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The Influencing Factors Behind Green Investments in the Dutch Manufacturing Sector:

A Comparison Based on Investment Type and Company Size

Master Thesis, Msc, Sustainable Entrepreneurship

June 5, 2025

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Abstract

This research investigates which factors influence Green Investments in Dutch manufacturing companies, with particular attention to differences across company sizes and investment types. Grounded in the Institutional Theory, six influencing factors were examined: *Legislation & Regulation, Public Funding & Government Subsidies*, *Market & Stakeholder Behaviour*, *Reputational Considerations*, *Efficiency Gains*, and *Financial Performance*. A qualitative research design was used, combining six semi-structured interviews with small, medium-sized, and large manufacturing companies and a report analysis of three large companies. The findings show that *Financial Performance* and *Market & Stakeholder Behaviour* are the most influential factors overall, reflecting strong *mimetic* and *normative pressures*. In contrast, *Legislation & Regulation* and *Public Funding & Government Subsidies* played a surprisingly minor role, indicating a weak *coercive pressure* from government. Differences were found between investment types: Renewable Energy projects were primarily driven by *Market and Stakeholder Behaviour*, while Waste Management was mostly motivated by *Financial Performance*. Similarly, differences emerged across company sizes: small companies acted mainly on cost-saving motives – reflecting strong *mimetic pressures*, while medium and large companies were more influenced by external expectations – reflecting *normative pressures*. The research concludes that Green Investments are less the result of policy pressure and more a response to market dynamics and perceived financial gains. This highlights the importance of aligning sustainability efforts with economic incentives.

Content

1. Introduction

1.1 Context

Sustainability is under pressure as economic activities exceed the ecological limits, leading to a fragile and unequal world (Hummels & Argyrou, 2020). Six of the nine planetary boundaries, such as climate change and freshwater use, have been crossed – with climate change posing irreversible risks (Richardson et al., 2023). This unsustainable path began with the Industrial Revolution, which spurred growth while ignoring environmental and social costs (Young et al., 1997; Hummels & Argyrou, 2020). Consumer goods with short product lifespans drive this economic growth through environmental exploitation (Bocken & Short, 2021), in which the manufacturing sector plays a central role.

The manufacturing sector transforms raw materials into products through diverse processes and technologies. It operates in a competitive, fast-changing environment (Hanai et al., 2001) and is a major energy consumer and polluter (Židonienė, 2016). In Europe, the manufacturing sector is the second-largest source of greenhouse gas emissions after households, accounting for 19.4% of total emissions in Q4 2024 — surpassing the electricity and gas supply sector (18.0%) (Eurostat, 2024). Moreover, the manufacturing sector plays a significant role in driving the emissions in the energy sector, especially in energy-intensive industries (Panagiotopoulou et al., 2021). Manufacturers now face increasing pressure from governments and consumers to manage resources responsibly and balance environmental and social goals (Hankammer et al., 2019).

In response to these challenges, the Netherlands' 2019 Climate Agreement (Rijksoverheid, 2019) sets concrete targets for a more sustainable manufacturing sector. By 2030, the sector is expected to reduce CO_2 emissions by 14.3 megatons compared to 1990 levels, marking a key intermediate milestone. By 2050, the goal is to become nearly emission-free and fully circular, powered by renewable sources such as solar, wind, and hydrogen, with waste reused as valuable raw materials.

At the same time, consumers and stakeholders are becoming more aware of environmental issues and increasingly prefer sustainable products and services (Lyulyov et al., 2023). This shift pressures suppliers to improve their green practices, as consumers move away from the linear 'take, use, dispose' model toward more circular consumption (Yen, 2018; Aboulamer, 2017).

Despite growing pressure, many businesses still lack a modern sustainability perspective: one that embeds long-term environmental, social, and economic responsibility into core strategies (De Jong, 2023). Substantial investments are therefore needed to drive sustainable innovation. Green Investments channel resources toward environmental and social goals, promoting development that balances profit with responsibility (Han et al., 2020). A bibliometric and systematic review by Chițimiea et al., (2021) found that these Green Investments are influenced by various factors, such as regulations, market and stakeholder behaviour, and financial performance.

