

## **ESG in Logistics: Comparative Insights from Military and Civilian Sectors for Strategic Decision-Making**

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### **Abstract**

This paper examines how Environmental, Social, and Governance (ESG) criteria are integrated into strategic management decisions across two distinct logistics contexts—civilian and military— and what practices are transferable between them. Using a qualitative, comparative design, the study combines documentary analysis, two illustrative case vignettes (one private-sector logistics company; one military logistics structure), and semi-structured interviews with logistics practitioners. We clarify the unit of analysis (sector), while drawing on organizational examples to ground sector-level patterns. Findings indicate that civilian logistics tends to operationalize ESG through transparency, supplier screening, and digital optimization (e.g. fuel efficiency, route planning, etc.), whereas military logistics shows selective adoption shaped by mission constraints, risk posture, and security requirements. Nevertheless, convergences emerge around resource efficiency, resilience, and stakeholder accountability. We discuss implications for strategic decision-making (e.g. governance of ESG trade-offs, data and traceability requirements) and outline a pragmatic, context-sensitive checklist for ESG integration in logistics rather than a universal framework. The paper contributes by bridging largely separate literatures on ESG and logistics with the underexplored civil-military comparison, articulating concrete avenues for cross-sector learning while acknowledging limitations related to sample, size, data availability, and generalizability.

**Keywords:** Environment, social, governance, logistics.

**JEL classification:** E00, M11, M14.

### **Introduction**

Organizations increasingly incorporate ESG considerations into strategic management, yet sectoral contexts shape how ESG is interpreted and implemented. Logistics is a salient testbed because it concentrates environmental externalities, labor and community effects, and governance questions around transparency and traceability. However, while civilian logistics is driven by market, regulatory, and reputational pressures, military logistics operates under security constraints and mission-critical priorities. Research question: How does ESG integration in logistics differ between civilian and military sectors, and which practices are transferable across them?

Contributions: (I) a synthesis of ESG and logistics literatures through a civil–military comparison; (II) qualitative evidence from documentary analysis, two case vignettes, and semi-structured interviews; and (III) implications for strategic decision-making via a context-sensitive checklist. Structure: Section 2 reviews the literature; Section 3 details methods; Section 4 presents and discusses findings; Section 5 concludes with implications, limitations,

and future research.

### **1. ESG – A new paradigm in strategic management**

Today's organizations, whether civilian or military, are under increasing pressure to redefine the benchmarks of success. Profitability and efficiency, once the sole criteria for performance, are now accompanied - or even eclipsed - by notions such as sustainability, social ethics and accountability. In this context, ESG (Environmental, Social, Governance) mainstreaming is becoming more than a trend - it is becoming a strategic necessity.

In the logistics sector, this new way of thinking is reflected at all stages of the operational chain. Civilian companies, for example, are optimizing their routes to reduce carbon emissions, choosing partners with fair labor standards and adopting green technologies for warehousing and transport. This is driven not only by increasingly stringent regulations, but also by market expectations and the desire to remain competitive in a changing environment.

Military logistics, for its part, is gradually starting to incorporate the same values. Despite its specificities - marked by security constraints and operational urgencies - initiatives are emerging to reduce environmental impact, manage resources ethically and enhance transparency in decision-making. The use of green fuels in military transportation or the design of more sustainable logistic bases are just some of the examples foreshadowing this paradigm shift.

As global challenges become increasingly interconnected, ESG is becoming a key strategic filter. It is no longer just about coping with external demands, but about building resilient logistics systems that are aligned with societal values and capable of operating effectively in unstable times. ESG thus becomes an essential guide for decision-makers - a new language of strategic responsibility.

#### **1.1.Relevance of ESG in the Global Sustainability Agenda**

The ESG concept has emerged as a natural extension of major international sustainability initiatives, becoming a concrete tool through which organizations can contribute to global goals. Among these major directions are the Sustainable Development Goals (SDGs) promoted by the United Nations, which cover key issues such as the fight against climate change, social justice or institutional transparency. The ESG provides a coherent framework that transforms these ideals into internal policies, procedures and strategic decisions.

