



Article

Sustainability and Profitability of Large Manufacturing Companies

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Abstract

This study explores whether sustainability achievements—proxied through ESG (environmental, social, and governance) reporting—are associated with superior financial performance in Latvia's manufacturing sector, where ESG maturity remains low and institutional readiness is still emerging. Building on stakeholder, legitimacy, signal, slack resources, and agency theories, this study applies a mixed-method approach (that consists of two analytical stages) suited to the limited availability and reliability of ESG-related data in the Latvian manufacturing sector. Financial indicators from three large firms—AS MADARA COSMETICS, AS Latvijas Finieris, and AS Valmiera Glass Grupa—are compared with industry averages over the 2019–2023 period using independent sample *T*-tests. ESG integration is evaluated through a six-stage conceptual schema ranging from symbolic compliance to performance-driven sustainability. The results show that AS MADARA COSMETICS, which demonstrates advanced ESG integration aligned with international standards, significantly outperforms its industry in all profitability metrics. In contrast, the other two companies remain at earlier ESG maturity stages and show weaker financial performance, with sustainability disclosures limited to general statements and outdated indicators. These findings support the synergy hypothesis in contexts where sustainability is internalized and operationalized, while also highlighting structural constraints—such as resource scarcity and fragmented data—that may limit ESG-financial alignment in post-transition economies. This study offers practical guidance for firms seeking competitive advantage through strategic ESG integration and recommends policy actions to enhance ESG transparency and performance in Latvia, including performance-based reporting mandates, ESG data infrastructure, and regulatory alignment with EU directives. These insights contribute to the growing empirical literature on ESG effectiveness under constrained institutional and economic conditions.

Keywords: sustainability reporting; ESG integration; profitability; trade-off hypothesis; synergy hypothesis; manufacturing sector



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1. Introduction

In today's business environment, sustainability has become an integral part of a business, as global resources are limited and their preservation is a priority for humanity (United Nations Department of Economic and Social Affairs Sustainable Development,

2025a, 2025b; Libkowska et al., 2023; Libkowska & Lemss, 2022). The linear production model “take, make, dispose” is no longer acceptable, as it leads to environmental degradation (Libkowska et al., 2023; Libkowska & Lemss, 2022).

To ensure that companies adhere to sustainable practices, several regulatory acts have been adopted in the European Union (EU) that require companies to report on sustainable development issues (DataScientest, 2024; Hummel & Jobst, 2024). On January 2023, the Corporate Sustainability Reporting Directive (CSRD) came into effect, replacing the Non-Financial Reporting Directive 2014, thereby improving the quality of sustainability reporting (European Commission, 2025).

A sustainability report is a non-financial report that allows companies to provide information on the achievement of sustainability goals using ESG (environmental, social, and governance) indicators (GEP, 2025). Sustainability reporting is an essential tool for companies and organizations to assess and communicate their sustainability performance. Its importance derives from the need for transparency and accountability to stakeholders, including investors, customers, and employees (Rusu et al., 2024).

Despite the active development of EU sustainability regulations, the Latvian manufacturing sector still shows limited maturity in ESG integration. According to (Novicka, 2024), large organizations in Latvia face challenges related to data availability and quality, and sustainability reporting systems are often fragmented and not integrated with financial accounting. This makes the Latvian context particularly illustrative for examining the actual impact of sustainable practices on financial performance under conditions of institutional underpreparedness. The 2019–2023 period was selected as a representative timeframe, covering both the pre- and post-COVID-19 phases, as well as the introduction of the new CSRD in 2023.

The central question of this study, i.e., the research problem, is as follows: does the integration of sustainability practices, as evidenced by ESG reporting, have a measurable impact on the profitability of large manufacturing companies in Latvia? This question reflects the objective of this study, which is to explore whether sustainability achievements—proxied through ESG reporting—are associated with superior financial performance in Latvia’s manufacturing sector, where ESG maturity remains low and institutional readiness is still emerging. By empirically examining the relationship between ESG integration and financial performance within Latvia’s manufacturing sector, this study fills a critical research gap. Its findings contribute to the growing body of evidence supporting the strategic value of sustainability, offering practical implications for companies, regulators, and policymakers aiming to enhance both profitability and long-term resilience.

2. Research Background and Related Studies

The relationship between corporate sustainability—especially via ESG (environmental, social, and governance) practices—and financial performance has become a key topic in business research. This complex and evolving discourse reflects two dominant perspectives on corporate performance. The first focuses on financial returns to investors, emphasizing profit and shareholder value. The second views companies as socio-economic systems operating within networks of internal and external stakeholders, requiring balanced sustainable strategies (Dobrovič et al., 2018; Illmeyer et al., 2017; Monni et al., 2017).

Two dominant theoretical frameworks underpin this debate. The first, known as the shareholder value perspective or trade-off hypothesis, conceptualizes sustainability primarily as a cost burden. Rooted in neoclassical theory, this view maintains that firms exist to maximize shareholder value, and any diversion of resources toward social or environmental ESG goals undermines this core objective. Friedman (1970) famously argued that the only social responsibility of business is to increase its profits, while Wally and Whitehead (1994)

emphasized that environmental and social initiatives often entail significant capital and operational costs, thereby reducing short-term profitability. This perspective is further reinforced by agency theory (Jensen & Meckling, 1976), which suggests that managers may pursue ESG initiatives not to benefit shareholders but to enhance their own reputation or fulfill personal agendas. Such behavior creates agency costs, whereby the interests of managers deviate from those of shareholders. Empirical studies aligned with these theories (e.g., Aupperle et al. (1985); Brammer et al. (2006)) have frequently identified weak or even negative correlations between ESG performance and financial outcomes, particularly in high-cost and capital-intensive sectors such as energy and manufacturing.