In the manufacturing sector, there are various types of Green Investments. Currently, the focus in the Netherlands is on decarbonization, energy efficiency, and circularity, aligning with the 2019 Climate Agreement (Rijksoverheid, 2019). Priorities include Renewable Energy, electrification, and Waste Management such as resource circularity and waste reduction. Investments in Renewable Energy have increased significantly worldwide over the past decade (Eyraud et al., 2013). This shift is essential to reduce greenhouse gas emissions and lower the environmental footprint of energy production. Renewable Energy sources are solar, wind, geothermal heat, hydrogen, and biogas (Demirbaş, 2006). Waste Management is another priority and involves the collection, transport, processing, and disposal of waste. Investing in prevention, recycling, reuse, and resource recovery helps reduce landfill use, and conserve resources (Wan et al., 2019). The scale (i.e., financial and technical scope) of Green Investments often depends on company characteristics, with size being a key factor (Haller & Murphy, 2011). Larger companies typically have more resources and greater environmental impact, making them more likely to invest in pollution control and cleaner technologies than medium and small companies (Chariri et al., 2018; Siedschlag & Yan, 2021).

1.2 Research Gap, Question, and Objectives

This research addresses a gap in the literature by exploring the main factors influencing Green Investments (Chițimiea et al., 2021) in the Dutch manufacturing sector, and how their influence varies with company size and investment type. Although Chițimiea et al. (2021) identify relevant factors, they do not determine which are most influential. While prior studies show that company size positively affects both the likelihood and scale of such investments (Siedschlag & Yan, 2021; Chariri et al., 2018; Haller & Murphy, 2011), there remains limited insight into which factors are the most influential, how this differs by company size, and whether different types of Green Investments (e.g., Renewable Energy vs. Waste Management) are influenced by different factors.

The guiding research question for this research is: *What are the main factors that influence Green Investments in companies of different sizes in the Dutch manufacturing sector?* To address this question, the research will pursue three objectives:

1. **Identify the most and least influential factors for Green Investments across companies.** This objective assesses which factors, on average, have the strongest and weakest influence on Green Investment decisions, regardless of company size and type of investment.
2. **Examine whether different types of Green Investments have distinct influencing factors.** This objective investigates whether the influencing factors vary between investments in Renewable Energy and Waste Management.
3. **Compare how the influence of the factors varies across companies of different sizes.** This objective examines whether the impact of the factors influencing Green Investments differs between small, medium and large companies.

2. Theoretical Framework

2.1 Defining Green Investments

Inderst et al. (2012) define an ‘investment’ as the act of committing money or capital to a venture with the expectation of earning a return or profit, while 'green' is commonly associated with climate change mitigation or adaptation. Green Investments are defined as efforts to reduce environmental harm, particularly greenhouse gas emissions, while maintaining economic activity (Eyraud et al., 2013; Chariri et al., 2018). These include actions to cut energy use, lower emissions, and reduce waste, which can enhance both reputation and competitiveness of the company. Ren et al. (2021) describe Green Investments more specifically as internal investments in equipment, technology, materials, and services aimed at improving environmental performance and reducing risks.

Building on existing definitions and literature, this research defines Green Investments as financial commitments made by companies in equipment, technology, materials, and purchased services focused on decarbonization (i.e. cleaner energy and electrification of processes), energy efficiency, and resource circularity (i.e. minimizing waste by reusing, recycling, and recovering). This research primarily focuses on investments in Renewable Energy, such as solar, wind, and hydrogen systems (Demirbaş, 2006), and Waste Management technologies, including recycling, resource recovery, and waste reduction (Wan et al., 2019).

2.2 Institutional Theory

This research is grounded in the Institutional Theory (DiMaggio & Powell, 1983), which examines how organizational decisions are shaped by regulations, societal expectations and professional norms, and peer imitation (Pinto, 2017). The Institutional Theory as outlined by DiMaggio and Powell (1983), identifies three mechanisms of institutional isomorphic change (i.e., becoming more similar): *coercive*, *normative* and *mimetic pressure*. While the Institutional Theory often focuses on isomorphism, this research uses its three pressure mechanisms to categorize the different factors that influence Green Investments.