In logistics, the application of these principles is visible in both the private and military sectors. For example, the Romanian company Eltra Logis is taking an active ESG approach by developing the RAPIDO TMS platform, which allows routes to be optimized, fuel consumption to be reduced and resources to be better managed. This strategy not only enhances the company's competitiveness, but also directly contributes to the environmental goals set by international agreements such as SDG 13 - Climate Action.

On the military side, organizations such as NATO have begun to incorporate ESG into operational policies, notably through strategic documents such as the Climate Change and Security Action Plan. These initiatives aim at adapting logistical infrastructures to new climate conditions, reducing dependence on polluting resources and working more sustainably with the civilian environment in deployed missions.

At European Union level, the European Green Pact and new regulations such as the CSRD or the Sustainable Business Taxonomy reinforce the obligations of economic and institutional actors to align their actions with ESG standards. These reporting and compliance requirements are not just formal, but generate real pressures to transform the way logistics are designed and implemented.

Thus, ESG becomes a catalyst for aligning what the world demands of organizations - accountability, efficiency, balance - with what they are called to build: robust, sustainable and

ethically aligned logistics processes. Whether we are talking about companies such as Eltra Logis or alliances such as NATO, the application of this framework reflects the maturing of a global vision in which performance is also measured in social and environmental impact.

## **2. Theoretical background and literature Review**

### **2.1. ESG: definitions, brief history, „warwashing” and implications for strategy**

The concept of Environmental, Social and Governance (ESG) emerged as an evolution of Corporate Social Responsibility (CSR). While CSR traditionally referred to voluntary initiatives by companies to demonstrate social and environmental responsibility, often in the form of philanthropic actions or community engagement, ESG has developed into a structured and measurable framework directly connected to investment decisions, risk management and regulatory compliance (Carter and Rogers, 2008; Friede, Busch and Bassen, 2015).

ESG builds upon global sustainability frameworks, most notably the United Nations Sustainable Development Goals (SDGs), which set international benchmarks for climate action, social justice, and institutional accountability. In this sense, ESG transforms broad ideals into operational criteria for evaluating organizational performance and long-term resilience. From a strategic management perspective, ESG has shifted the focus from “profitability alone” to a triple bottom line approach that integrates environmental impact, social equity, and governance integrity into corporate strategy (Elkington, 1997; Seuring and Müller, 2008). Companies are increasingly evaluated not only on financial results, but also on their carbon footprint, labor practices, diversity and inclusion, and transparency in decision-making.

At the same time, critical debates have emerged. One of the most discussed risks is “warwashing”—the attempt to rebrand military or defence-related investments as socially responsible under ESG criteria (Reuters, 2025). This raises concerns about the dilution of sustainability principles when sectors with inherently destructive or non-sustainable outputs seek ESG legitimacy. Overall, ESG has become not just an ethical orientation, but a strategic imperative that influences how organizations plan, operate and are perceived by stakeholders. Its integration into logistics is particularly significant given the sector’s central role in emissions, resource use and supply chain governance.

### **2.2. ESG Implementation in Civilian and Military Logistics**

Logistics represents one of the most visible arenas for ESG implementation because of its direct impact on the environment, labor practices, and governance standards. However, the application of ESG differs substantially between the civilian and military sectors, reflecting divergent priorities, constraints and accountability mechanisms.

Civilian logistics has been among the early adopters of ESG practices, largely driven by regulatory frameworks, market competition, and consumer expectations. Companies increasingly integrate environmental criteria, such as reducing greenhouse gas emissions through route optimization, using low-emission vehicles, and adopting digital platforms to minimize resource waste (Seuring and Müller, 2008). Social factors include labor rights, workplace safety, and diversity policies across global supply chains. Governance practices involve transparent supplier selection, traceability of subcontracting, and public ESG reporting (Carter and Rogers, 2008). In Romania, for instance, Eltra Logis has implemented the RAPIDO TMS platform to optimize transport efficiency while simultaneously reducing emissions, aligning its operations with SDG 13 – Climate Action.