Some recent research continues to support aspects of this argument. For example, Siwiec and Karkowska (2024) found that the relationship between ESG performance and financial performance (FP) of companies in Central and Eastern Europe is generally positive but not statistically significant. They concluded that, while ESG activities may support long-term financial stability, they do not guarantee immediate financial gains, and the relationship is influenced by sectoral and regional factors. Hong et al. (2020) demonstrated that firms investing heavily in ESG initiatives often experience a short-term dip in earnings, especially during the initial implementation phase. However, they also note that such investments can potentially yield delayed financial benefits, highlighting the temporal nature of the trade-off and opening the door to a more dynamic understanding of ESG impacts over time.

This temporal imbalance is further supported by slack resources theory, which argues that the excessive allocation of internal resources—such as through innovation or early-stage ESG investments—may weaken short-term financial performance and crowd out traditional CSR efforts (Onuoha & Nkwor, 2021). As such, slack resources theory aligns closely with the trade-off hypothesis by emphasizing that limited financial capacity can force firms to prioritize, often leading to cost-based decisions that delay or diminish the effectiveness of sustainability strategies (Ben Flah et al., 2024).

Conversely, the synergy hypothesis, based on stakeholder theory, argues that ESG positively impacts long-term financial performance by reducing risk, improving reputation, and attracting investors and consumers (Freeman, 1984; Porter & Kramer, 2011). This view sees firms embedded in stakeholder networks where sustainable practices drive strategic advantage. Friede et al. (2015) reviewed over 2000 studies and found that around 60% reported a positive ESG–financial performance link. Supporting this, Kim and Li (2021) found that ESG factors positively influence profitability and credit ratings. Agbakwuru et al. (2024) concluded that robust ESG performance correlates with lower capital costs and higher investor confidence, though outcomes vary by industry and ESG implementation quality.

Gherghina's (2024) volume *Corporate Finance and ESG Practices* synthesizes much of the current thinking. Across 12 peer-reviewed studies, it confirms that ESG integration—when aligned with strategy and stakeholder interests—boosts firm value, reduces financial risk, and enhances crisis resilience. Several contributions show ESG spending correlates with improved disclosure, while governance factors like board diversity enhance firm value through ESG channels. Other findings include reduced cost of equity in the EU, price stabilization during market shocks (e.g., COVID-19), and strengthened long-term investor trust—strongly affirming the synergy hypothesis.

At the intersection of these debates lies legitimacy theory, which offers a sociological explanation for ESG behavior by emphasizing the need for firms to maintain societal approval and legitimacy. According to Suchman (1995), legitimacy is “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (p. 576). In this context, ESG activities may not be primarily economically driven but

undertaken as a response to stakeholder expectations and social norms. Early theorists such as [Dowling and Pfeffer \(1975\)](#) and [Lindblom \(1994\)](#) argue that companies engage in sustainability reporting to secure their legitimacy and mitigate threats to their social contract. From this perspective, even firms that do not experience immediate financial returns from ESG may still engage in such practices to preserve reputational capital and long-term operational license. Thus, legitimacy theory adds a complementary lens, i.e., firms may view ESG not as a trade-off or synergy but as a legitimacy-maintaining strategy in contexts of heightened societal or regulatory scrutiny.

A further complementary explanation is offered by signal theory, which conceptualizes ESG activities—especially disclosure practices—as strategic signals aimed at reducing information asymmetry between firms and external stakeholders, particularly investors. According to [Spence \(1973\)](#), signaling is essential in markets where one party (e.g., managers) holds more information than another (e.g., investors). In this context, ESG disclosures function as credible signals of management quality, long-term orientation, and risk awareness ([Connelly et al., 2011](#)). Empirical research suggests that firms with high ESG transparency are perceived as lower risk investments, which may reduce capital costs and attract institutional investors ([Hawn et al., 2018](#); [Bai et al., 2022](#)). Thus, ESG engagement may be financially motivated not only through internal performance gains but also through external perceptions that influence market valuation.

In this context, the study by [Avaritsioti \(2025\)](#) on decarbonization strategies in the UK shipping sector can be critically justified through the lens of several theoretical frameworks. From the perspective of stakeholder theory, the paper's emphasis on aligning operational decisions (such as retrofitting and fuel choice) with regulatory and market expectations reflects a strategic response to broader stakeholder demands, including regulators, customers, and environmental groups. The integration of financial and environmental metrics suggests that shipowners are increasingly accountable not only to shareholders but to a wider network of interests. Signal theory also offers valuable insight into the study's rationale, i.e., by adopting visible and measurable decarbonization strategies, shipowners send credible signals of regulatory compliance and long-term risk management to investors, potentially reducing information asymmetry and attracting capital. Furthermore, elements of slack resources theory underpin the paper's discussion of retrofitting and fuel investments—these strategies are feasible primarily for firms with financial flexibility, indicating that resource slack enables proactive sustainability engagement without jeopardizing operational viability. Lastly, the study's attention to compliance and reputational factors aligns with legitimacy theory, as firms may pursue CII-aligned strategies not only for financial reasons but to maintain their legitimacy under the increasing scrutiny of international environmental standards. In sum, Avaritsioti's research contributes meaningfully to the ESG–financial performance discourse by grounding its empirical analysis in a multi-theoretical justification that captures both instrumental and institutional motivations.

