations.
- Cultural - shift in the narrative and values of management.
- Strategic - ESG integration with day-to-day action and innovation.

Figure 2 presents a comparative assessment of five ESG risk domains across three strategic foresight scenarios for the Polish logistics sector.

It reveals that:

- Grassroots Green Leadership consistently shows the lowest risk profile, supporting that authentic, value-driven ESG integration increases resilience and trust.
- Superficial Adaptation carries the highest strategic risks, especially regarding reputation, innovation stagnation, and exclusion from EU green supply chains.
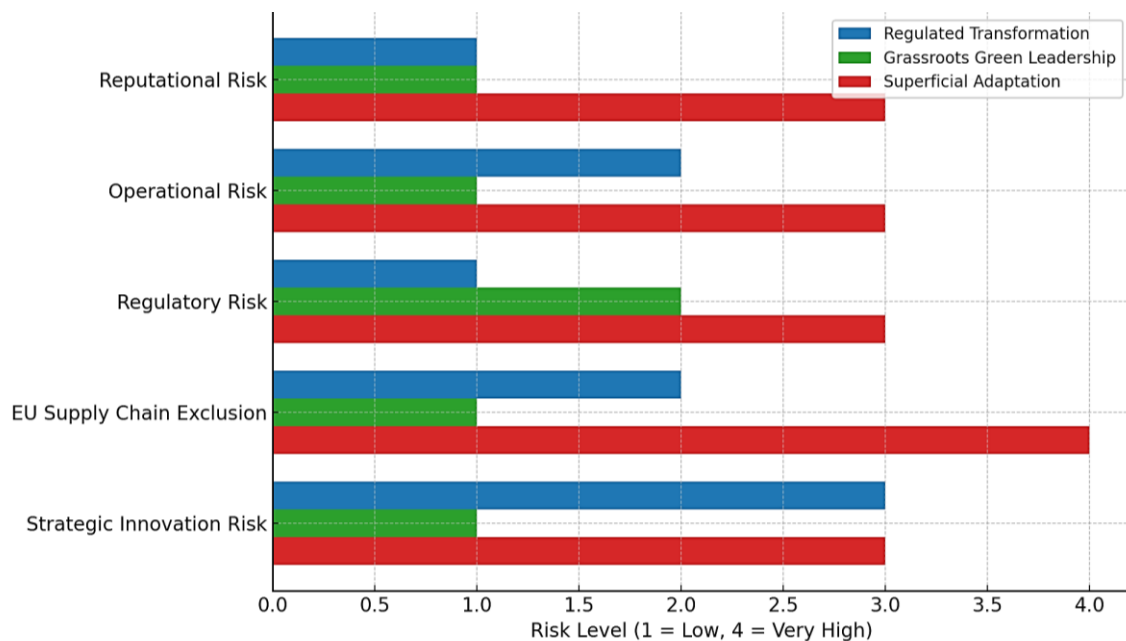- Regulated Transformation ensures regulatory compliance but offers limited innovation and long-term adaptability.

Figure 2. ESG risk domains across three strategic foresight scenarios for the Polish logistics sector.

Source: own elaboration based on Inayatullah (1998), DiMaggio (1983), Kaplan, Mikes (2012).

This visualization highlights the need for profound cultural and strategic shifts beyond formal compliance to minimize systemic ESG risks.

Table 4 provides a comparative evaluation of the three ESG scenarios based on key strategic criteria. The Green Grassroots Leadership scenario is identified as the most desirable and strategically resilient path, although it requires stronger support mechanisms. In contrast, the Superficial Adaptation scenario poses the highest long-term risks, while the Regulated Transformation offers feasibility without profound impact.

Table 4.
Evaluation of ESG Scenarios by Desirability and Feasibility Criteria

Criterion	Scenario 1: Regulated Transformation	Scenario 2: Green Grassroots Leadership	Scenario 3: Superficial Adaptation
Feasibility	High – aligned with current regulatory framework	Moderate – depends on culture shift and SME support	High – minimal effort, maintains status quo
Desirability	Moderate – ensures compliance but lacks innovation	High – fosters long-term resilience and stakeholder trust	Low – risks exclusion and reputational loss
Strategic Resilience	Moderate – compliance-focused, limited adaptability	High – integrated, value-driven ESG	Low – vulnerable to future shocks and market changes
Alignment with EU ESG Goals	Formally high, but implementation shallow	High – deep and genuine engagement	Low – symbolic compliance without substance

Source: own elaboration.