2.2.1 Coercive Pressure

Coercive pressures force organizations to adopt certain practices due to external factors like regulations, industry requirements, or financial dependencies (DiMaggio & Powell, 1983). These pressures can be direct, such as legal mandates or regulations enforced by the government (Nevitt, 2020), or quasi-direct, involving a strong influence from powerful non-governmental actors such major clients or shareholders, who can make sustainability demands a condition for financing or continued business relationships (Pimonenko et al., 2020). Government regulations, especially in sustainability, play a major role (Stoever & Weche, 2017). Companies must comply with environmental laws. For instance, in the Dutch manufacturing sector, companies must cut 14.3 megatons of CO_2 by 2030 (Rijksoverheid, 2019). Ultimately, *coercive pressures* make sustainability a necessity rather than a choice.

2.2.2 Normative Pressure

Normative pressures arise from professionalization, education, and industry standards, indirectly influencing how organizations adopt practices to align with accepted norms. These pressures come from the market, professional networks, trade associations, and educational institutions that shape expectations about what is considered legitimate within a field (DiMaggio & Powell, 1983). The professionalization of sustainability creates shared (market or industry) norms that make Green Investments a standard part of business strategy (Lyulyov et al., 2023). Companies seeking legitimacy often align with these norms to maintain their status among peers and stakeholders (Zein et al., 2019).

2.2.3 Mimetic Pressure

Mimetic pressures occur when organizations adopt practices due to uncertainty or a need for legitimacy (DiMaggio & Powell, 1983). In unclear regulatory or market conditions, companies look to peers or industry leaders for guidance, often imitating proven strategies. Uncertainty drives this imitation, especially when the link between Green Investments and financial returns is unclear (Bocken & Geradts, 2019; Kim & Lee, 2018). Companies model their investments after competitors to maintain credibility, stay competitive, attract customers, or secure funding. *Mimetic pressures* foster the alignment of corporate sustainability strategies as companies mirror perceived leaders.

2.3 Influencing Factors of Green Investments

Chițimiea et al. (2021) note a growing corporate interest in Green Investments since 2015, driven by resource efficiency and environmental concerns. In their bibliometric and systematic review, they identify multiple factors influencing Green Investments. This research focuses on a selected set of those factors. Unlike Chițimiea et al. (2021), who did not apply the Institutional Theory, this research uniquely analyses the factors through the lens of the Institutional Theory's three mechanisms (see table 1).

2.3.1 Legislations & Regulations

Legislation & regulations are legally binding rules set by governments to enforce environmental and economic standards (Nevitt, 2020). As climate policies tighten globally, companies are increasingly compelled to invest in green initiatives to meet legal obligations and demonstrate social responsibility (Li et al., 2020; Han et al., 2020). Stoever and Weche (2017) found that environmental regulations led companies to shift their investment strategies – reducing short-term measures in favour of long-term, integrated environmental improvements.

Legislation & Regulation reflect a *coercive pressure* within the Institutional Theory (DiMaggio & Powell, 1983), where external forces compel companies to conform. In this context, mandatory climate policies force companies to adopt Green Investments to meet legal and societal expectations.

2.3.2 Public Financing & Government Subsidies

Public Financing refers to government funding that supports sustainable practices, while *Government Subsidies* are financial incentives that lower the cost of Green Investments (Tvedt & Wergeland, 2023). As companies often prioritize profit, governments use tools like green loans and subsidies to reduce the financial barriers (Dang, 2020). These incentives make green innovation more viable, with studies showing that more subsidies lead to greater investment (Li et al., 2018; Dang, 2020).

These financial mechanisms represent a *coercive pressure* under the Institutional Theory (DiMaggio & Powell, 1983), as they push companies to align with sustainability goals through external incentives.