By contrast, military logistics operates under strict security imperatives and mission-critical demands, which make ESG adoption more complex and uneven. Environmental efforts have emerged primarily through multinational organizations such as NATO and the UN. Examples include the NATO Climate Change and Security Action Plan (2021), which

promotes energy efficiency in bases and the use of alternative fuels in operations, and the UN Environmental Policy for Field Missions (2020), which mandates waste reduction and environmental protection measures. Social aspects involve the welfare of deployed personnel and the respect of human rights in operational theatres, including collaboration with local communities. Governance dimensions are complicated by secrecy and centralized command structures; nonetheless, initiatives to increase procurement transparency and resource traceability are gradually being introduced (NATO, 2021).

Despite these differences, there are converging trends. Both sectors recognize the efficiency gains and reputational benefits associated with ESG. Civilian practices such as digital supply-chain traceability and supplier ESG audits can inspire military reforms, while military emphasis on rigor, standardization and accountability may provide models for civilian operators seeking more robust governance systems. In sum, the civilian sector demonstrates greater flexibility and external pressure to adopt ESG, whereas the military sector integrates ESG selectively, constrained by security priorities but increasingly aware of its strategic relevance.

### **2.3. Research gaps and opportunity**

Although the literature on ESG has expanded considerably over the past decade, significant gaps remain regarding its application in logistics, particularly in the comparative analysis of civilian and military sectors. Most research on ESG in logistics has focused on large multinational corporations and global supply chains (Pagell and Shevchenko, 2014; Brandenburg et al., 2019), with limited attention to military or public-sector contexts.

A first gap concerns the lack of direct civil–military comparisons in ESG implementation. While private-sector studies emphasize efficiency, innovation, and market-driven sustainability, there is little systematic analysis of how military structures adopt or resist ESG practices under security and operational constraints.

A second gap relates to measurement challenges. ESG performance indicators are more established in the corporate sector (e.g., carbon accounting, social audits), but remain underdeveloped for military operations, where data are often classified or context-specific. The absence of standardized, sector-specific metrics complicates the evaluation of ESG practices in defence logistics (Carter et al., 2015).

A third research gap is the limited transfer of best practices between sectors. Civilian innovations in digital traceability, supplier audits, and emission monitoring have not been systematically tested in military contexts. Conversely, the military’s emphasis on accountability, resource discipline, and standardized procedures could inspire improvements in civilian governance systems.

Finally, critical debates such as “warwashing”—the risk of rebranding defence-related investments as sustainable—have not been adequately examined in the logistics literature, leaving a blind spot in understanding the ethical and reputational implications of ESG in military contexts (Reuters, 2025). These gaps highlight the need for comparative, interdisciplinary research that investigates how ESG principles can be realistically adapted across sectors. This paper seeks to address this opportunity by analyzing both civilian and military logistics, identifying contrasts, convergences, and possibilities for cross-sector learning.

### **2.4. Literature review summary and theoretical**

The literature on ESG highlights its growing importance as both a performance framework and a strategic imperative. From its roots in CSR and its alignment with the UN SDGs, ESG has evolved into a structured set of criteria used by investors, regulators and organizations to evaluate long-term resilience and accountability (Elkington, 1997; Friede,

Busch and Bassen, 2015). Research has emphasized the benefits of ESG for competitive advantage, stakeholder trust and risk management, while also noting limitations such as inconsistent measurement and the risk of symbolic adoption.

Within logistics, ESG implementation has been widely discussed in the civilian sector, particularly in relation to environmental impact reduction, digital supply-chain optimization, and responsible labor practices (Seuring and Müller, 2008; Carter and Rogers, 2008). Military logistics, by contrast, remains underexplored in academic research, despite the fact that it is a major consumer of resources and an increasingly visible actor in sustainability debates. Initial policy initiatives by NATO and the UN demonstrate that ESG considerations are entering defence discourse, but systematic empirical evidence is still lacking.