5. Discussion

The analysis confirmed that the main reason for the superficial implementation of ESG in the logistics sector is cultural and systemic factors, including the lack of internal motivation of the organization, as well as limited market pressure and the lack of clear financial incentives for SMEs (Evangelista et al., 2018; Martinsen, Huge-Brodin, 2014).

In the worldview layer, ESG is often perceived as a bureaucratic tool or a requirement of large corporations rather than as an internal strategic drive (DiMaggio, Powell, 1983). The dominant narratives revolve around the "low-margin transport sector" that "does not have the resources" to implement ESG – which is consistent with the remarks of Evangelista et al. (2018) and Martinsen & Huge-Brodin (2014).

However, the CLA study reveals that these are not only barrier measures but also deep-rooted perceptions of the role of logistics as the implementer of service-oriented tasks and not system change leaders (Inayatullah, 1998). The scenarios proposed in the analysis (controlled transformation, bottom-up leadership, apparent adaptation) indicate different paths of possible development, of which only the "green leadership" scenario creates conditions for deep, lasting and strategically integrated ESG change. The apparent adaptation scenario leading to high

reputational and operational risk is also confirmed by the results of other authors (Ahi, Searcy, 2015; Kaplan, Mikes, 2012).

Practical application has the following consequences:

- logistics companies should develop narrative and strategic ESG skills, not based on respecting the law itself (Czarniawska, 2004),

- public institutions should present support instruments (e.g. subsidies, reliefs) based on cultural change, not technological change,

- investors should consider the risk of "greenwashing" when evaluating the logistics sector (Ahi, Searcy, 2015).

Polluting against some of the literature that assumes ESG primarily as an element of compliance, as is so often the case in Anglo-Saxon approaches this time (cf. Eccles et al., 2014), this article illustrates the need for deeper engagement, combining organizational culture and sector narratives. Not only are indicators and reports sufficient, but there is also a change in the language in which logistics and its role in the economic system are discussed (Inayatullah, 1998).

The study's limitations result from its qualitative nature and the use of secondary data. The absence of empirical data (e.g. interviews) limits the possibility of generalization. Additionally, the scenarios are exploratory and require further verification in studies involving sector representatives.

Despite these limitations, the study adds value to the literature by combining CLA and foresight in the analysis of the ESG sector. It also draws attention to the need for a more daring research approach regarding narratives, identity and long-term industry strategies.

Although cultural and institutional factors are central to ESG transformation, digital technologies can be practical enablers, especially for SMEs in fragmented logistics networks. Technologies such as ESG reporting platforms (e.g., SAP Sustainability Control Tower, EcoVadis, Enablon), carbon footprint monitoring, or blockchain supply chain platforms reduce operational effort and enhance transparency. Policy interventions should thus promote compliance and digital infrastructure, training, and access to tailored ESG technologies for the logistics sector.

Future research should also focus on empirically tracking shifts in ESG-related narratives within the logistics sector. Suggested methods include longitudinal discourse analysis of ESG reports, media content and policy documents; interviews with logistics managers to explore changing perceptions; and social media sentiment analysis to monitor grassroots attitudes. This would allow researchers to detect cultural shifts across CLA's worldview and mythic layers and assess the transformation's pace over time.

6. Conclusions

The analysis conducted using the Causal Layered Analysis method and the foresight approach allowed us to identify key conditions hindering the effective implementation of ESG strategies in the logistics sector in Poland. The results indicate that the most significant barriers are the lack of institutional and financial support, deeply rooted beliefs, dominant narratives, and limited ability to perceive ESG as a strategic value.

The identified scenarios - regulated transformation, bottom-up leadership and apparent adaptation - reveal various possible development directions. Only an approach based on internal motivation and an organizational culture supporting ESG can ensure long-term effects and resilience of the sector. The key conclusion is the need to integrate public policy, education and institutional support with actions to change the values and language in which logistics and sustainable development are discussed.

From an economic and financial perspective, ESG in logistics has to be addressed not only as a cost of compliance but also as an investment in long-term stability, risk mitigation, and reputation building. That implies reshaping sector strategy, developing qualitative indicators, and setting predictive and adaptive capabilities for logistics companies.

The article's results provide valuable advice for researchers, decision-makers and practitioners in the logistics industry. At the same time, the study's limitations – including its qualitative nature and reliance on secondary data – indicate the need for continued empirical work, including research with the participation of sector representatives and comparative analysis with other EU countries.

It is recommended that narrative and foresight methods be used further in ESG sector research and to deepen cooperation between science and practice in modelling and implementing sustainable economy solutions.

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