Despite the growing global body of research linking ESG integration to financial performance, there remains a notable gap in empirical studies focused on post-transition economies such as Latvia, where institutional readiness for sustainability remains underdeveloped. Unlike many Western contexts, Latvian manufacturing companies typically operate with minimal resource slack, limiting their capacity to absorb the short-term costs of ESG initiatives or to invest proactively in sustainable innovation. As highlighted by [Novicka \(2024\)](#), ESG reporting in Latvia is often fragmented, poorly integrated with financial systems, and heavily reliant on formal compliance rather than strategic transformation. Moreover, sustainability practices are frequently shaped by external regulatory pressure rather than internalized stakeholder-driven strategies. This study addresses these underexplored dynamics by examining whether—and under what conditions—Latvian

manufacturing firms can achieve superior financial performance through ESG engagement, despite the structural constraints of limited slack resources, emerging ESG infrastructure, and sectoral variability. By focusing on Latvia’s unique institutional and economic context, the study contributes nuanced insights into the real-world implications of ESG in resource-constrained environments.

3. Conceptual Framework of This Study

This study builds on the theoretical premise that sustainability becomes a genuine driver of business development only when it is strategically internalized—not just formally declared. While Section 2 outlined the theoretical foundations of sustainability, the present conceptual framework (see Table 1) aims to operationalize these ideas by presenting an integrative schema that captures the evolution of ESG integration and its potential impact on financial performance.

Table 1. Conceptual schema, from sustainability integration to its real impact on profitability (source: elaborated by the authors based on [Stead and Stead \(2014\)](#) and [Galpin and Hebard \(2018\)](#)).

Sustainability Integration Stage	Description	Indicators or Characteristics
1. Formal ESG reporting	Public sustainability disclosures made primarily to comply with external norms or expectations	ESG statements in annual reports or websites; weak internal links
2. Strategic formulation	Definition of sustainability goals within strategic documents	CO ₂ reduction plans, diversity targets, ESG policy sections
3. Institutionalization	Embedding sustainability in governance structures and responsibilities	Dedicated departments, board oversight, internal agendas
4. Operationalization	Translation into daily processes and performance monitoring	KPIs, employee incentives, sustainability-linked metrics
5. Cultural and normative shift	Deep integration into company values and organizational identity	Internal awareness, staff alignment, education efforts
6. Performance and impact	Tangible outcomes in business and societal terms	Improved profitability, resilience, legitimacy, stakeholder trust

At the core of the framework lies stakeholder theory, which maintains that companies are accountable not only to shareholders but to a wider range of internal and external stakeholders ([Freeman, 1984](#)). This view expands the notion of corporate success to encompass social and environmental outcomes alongside traditional financial returns ([Porter & Kramer, 2011](#); [Agbakwuru et al., 2024](#)). In the Latvian context—where regulatory enforcement is growing but stakeholder pressure remains moderate—this theory underscores the importance of proactive engagement with diverse interest groups to achieve resilience and legitimacy.

Legitimacy theory further explains why firms may adopt sustainability practices even in the absence of immediate financial gain. In a context such as Latvia, where ESG maturity is still developing and public scrutiny is rising due to EU regulatory changes, ESG reporting may function as a tool to maintain or restore social legitimacy ([Suchman, 1995](#); [Dowling & Pfeffer, 1975](#)). Firms may thus engage in sustainability not purely for economic reasons but to conform to evolving societal expectations.

Signal theory complements this perspective by conceptualizing ESG disclosures as strategic signals aimed at reducing information asymmetry between firms and stakeholders. Especially in Latvia, where reliable ESG metrics are scarce and transparency remains a challenge ([Novicka, 2024](#)), firms with clear and credible sustainability communication may attract investor trust, enhance reputational capital, and reduce financing costs ([Spence, 1973](#); [Connelly et al., 2011](#)).

However, the framework also accounts for constraining forces. Slack resources theory highlights that firms with limited excess resources—common in Latvia’s manufacturing sector—may find it difficult to absorb the upfront costs of ESG transformation (Onuoha & Nkwor, 2021). As such, the capacity to move beyond symbolic ESG efforts depends not only on strategic intent but also on available financial and organizational slack.

Finally, agency theory offers a critical lens on internal motivations, suggesting that in resource-constrained environments like Latvia, ESG efforts may be shaped by managerial preferences or reputational incentives rather than shareholder interests (Jensen & Meckling, 1976). This underscores the risk of symbolic compliance and the importance of governance structures that align ESG initiatives with long-term value creation.

Taken together, these theoretical perspectives support a dynamic view of ESG integration, where sustainability evolves from external signaling and formal declarations toward embedded operational and cultural change (Stead & Stead, 2014; Galpin & Hebard, 2018). The conceptual schema presented in Table 1 reflects this progression, allowing for differentiation between companies at various stages of ESG maturity—from compliance-driven reporting to measurable financial and societal impact.

The analytical objective of this study is to examine whether companies that publicly report on ESG activities also exhibit stronger financial performance compared with industry benchmarks. By aligning these indicators with the first and last stages of our conceptual schema, this study aims to test whether formal sustainability reporting corresponds to measurable impact. This is particularly relevant given the findings of Novicka (2024), which suggest that, in Latvia, ESG practices are often not embedded in internal processes. Thus, our conceptual framework allows us to distinguish superficial compliance from strategic integration.

4. Data and Methodology

Given the limited availability and reliability of ESG-related data in the Latvian manufacturing sector, and the heterogeneous nature of available sustainability information (ranging from formal declarations to selective performance indicators), this study applies a comparative descriptive approach. A full econometric model is not feasible in this context due to data immaturity and the absence of standardized ESG metrics across firms. Instead, the chosen method combines quantitative comparison of financial profitability with qualitative assessment of sustainability integration, allowing for a pragmatic yet structured analysis of ESG–performance relationships under real-world constraints.