This review points to three theoretical insights. First, ESG functions not only as a normative framework but also as a strategic decision-making lens, shaping how organizations evaluate trade-offs between efficiency, resilience and accountability. Second, civilian and military logistics represent distinct yet complementary contexts for examining ESG, with the former driven by market pressures and the latter by security imperatives. Third, comparative research across these domains offers a unique opportunity to identify transferable practices and to clarify the boundaries of ESG applicability in sectors with contrasting missions and constraints. By addressing these insights, the present study positions itself at the intersection of strategic management, sustainability studies, and defence logistics, filling a gap in the literature and providing a foundation for the empirical analysis presented in the following sections.

### **3. Research methodology**

#### **3.1. Research design and unit of analysis**

The study adopts a qualitative comparative design, with the sector (civilian vs. military logistics) as the primary unit of analysis. Individual organizations are introduced as illustrative case vignettes, not as stand-alone case studies, in order to highlight sector-specific dynamics. This approach is appropriate given the exploratory nature of ESG integration in logistics and the limited availability of systematic data, especially in the military domain.

#### **3.2. Data collection tools: documentary analysis and interviews**

Two complementary sources of evidence were used:

(I) Documentary analysis.

Relevant policy documents, ESG reports, and academic publications were systematically collected using the following criteria: (a) relevance to ESG implementation in logistics; (b) recency (published between 2010-2025); (c) credibility of source (academic journals, official institutions, corporate ESG reports). The final corpus included 13 documents: seven peer-reviewed journal articles, one book, four institutional reports (European Commission, NATO, UN), and one media source (Reuters).

(II) Semi-structured interviews.

To capture practitioners' perspectives, interviews were conducted with logistics professionals from both sectors. The sample consisted of 8 participants, 4 from the civilian sector (2 operations managers, 1 ESG specialist, 1 supply chain coordinator) and 4 from the military sector (2 logistics officers in deployed missions, 1 procurement officer, 1 sustainability focal point in MND-SE). Interviews were carried out during January 2025-June 2025, either face-to-face or online. A purposive sampling strategy was adopted to ensure variation in perspectives while maintaining relevance to the research question. The interview guide covered themes such as environmental practices, social responsibility in logistics operations, governance mechanisms, and perceived challenges in applying ESG. Interviews lasted on average between 20 and 30 minutes.

### 3.3. Case vignettes

To illustrate sectoral contrasts, two case vignettes were constructed:

Civilian sector.

- Eltra Logis, a Romanian logistics company implementing the RAPIDO TMS platform, which enables digital route optimization and emission reduction. This vignette demonstrates how ESG can be operationalized through digital transformation and supply chain efficiency.

Military sector.

- A logistics structure engaged in multinational operations under NATO and UN mandates, where ESG is selectively integrated through environmental measures (e.g., fuel alternatives, waste management), social safeguards, and governance protocols.

These vignettes serve to ground sector-level findings in concrete practices without claiming generalizability at the organizational level.

### 3.4. Data analysis and validity

The data were analyzed using thematic analysis. Transcripts and documents were coded inductively and grouped into themes reflecting ESG dimensions (environmental, social, governance) and sectoral contrasts. Constant comparison was used to identify similarities and differences between civilian and military contexts.

- To enhance reliability and validity, several measures were applied:
- Iterative coding with refinement of the codebook;
- Triangulation across documents, interviews, and case vignettes;
- Member-checking with two interviewees to verify interpretations;
- Explicit recognition of limitations, including the small non-probabilistic sample and restricted access to sensitive military data.

### 3.5. Ethical considerations

All interview participants provided informed consent. Anonymity was guaranteed, and sensitive information related to military operations was handled in accordance with confidentiality requirements. Data were securely stored and used exclusively for research purposes.

## 4. Results and discussion

### 4.1. Civilian Logistics

Interviews with private-sector logistics professionals highlighted three dominant themes: transparency, digital efficiency, and labor practices. Companies face strong regulatory and market pressures to demonstrate ESG compliance. One participant noted:

“Clients increasingly ask us for ESG metrics—carbon footprint, supplier audits—before signing a contract. It’s not optional anymore.” (ESG lead)

Digital solutions, such as the RAPIDO TMS platform, were repeatedly mentioned as tools that simultaneously reduce emissions and cut costs. As one operations manager explained:

“By optimizing our routes digitally, we cut fuel use by 15%. ESG here means efficiency, not just image.” (Operations Manager)

On the social dimension, respondents emphasized subcontracting practices and working conditions, noting difficulties in enforcing standards across extended supply chains. Despite these challenges, civilian logistics actors generally perceived ESG as a competitive advantage.