Table 1. *Institutional Theory and Influencing Factors*

Related Pressure, Institutional Theory (DiMaggio & Powell, 1983)	Influencing Factor in Green Investments (Chițimiea et al. 2021)	Theoretical Link
Coercive Pressure - *Direct / Quasi-direct Compliance Based Green Investments* Organizations conform due to direct legal and political pressures from governments, regulatory bodies, or external entities that impose quasi-direct rules and sanctions.	Legislations & Regulations	Government-imposed environmental laws force companies to adopt Waste Management systems and invest in Renewable Energy.
	Public Financing & Government Subsidies	Financial incentives act as an indirect coercive mechanism, making Green Investments financially viable and encouraging compliance. Companies must comply with waste reduction and clean energy regulations to access government incentives. State influence creates formalized expectations, which matches how subsidies drive businesses to adopt sustainability.
	(Quasi-direct) Stakeholder Behaviour	Powerful clients, shareholders and supply chain partners increasingly demand corporate commitment to waste reduction and Renewable Energy adoption creating coercive pressure that compels companies to comply with external expectations to maintain access to funding, contracts, and market position.

Normative Pressure - *Indirect / Socially Driven Standard Adoption Green Investments* *Organizations conform due to professional norms, industry standards, and stakeholder expectations, often driven by education, professionalization, and social legitimacy.*	Market & (indirect) Stakeholder Behaviour	Companies follow industry trends and professional norms, where Waste Management best practices and Renewable Energy adoption become the expected standard, and align with market and customer expectations from companies.
	Reputational Considerations	companies adopt waste reduction initiatives and commit to Renewable Energy use to align with evolving professional norms and societal expectations. This reflects normative pressure, where companies pursue sustainable practices to meet accepted standards of responsible behaviour and maintain legitimacy.
Mimetic Pressure – Indirect / Uncertainty-Driven Competitive Green Investments *Organizations imitate others, especially in times of uncertainty, because they assume that established companies' strategies are successful and legitimate.*	Efficiency Gains	Many industries see Green Investments as best practice (e.g., energy-efficient production, circular economy), reflecting mimetic pressure as companies imitate successful peers to reduce uncertainty and maintain legitimacy.
	Financial Performance	Companies invest in waste reduction technologies (e.g., material recovery innovations) and Renewable Energy projects (e.g., on-site solar panels) after observing financial benefits in industry leaders.

2.3.3 Market & Stakeholder Behavior

The global shift toward green growth is reshaping market structures. *Market Behaviour* refers to the competitive environment, including demand for sustainable products and competitive pressure to adopt green technologies (Lyulyov et al., 2023). Simultaneously, *Stakeholders* (consumers, shareholders, regulators, and employees) are becoming more environmentally conscious and are increasingly unwilling to engage with companies that neglect sustainability, pressuring companies to become more sustainable (Pimonenko et al., 2020). As *Market & Stakeholder behaviour* shifts, companies increasingly recognize the need to adapt or risk losing their competitive edge (Aboulamer, 2017). Green practices are being adopted in response to rising institutional and stakeholder pressures, including public concern and market expectations (Yen, 2018).

In this research, *Market & Stakeholder Behaviour* are combined into one factor, as market trends often shape stakeholder expectations. But, within the Institutional Theory (DiMaggio & Powell, 1983), this factor can take different forms. *Market & Stakeholder Behaviour* is an indirect form of influence, reflecting competitive norms and societal expectations — which aligns with a *normative pressure*. However, *Stakeholder Behaviour* can also take on a quasi-direct form of influence when powerful clients or shareholders force companies to adopt sustainable practices through non-governmental pressure – reflecting a *coercive pressure*.

2.3.4 Reputational Considerations

The reputation, social image, and trust of companies play a crucial role in shaping their business strategies (Palma-Ruiz et al., 2020). *Reputational Conciderations* refers to how a company is perceived by its stakeholders based on its past actions, behaviours, and overall image. Reputation is shaped not only by a company's own actions but also by industry and market norms, and stakeholder expectations (McDonald et al., 2022). Strong sustainability practices can enhance corporate reputation, as stakeholders increasingly value environmental and social commitment (Zein et al., 2019). This boosts trust and stakeholder acceptance, with studies showing that sustainability often precedes and strengthens reputation (Gomez-Trujillo, 2019), motivating companies to invest.