This mixed-method approach consists of two analytical stages. First, financial performance indicators of three large Latvian manufacturing companies were calculated over a five-year period (2019–2023) and compared with industry averages. Profitability, reflecting the ratio of profit to turnover, assets, or equity, was used as a proxy for financial performance. The selected indicators included commercial, economic, and financial profitability—both before and after tax—based on standardized formulas published by the Central Statistical Bureau (CSB) of Latvia (2025d). Independent sample *T*-tests were used to evaluate the statistical significance of differences between company-level and industry-level profitability (Field, 2009).

Second, each company’s degree of ESG integration was assessed using the conceptual schema introduced in Section 3 (Table 1). This schema operationalizes six stages of sustainability maturity—from formal reporting to measurable financial and societal impact—drawing on stakeholder theory, legitimacy theory, signal theory, agency theory, and slack resources theory. Companies were positioned within the schema based on qualitative content analysis of their sustainability disclosures, including reporting frame-

works, presence of performance indicators, governance structures, stakeholder engagement practices, and internal implementation measures.

Although this approach does not claim to establish a causal relationship between ESG and financial outcomes, it enables structured comparison and grounded interpretation within the limitations of the Latvian context. Importantly, the combination of quantitative and qualitative methods helps reveal whether firms with more advanced sustainability integration also exhibit superior financial performance. This dual lens is particularly relevant in an institutional setting where ESG practices are still evolving, and where companies often operate with minimal slack resources and limited strategic capacity for sustainability transformation.

This study utilized statistical data from the Central Statistical Bureau (CSB) of Latvia and financial performance reports of three major Latvian manufacturing companies (LURSOFT IT, 2020–2024a, 2020–2024b, 2020–2024c), along with their sustainability disclosures (Latvijas Finieris, 2025; MADARA COSMETICS, 2025; Valmiera Glass Grupa, 2024). Profitability, reflecting profit relative to sales, assets, or equity, serves as a key measure of managerial efficiency, competitiveness, and long-term viability (Haessler, 2020; Inrawan & Lie, 2024; Primasatria & Alfons, 2025).

The following three large manufacturing companies operating in different sub-sectors were selected:

- **AS MADARA COSMETICS** (chemicals and cosmetics), based in Riga, is the largest cosmetics producer in Latvia. In 2024, it employed 207 people, had a turnover of EUR 21.5 million, and earned EUR 5.4 million in after-tax profit (MADARA COSMETICS, 2025).
- **AS Latvijas Finieris** (wood processing), with factories in Riga, Kuldīga, and Skrunda, it employed 2413 people in 2022 and reported a turnover of EUR 409 million, EBITDA of EUR 81 million, and EUR 40.2 million in taxes paid (Latvijas Finieris, 2025).
- **AS Valmiera Glass Grupa** (fiberglass), located in Valmiera, is a leading European glass fiber producer. In 2023, it had 1203 employees, EUR 117.8 million in turnover, and EUR 1.39 million in profit (LURSOFT IT, 2020–2024c)

For these companies, six profitability indicators—commercial, economic, and financial profitability (each before and after taxes)—were calculated over the 2019–2023 period to enable sectoral comparison and performance assessment.

Commercial profitability indicates how much profit a company earns from each unit of net turnover. Commercial profitability before taxes is calculated according to Equation (1) (Central Statistical Bureau (CSB) of Latvia, 2025d):

$$CPBT = \frac{PLBT}{NT} \times 100, \quad (1)$$

where CPBT is the commercial profitability before taxes, PLBT is the profit or loss before taxes, and NT is the net turnover.

The commercial profitability after tax is calculated according to Equation (2) (Central Statistical Bureau (CSB) of Latvia, 2025d):

$$CPAT = \frac{PLAT}{NT} \times 100, \quad (2)$$

where CPAT is the commercial profitability after taxes, PLAT is the profit or loss after taxes, and NT is the net turnover.

Economic profitability indicates how much profit a company makes on each unit of assets it holds. Pre-tax economic profitability is calculated using Equation (3) (Central Statistical Bureau (CSB) of Latvia, 2025d):

$$EPBT = \frac{PLBT}{AVBSA} \times 100, \quad (3)$$

where EPBT is the economic profitability before taxes, PLBT is the profit or loss before taxes, and AVBSA is the average value of balance sheet assets.

The after-tax economic profitability is calculated according to Equation (4) (Central Statistical Bureau (CSB) of Latvia, 2025d):

$$EPAT = \frac{PLAT}{AVBSA} \times 100, \quad (4)$$

where EPAT is the economic profitability after taxes, PLAT is the profit or loss after taxes, and AVBSA is the average value of balance sheet assets.

Financial profitability indicates how much profit an entity earns per unit of equity. Pre-tax financial profitability is calculated using Equation (5) (Central Statistical Bureau (CSB) of Latvia, 2025d):

$$FPBT = \frac{PLBT}{AVOC} \times 100, \quad (5)$$

where FPBT is the financial profitability before taxes, PLBT is the profit or loss before taxes, and AVOC is the average value of own capital.

After-tax financial profitability is calculated using Equation (6) (Central Statistical Bureau (CSB) of Latvia, 2025d):

$$FPAT = \frac{PLAT}{AVOC} \times 100 \quad (6)$$

where FPAT is the financial profitability after taxes, PLAT is the profit or loss after taxes, and AVOC is the average value of own capital.