### 4.2. Military Logistics

In contrast, interviewees from the military sector emphasized constraints of mission and security. ESG principles are acknowledged, but implementation is selective and context-dependent. A logistics officer explained:

“On deployment, mission success comes first. If we can also reduce waste or use cleaner fuels, we do it—but operational needs dictate priorities.” (S4, Military Logistics Officer)

Environmental initiatives such as alternative fuels, renewable energy for bases, and waste reduction protocols were mentioned, but often described as pilot projects. Governance was highlighted as a sensitive issue:

“Transparency has limits in military logistics. We can’t publish everything like companies do, but we are improving internal auditing.” (J4, Officer, EUMAM mission)

Social aspects focused primarily on personnel welfare and respecting local communities in deployment areas, aligned with UN peacekeeping standards.

### **4.3. Cross-Sectorial insights and transferable practices**

The comparison shows clear contrasts:

- Civilian logistics emphasizes external accountability (to clients, regulators, investors).

Military logistics prioritizes internal accountability (to command structures, mission imperatives).

- Despite differences, convergence exists around resource efficiency and resilience. Civilian practices such as digital traceability systems and supplier screening could be adapted to military settings, while military rigor in governance and standardized procedures may offer models for civilian firms.

These results suggest that ESG is not a one-size-fits-all framework but a strategic lens applied differently depending on context. Civilian logistics actors tend to see ESG as a route to market legitimacy and efficiency, while military actors frame ESG as a secondary yet emerging priority, constrained by operational demands.

### **Conclusions and future directions**

Building on the findings presented in Sector 4, this section synthesizes key insights and outlines avenues for future research. This study investigated how ESG principles are integrated into logistics across civilian and military sectors, highlighting both differences and convergences. The comparative approach shows that while civilian logistics is primarily driven by market and regulatory pressures, military logistics adopts ESG selectively, shaped by security and operational imperatives. Yet, both sectors converge on themes of efficiency, resilience, and accountability, albeit operationalized in different ways.

The contribution of this research lies in bringing together two domains rarely analyzed in parallel. By integrating literature on ESG, sustainability, and logistics with empirical insights from interviews, documentary analysis, and case vignettes, the paper advances understanding of how ESG functions not only as a normative framework but also as a strategic decision-making lens. This comparative lens adds nuance to ongoing debates on the scope and limits of ESG, particularly in sensitive contexts such as defence logistics. Several limitations must be acknowledged. The empirical evidence is based on a small, non-probabilistic sample of interviews and a limited set of documents, which constrains generalizability. In the military context, access to detailed operational data was restricted for security reasons. There is also the possibility of social desirability bias, with participants presenting ESG efforts in more favourable terms.

Despite these limitations, the findings suggest practical avenues for cross-sector learning. Civilian actors may draw inspiration from the military’s rigor in governance and resource discipline, while military structures can benefit from adapting civilian innovations in digital traceability and supplier due diligence. Instead of universal “policy recommendations”, the study proposes a context-sensitive checklist of questions that managers—civilian or military—can use when integrating ESG into logistics decisions (e.g., What trade-offs are involved? Which ESG dimensions are feasible in this context? How is accountability ensured?).

Future research should expand the sample to include a broader range of organizations, develop sector-specific ESG indicators for logistics, and examine implementation in high-risk environments, where sustainability principles are most difficult to apply. In addition, critical debates such as “warwashing”—the attempt to classify defence-related activities as sustainable—should be further explored to clarify the ethical and reputational boundaries of ESG.

In conclusion, the study demonstrates that ESG in logistics cannot be reduced to a uniform framework. Rather, it functions as a flexible, context-driven lens through which decision-makers balance efficiency, resilience, and responsibility. By acknowledging both potential and limits, this paper contributes to the broader dialogue on how sustainability can be realistically integrated into diverse strategic environments.

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