In the Institutional Theory (DiMaggio & Powell, 1983), *Reputational Considerations* reflect a *normative pressure*, arising from societal and professional expectations. Companies adopt Green Investments to maintain or improve their image and align with norms of responsible corporate behaviour.

2.3.5 Efficiency Gains

Efficiency Gains refers to the optimal use of resources (energy, natural, material, and informational) to minimize waste and environmental impact while maximizing output (Schilirò, 2019). Sustainability depends on efficiency and innovation to create economically, socially, and environmentally viable solutions, driven by technologies like Renewable Energy and resource use reduction (Tang et al., 2024).

Sustainability and Green Investments are not only ethically necessary but also economically strategic (Hart & Milstein, 2003). By addressing inefficiencies, businesses reduce costs, mitigate risks, and unlock innovation opportunities. These gains create a positive feedback loop — encouraging further investment in green solutions and strengthening long-term competitiveness and sustainability (Porter & Kramer, 2011).

The pursuit of *Efficiency Gains* reflects a *mimetic pressure* in the Institutional Theory (DiMaggio & Powell, 1983), as companies in uncertain contexts imitate peers by adopting energy- and resource-efficient practices to gain economic benefits and maintain legitimacy.

2.3.6 Financial Performance

Financial Performance refers to the motivation for companies to invest in sustainable practices and technologies to improve their financial outcomes and is closely intertwined with *Efficiency Gains.* Green Investments can lower supply chain costs (Ghosh et al., 2020) and improve *Financial Performance*. Studies show a positive link between Green Investments and financial returns, reflected in stock performance and company-level data (Chariri et al., 2018). Perceived financial gains motivate companies to prioritize Green Investments (Kim & Lee, 2018). Seeing peers benefit financially from sustainability efforts reinforces the drive to invest in green innovations.

Within the Institutional Theory (DiMaggio & Powell, 1983), *Financial Performance* is tied to a *mimetic pressure*. Companies often imitate successful peers who benefit financially from Green Investments, aiming to improve their own financial outcomes, stay competitive, and maintain legitimacy.

2.4 Company Size

Company size significantly shapes Green Investment behaviour. Larger companies face more public scrutiny, increasing the pressure to act sustainably (Haller & Murphy, 2012). With better resources and efficiency, they can more easily commit to sustainability initiatives. Studies show that large companies invest more in pollution control and cleaner technologies than small and medium-sized companies (Haller & Murphy, 2012; Siedschlag & Yan, 2021). Chariri and Ghozali (2021) further confirm that company size significantly influences Green Investments due to greater stakeholder concern – as large companies' environmental choices often have broader societal impact, reinforcing their responsibility to lead in sustainable practices.

3. Methodology

3.1 Methodological Approach

This research used a qualitative approach to explore the main factors influencing Green Investments and how their influence varies by company size and investment type. This design enables in-depth insight into how companies perceive and respond to these factors (Creswell, 2014).

3.2 Data Collection

3.2.1 Primary Data Sources

This research used interviews as the primary data collection method. One representative per company was interviewed (see table 2). All six interviews were conducted virtually via Google Meet. This research has used semi-structured interviews (see appendix A) to explore predefined topics, while allowing participants to share their own perspectives. The questions focused on Green Investments made in the past five years — particularly in Renewable Energy or Waste Management — and explored how each factor (Chițimiea et al. 2021) influenced the decision-making process.

Table 2. *Overview of participating companies in interviews and type of investment*

Company	Sector	Employed	Interviewee	Investment
Small A	Wooden stairs and window frames	3–5	Co-owner	RE & WM
Small B	Woodworking machine manufacturer	11–50	Managing Director	Other
Medium A	Syntethic window frames	51–200	ESG Manager	RE & WM
Medium B	Industrial automation	51–200	Managing Director	RE (2x)
Large A	Sustainable office furniture	251–500	Chief Sustainability Officer	RE & WM
Large B	Sustainable office furniture	1.000–5.000	Manager Sustainability & ESG	Other & WM

*Note: Each interview discussed **one** investment in Renewable Energy (RE) and one in Waste Management (WM), unless indicated otherwise. '2×' means two investments were discussed within the same category. 'Other' refers to relevant sustainable behaviour outside the core investment areas of this research.*

Each interview lasted 30–45 minutes and began with a brief introduction of the participant's role and the company's production process, focusing on energy use and Waste Management. Participants were asked to provide one recent Green Investment in both Renewable Energy and Waste Management. Only investments made within the Netherlands were considered. For each investment, the six factors were discussed, followed by any additional factors or challenges. The interview concluded by identifying the most and least influential factors and asking how the most or least important factor could be strengthened to encourage further Green Investments. All interviews were recorded and transcribed with consent (see appendix B).