To compare the average profitability indicators of selected manufacturing companies and the industry average over 2019–2023, an independent sample *T*-test was conducted. As pointed out in Field's monograph *"Discovering Statistics Using SPSS"* (2009), this statistical method evaluates whether the means of two independent groups differ significantly (Field, 2009; Kent State University, 2025). The test involved the following two opposing hypotheses:

H0. *No statistically significant difference exists between the company and industry profitability averages.*

H1. *A statistically significant difference exists.*

In addition to identifying statistical differences, the analysis compares profitability patterns and determines each company's level of sustainability integration, as outlined in the conceptual schema (Table 1, Section 3). This dual approach enables a deeper understanding of whether financial performance aligns with varying stages of ESG maturity—from symbolic disclosure to substantive operational practices.

5. Results and Discussion

The first stage of a comparative analysis was conducted on the 2019–2023 profitability indicators of selected Latvian manufacturing companies with sustainability reports, compared with industry averages based on NACE classification. Industry data were

sourced from the official statistics portal of the Republic of Latvia, using subsection-specific indicators to ensure accurate comparison with each company's sector (Tables 2 and 3).

Table 2. Average profitability indicators of the “manufacture of chemicals and chemical products” industry in 2019–2023, % (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia, 2025b](#)).

Industry Average	2019	2020	2021	2022	2023
CPBT (%)	1.71	8.05	7.06	4.48	5.85
CPAT (%)	1.67	7.93	6.86	4.32	5.61
EPBT (%)	1.94	9.20	9.62	7.16	8.81
EPAT (%)	1.89	9.06	9.34	6.90	8.45
FPBT (%)	4.68	19.99	18.94	12.86	14.57
FPAT (%)	4.57	19.69	18.39	12.38	13.97

Table 3. Average profitability indicators of AS MADARA COSMETICS in 2019–2023, % (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia \(2025d\)](#); [LURSOFT IT \(2020–2024b\)](#)).

AS MADARA COSMETICS	2019	2020	2021	2022	2023
CPBT (%)	14.09	22.92	20.20	9.29	10.72
CPAT (%)	14.09	22.16	18.38	6.87	8.95
EPBT (%)	14.88	28.40	24.95	10.23	12.39
EPAT (%)	14.88	27.47	22.69	7.56	10.34
FPBT (%)	17.14	32.37	28.37	11.77	14.51
FPAT (%)	17.14	31.30	25.80	8.70	12.11

The average profitability of AS MADARA COSMETICS ($M = 17.36$; $SD = 7.59$) is almost twice as high as the industry average ($M = 8.87$; $SD = 5.36$). The relatively high standard deviation of the company indicates higher fluctuations in its profitability, which may be due to the company's development dynamics and market fluctuations.

Levene's test ([Field, 2009](#)) ($p = 0.014 < 0.05$) indicates unequal variances between AS MADARA COSMETICS and the industry, so the T -test assumes unequal variances. The T -test result ($p < 0.001$) confirms a statistically significant difference, rejecting H_0 and confirming H_1 that MADARA COSMETICS significantly outperforms the industry average in profitability.

Beyond financials, the company's 2025 sustainability report details ESG practices, including energy use, CO₂ emissions, employee well-being, gender diversity, training, and governance measures like anti-corruption and supply chain transparency. These disclosures help assess the company's ESG maturity according to the conceptual integration stages (Table 1).

The sustainability indicators in Table 4, combined with AS MADARA COSMETICS's significantly above-average profitability (Table 5), suggest the company is in an advanced stage of sustainability integration. This supports the synergy hypothesis, which links effective ESG practices to long-term competitive advantage. According to the conceptual schema (Table 1), the company exhibits traits of stages 4–6, including concrete KPIs, internal metrics, and alignment with international standards. These elements indicate operationalization, institutionalization, and a cultural shift toward embedded sustainability values. The confirmed profitability advantage further reflects the final stage: measurable performance and impact.

Table 4. Sustainability indicators of AS MADARA COSMETICS, 2023–2024 (source: elaborated by the authors based on the data from [MADARA COSMETICS \(2025\)](#)).

ESG Indicators	2023	2024	Common Characteristics
Environmental Indicators			
Energy consumption	516 MWh	543 MWh	In its sustainability report, the company emphasizes the use of natural ingredients, eco-certifications, and green packaging
Total GHG emissions (CO ₂ e)	66.4 t CO ₂ e	69.4 t CO ₂ e	
CO ₂ e per EUR 100,000 turnover	0.31 t	0.30 t	
Water consumption	410 m ³	343 m ³	
Industrial waste generated	No data	22.9 tons	
% of industrial waste recycled	-	99.8%	
% recycled material in packaging	52%	51%	
Eco-certifications held	COSMOS/ECOCERT, ISO 22716 (ISO, 2017)		
Social Indicators			
Total employees	3.7% more than in 2024	207	The company created 6 new jobs and focused on employee safety and health; it maintained high standards in supply chain ethics and product safety
% women/men	No data	85% women/15% men	
Management board gender split	50% women/50% men	50% women/50% men	
(2 members)	(2 members)	(2 members)	
Supervisory board gender split	3 men/2 women	3 men/2 women	
New jobs created	No data	6	
Employee training hours (total)	No data	1438 h (~6.9 h per employee)	
Accidents reported	No data	0	
Employees in R&D projects	No data	13	
Governance Indicators			
Sustainability reporting standard	Not applicable	GRI standards (fully aligned)	The company highlighted their approach to stakeholder engagement and transparent reporting
Anti-corruption incidents	No data	0 (full compliance with ethics code)	
Social compliance	No data	SA8000 compliant (no violations)	
Product certifications	No data	ECOCERT, COSMOS, ISO 22716 (certified production)	

Table 5. Independent Levene’s test and sample *T*-test for profitability indicators of AS MADARA COSMETICS and the industry (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia \(2025d\)](#); [LURSOFT IT \(2020–2024b\)](#)).

Levene's Test for Equality of Variances		T-Test for Equality of Means								
	F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
					One-Sided <i>p</i>	Two-Sided <i>p</i>			Lower	Upper
Equal variances assumed	6.361	0.014	−5.01	58	<0.001	<0.001	−8.4907	1.69642	−11.886	−5.095
Equal variances not assumed			−5.01	52.133	<0.001	<0.001	−8.4907	1.69642	−11.895	−5.087

Interestingly, the data in Tables 6 and 7 also reveal an inverse pattern between the sector’s profitability and that of AS Latvijas Finieris. In the years when the industry achieved high profitability, the company’s results were notably lower, and vice versa. For instance, during 2021, when the sector reached its peak economic profitability (21.88%), AS Latvijas Finieris reported only 4.88%. Conversely, in 2023, when the sector experienced a sharp downturn (EPBT of 2.35%), the company’s profitability indicators improved significantly, reaching their highest levels over the five-year period (EPBT of 13.40%). This asynchronous trend may indicate structural peculiarities within the company, such as reliance on long-term contracts, delayed responsiveness to market changes, or internal constraints unrelated

to general market conditions. Additionally, the relatively low commercial activity in earlier years and the absence of updated ESG performance data beyond 2022 raise questions about the sustainability of the recent profitability spike. Without verifiable ESG impact metrics from 2023, it remains unclear whether the improvement stems from strategic transformation or short-term external factors, suggesting the need for a more transparent and consistent reporting approach.

Table 6. Average profitability indicators of the “manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials” industry in 2019–2023, % (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia \(2025a\)](#)).

Industry Average	2019	2020	2021	2022	2023
CPBT (%)	6.43	7.31	15.33	11.63	2.30
CPAT (%)	6.38	7.27	15.25	11.45	2.15
EPBT (%)	7.89	8.36	21.88	16.14	2.35
EPAT (%)	7.82	8.31	21.76	15.89	2.20
FPBT (%)	14.26	15.88	38.67	25.10	3.55
FPAT (%)	14.14	15.79	38.46	24.72	3.32

Table 7. Average profitability indicators of AS Latvijas Finieris in 2019–2023, % (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia \(2025d\)](#); [LURSOFT IT \(2020–2024a\)](#)).

AS Latvijas Finieris	2019	2020	2021	2022	2023
CPBT (%)	3.89	4.77	6.31	0.81	11.10
CPAT (%)	3.89	4.77	6.18	0.81	11.10
EPBT (%)	2.82	3.39	4.88	9.32	13.40
EPAT (%)	2.82	3.39	4.78	9.32	13.40
FPBT (%)	4.40	9.19	6.96	13.56	18.58
FPAT (%)	4.40	9.19	6.81	13.56	18.58

Levene’s test ($p = 0.007 < 0.05$) indicates unequal variances, so the T -test uses the “equal variances not assumed” method. The T -test result ($p = 0.008 < 0.05$) confirms a statistically significant difference between AS Latvijas Finieris’s and the industry’s average profitability, leading to the rejection of H_0 and confirming H_1 that AS Latvijas Finieris underperforms compared with the industry average.

Sustainability assessment is limited by the absence of recent ESG data in the company’s 2024 sustainability report ([Latvijas Finieris, 2025](#)), which only includes figures from 2022. In contrast to AS MADARA COSMETICS, which reports 2023–2024 ESG metrics, this lack of updated data raises concerns about transparency during the shift to ESRS-compliant reporting. Table 8 outlines selected ESG goals (e.g., E1, E4, E5, S1, S4, G1), but the missing time-series data weakens the ability to assess the company’s position within the sustainability integration framework.

The sustainability indicators in Table 8, alongside AS Latvijas Finieris’s significantly below-average profitability (Table 9), suggest a disconnect between stated ESG ambitions and measurable outcomes. While the 2024 goals—such as expanding Scope 3 tracking and boosting renewable energy use—indicate intent, the absence of 2023–2024 data hinders progress assessment. Unlike AS MADARA COSMETICS, which provides current ESG metrics, Latvijas Finieris’s report relies on 2022 data, weakening transparency and credibility.

Table 8. Sustainability indicators of AS Latvijas Finieris 2022 and 2024 (source: elaborated by the authors based on the data from [Latvijas Finieris \(2025\)](#)).

ESG Indicators	2022	2024 (Goals and Plans)	Common Characteristics
Environmental Indicators			
E1—Climate change: GHG emissions		Refine Scope 3 emissions calculations to include a broader range of indirect emissions across the value chain	
Scope 1	19,061.93 t CO ₂ e		
Scope 2	7265.65 t CO ₂ e	Increase the share of renewable energy usage across operations	
Scope 3 (limited categories)	26,327.97 t CO ₂ e	Continue assessing the carbon footprint of products with updated life cycle assessments (LCAs)	
Renewable energy use	55% of total energy consumption from renewable sources	Strengthen sustainable forest management practices and ensure continued 100% certified wood sourcing (FSC®/PEFC)	Greenhouse gas emissions reduction strategies
Energy intensity	1.26 MWh/m ³ of birch veneer.	Monitor and mitigate impacts on biodiversity with respect to EU Biodiversity Strategy 2030	Biodiversity preservation
E4—Biodiversity and ecosystems			
Certified wood supply	100% of wood raw material from controlled and verified sources No significant direct impact on protected habitats; all harvesting complies with national forest legislation and FSC® certification.		
Forest area impacted			
E5—Resource use and circular economy			
Water use	182,808 m ³ total water withdrawal	Develop more closed-loop material cycles in production (especially for water and chemicals)	
Waste	92% of wood raw material is used in production or energy generation High level of internal reuse and recycling of materials such as phenolic resins and process water	Enhance material efficiency in veneer and plywood production processes	
Recycling rate			
Social Indicators			
S1—Own workforce (e.g., employee engagement, safety culture):			
Employees	2433 persons	Improve occupational safety culture, aiming to further reduce injury rates	
Gender ratio	30.4% female, 69.6% male	Increase average training hours per employee, with a focus on digital skills and ESG awareness	Employee inclusion and training
Injury rate	4.9 injuries per 1 million working hours	Promote diversity and inclusion, though no gender targets are explicitly set for 2024	Consumer safety
Training hours	16.7 h of training per employee per year (on average)		
S4—Consumers and end-users:			
Product safety management	Formal product safety protocols aligned with REACH and ECHA guidelines Regular customer satisfaction surveys; net promoter score (NPS) not explicitly disclosed but monitored		
Customer satisfaction			
Governance Indicators			
G1—Business conduct:			
Board diversity	100% male (5 members); age range 40–65	Align internal policies with ESRS and CSRD (Corporate Sustainability Reporting Directive)	Cybersecurity practices
Code of conduct	Mandatory training for all employees	Continue annual risk assessments, including climate and cybersecurity	Governance responsibilities and sustainability strategy integration
Whistleblowing mechanism	Internal confidential system in place	Further develop the internal sustainability reporting system, integrating ESG KPIs into core business metrics	
Cybersecurity	Dedicated IT security systems and employee training, with annual risk assessments	Prepare for upcoming EU taxonomy alignment	
Sustainability oversight	Governance roles defined with responsibility for sustainability strategy and risk management		

According to the conceptual schema (Table 1), the company appears limited to early integration stages—Stage 1 (formal ESG reporting) and possibly Stage 2 (strategic formulation). Without recent performance data, it is unclear whether sustainability practices are operationalized. This aligns with [Novicka \(2024\)](#) concerns about ESG data immaturity in Latvian manufacturing, emphasizing the need for reliable metrics to transition from symbolic declarations to meaningful ESG integration.

Table 9. Levene’s test and independent sample *T*-test for profitability indicators of AS Latvijas Finieris and the industry (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia \(2025a\)](#); [LURSOFT IT \(2020–2024a\)](#)).

	Levene’s Test for Equality of Variances		T-Test for Equality of Means							
	F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
					One-Sided <i>p</i>	Two-Sided <i>p</i>			Lower	Upper
Equal variances assumed	7.823	0.007	2.807	58	0.003	0.007	5.520	1.967	1.584	9.457
Equal variances not assumed			2.807	42.633	0.004	0.008	5.520	1.967	1.553	9.487

In Tables 10 and 11, data on the average profitability indicators of the “Manufacture of non-metallic mineral products” industry in Latvia and the authors’ calculations on the profitability indicators of AS Valmiera Glass Grupa are provided.

Table 10. Average profitability indicators of the “manufacture of non-metallic mineral products” industry in 2019–2023, % (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia \(2025b\)](#)).

Industry Average	2019	2020	2021	2022	2023
CPBT (%)	9.17	7.55	8.65	6.33	8.84
CPAT (%)	8.99	6.67	7.73	5.93	7.76
EPBT (%)	8.35	6.75	8.32	7.05	8.55
EPAT (%)	8.18	5.96	7.43	6.61	7.50
FPBT (%)	18.70	13.77	15.20	12.22	14.09
FPAT (%)	18.32	12.17	13.58	11.45	12.37

Table 11. Average profitability indicators of AS Valmiera Glass Grupa in 2019–2023, % (source: elaborated by the authors based on the data from the [Central Statistical Bureau \(CSB\) of Latvia \(2025c\)](#); [LURSOFT IT \(2020–2024c\)](#)).

AS Valmiera Glass Grupa	2019	2020	2021	2022	2023
CPBT (%)	−0.44	−4.07	5.35	4.86	1.23
CPAT (%)	−0.45	−4.18	4.97	4.81	1.18
EPBT (%)	−0.40	−3.63	5.33	6.05	1.29
EPAT (%)	−0.42	−3.73	4.95	5.98	1.25
FPBT (%)	1.05	8.73	−31.53	48.03	8.64
FPAT (%)	1.08	8.95	−29.29	47.53	8.34

The industry’s average profitability is $M = 9.81$ ($SD = 3.55$), while the company’s average profitability is $M = 3.38$ ($SD = 15.17$). These results indicate much lower profitability of AS Valmiera Glass Grupa in comparison with the industry’s average, and very high standard deviation for the company (15.17), indicating a large fluctuation in profitability indicators.

Levene’s test ($p = 0.023 < 0.05$) indicates unequal variances between AS Valmiera Glass Grupa’s and the industry’s average profitability indicators. Therefore, the *T*-test was interpreted using the “equal variances not assumed” method. The *T*-test result ($p = 0.031 < 0.05$) confirms a statistically significant difference, rejecting H_0 and confirming H_1 that AS Valmiera Glass Grupa underperforms compared with the industry average.

The company’s sustainability reporting, based on its 2021 sustainability report (Valmiera Glass, 2021) and 2024 sustainability policy (Valmiera Glass Grupa, 2024), reflects a formal ESG commitment but lacks updated performance data. While it outlines goals like CO₂ neutrality by 2031 and technological upgrades, these remain strategic visions rather than measurable achievements. The absence of quantitative ESG metrics and recent data weakens the ability to assess the company’s sustainability integration stage. Compared with peers like AS MADARA COSMETICS that provide regular detailed ESG disclosures, AS Valmiera Glass Grupa appears limited to Stage 1 (formal ESG reporting) or possibly Stage 2 (strategic formulation), with little evidence of operational or cultural embedding. This limits any validation of the synergy hypothesis and raises concerns about symbolic compliance, especially in light of its underperformance in profitability (Table 12). To move forward, the company must adopt transparent data-driven reporting that demonstrates actual progress.

Table 12. Levene’s test and independent sample *T*-test for the profitability indicators of AS Valmiera Glass Grupa and the industry (source: elaborated by the authors based on the data from the Central Statistical Bureau (CSB) of Latvia (2025b); LURSOFT IT (2020–2024c)).

	Levene’s Test for Equality of Variances		T-Test for Equality of Means							
	F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
					One-Sided <i>p</i>	Two-Sided <i>p</i>			Lower	Upper
Equal variances assumed	5.457	0.023	2.259	58	0.014	0.028	6.424	2.844	0.7318	12.117
Equal variances not assumed			2.259	32.164	0.015	0.031	6.424	2.844	0.633	12.216

The findings support the modern perspective on sustainability and profitability, i.e., companies must address both financial and non-financial aspects to create long-term value. ESG is not merely a cost center but a strategic necessity (Gartia et al., 2024). Financial and non-financial indicators—such as reputation, employee satisfaction, innovation, and customer loyalty—are essential to assessing both economic performance and ESG outcomes (Gil-Marín et al., 2022; Sledzik, 2013; Titko & Shina, 2017). Sustainable value creation increasingly depends on integrating these dimensions into core business strategy.

6. Conclusions and Policy Recommendations

This study explored the relationship between sustainability integration and financial performance in Latvia’s manufacturing sector using a mixed-method approach tailored to the limitations of the local context. Due to the fragmented nature of ESG disclosures and the absence of standardized quantifiable sustainability data across companies, an econometric model was not feasible. This methodological limitation was acknowledged and transparently addressed in the study design. The chosen approach prioritizes empirical validity within the constraints of data availability, offering a feasible alternative while clearly stating its scope.

This study employed a two-stage methodology: first, a statistical comparison of profitability indicators between three major manufacturing companies and their respective industry averages; and, second, a qualitative assessment of each company’s ESG maturity based on a six-stage conceptual schema. While we recognize that this approach does not offer the robustness of full econometric modeling, it provides a structured and contextually appropriate framework for exploring the research question given the available data.

The chosen methodological framework enabled a grounded evaluation of whether companies demonstrating deeper ESG integration also tend to financially outperform their peers. While the analysis does not claim to establish causality, it offers valuable insights into how the strategic internalization of sustainability practices correlates with business outcomes in a post-transition economy marked by limited institutional readiness and resource constraints.

The first analyzed company—AS MADARA COSMETICS—not only demonstrated significantly higher profitability than its industry peers but also exhibited mature ESG integration across operational, cultural, and strategic levels. This underscores the potential for sustainability to serve as a long-term value driver when embedded into core business functions.

Conversely, AS Latvijas Finieris and AS Valmiera Glass Grupa lagged behind in both profitability and ESG maturity. Their sustainability disclosures are either outdated or lack key performance indicators, indicating a focus on formal compliance rather than substantive integration. These cases highlight the risks of symbolic ESG engagement, particularly as regulatory and stakeholder expectations intensify.

The practical implications of these findings are particularly relevant for companies, regulators, investors, and policymakers in Latvia and similar post-transition economies. For companies, the results suggest that proactive credible ESG integration can be a source of competitive advantage, not merely a cost. For investors, mature ESG practices can serve as a signal of governance quality and lower risk. For regulators and policymakers, this study provides empirical evidence that supports the case for more robust sustainability standards and a national-level ESG infrastructure.

To enhance the effectiveness and accountability of sustainability practices in Latvia's industrial sector, the following policy recommendations are proposed: (1) require companies, especially those benefiting from public funding or participating in regulated markets, to disclose performance-based ESG indicators not just strategic goals; (2) create a national ESG data infrastructure, including digital platforms to facilitate standardized, auditable, and comparable disclosures across sectors; (3) introduce targeted financial incentives—such as tax relief or green funding programs—for companies that demonstrate verifiable ESG outcomes through embedded practices; (4) support sector-specific capacity-building initiatives to especially help medium-sized manufacturing firms integrate ESG into their strategic planning and operations, including training, benchmarking tools, and ESG partnerships; (5) strengthen regulatory oversight by aligning Latvian reporting requirements with upcoming EU directives (CSRD, ESRS), including mandatory third-party audits for large enterprises.

In conclusion, ESG should be treated not as a formal reporting duty but as a shared strategic responsibility. Companies must embed sustainability into their operations, investors must reward transparent and verifiable ESG performance, and public institutions must provide the regulatory and infrastructural support necessary for the sustainable transformation of the industrial economy. This tri-sectoral approach will be key to ensuring long-term resilience, legitimacy, and competitiveness in the Latvian manufacturing sector.

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