3.2.2 Sampling and Participants

This research focused on Dutch manufacturing companies. Although the aim was to include at least nine companies, only six agreed to participate after reaching out to nearly 50 companies. The sample includes two small, two medium-sized, and two large companies, classified by the European Commission's (2020) criteria to allow for comparison across company sizes (see table 2). The original scope focused on building materials and furniture sectors, but was broadened due to the low response rates, allowing inclusion of other manufacturing companies with production sites in the Netherlands. This ensured sufficient data and a more diverse view on Green Investments.

Companies were selected through personal networks, online searches (e.g., Google, sector platforms), and outreach via associations such as NPAL (Noordelijke Productiviteitsalliantie), focusing on Dutch manufacturing companies active in sustainability. Potential candidates were screened by reviewing their websites, LinkedIn pages, and posts or blogs for signs of sustainable activity, specifically references to Renewable Energy (e.g., solar panels) or Waste Management initiatives. Only when such references were found, companies were contacted via LinkedIn or email.

3.2.3 Secondary Data Sources

This research also made use of secondary data sources. Academic literature was used to build the theoretical framework, support the identification and interpretation of relevant factors, and form the basis for the research questions. The Institutional Theory (Scott, 1983) framed organizational behaviour, and Chițimiea et al. (2021) guided the

factor selection. Academic literature was gathered via databases like Google Scholar, Scopus, and ScienceDirect, with keywords including *green investments*, *sustainable investments*, *factors influencing green investments*, *institutional theory*, and *sustainable manufacturing*.

After the interviews, an additional report analysis was conducted using 2023 sustainability and annual reports from three large Dutch manufacturing companies: Philips (Annual Report, 2023; Climate Resilience and ESG Overview, 2023), Auping (Annual Report, 2023; Impact Report, 2023), and VDL Groep (Annual Report, 2023), as shown in table 3. The three large Dutch manufacturing companies were selected based on their active sustainability engagement. Philips ranks high in ESG rankings like Sustainalytics and the Dow Jones Sustainability Index, Auping holds B Corp certification and promotes circularity, and VDL sets clear targets for emissions and circular production. They represent different sectors and offer insight into how large companies approach Green Investments.

The reports were collected from each company's official website and reviewed using a keyword search, based on the six factors. Keywords included *regulation*, *subsidy*, *cost saving*, *efficiency*, *reputation*, *stakeholder expectation*, and *market trends*. This analysis complements the interviews with large companies by showing how factors are publicly communicated and framed. Their prominence in reports may indicate the perceived importance, allowing comparison with how they were described and prioritised in the interviews.

Table 3. *Overview of companies used for report analysis*

Company	Sector	Employees	Documents
Philips	Health Technology	10,000+	Annual Report 2023 & Climate Resilience and ESG Overview 2023
Auping	Bedroom Furniture	201–500	Annual Report 2023 & Impact Report 2023
VDL Groep	Industrial Products	10,000+	Annual Report 2023

3.3 Data Analysis

3.3.1 Interview Data

The interview data were analysed using a thematic analysis. A combined deductive–inductive approach was used. The data were organized and coded iteratively in ATLAS.ti, following the main phases of thematic analysis: familiarization, coding, theme development, and refinement (Byrne, 2021).

Initial themes were based on existing literature and on the research question, such as *cost savings*, *stakeholder with power*, *market demand*, and *image improving*. The analysis remained open to new themes emerging from the data to capture unanticipated insights. To support comparison, a rating system was applied to each investment and factor. Based on participants' responses, each factor was scored by me during the data analysis on a scale from 1 (least important) to 5 (most important), with 3 as neutral. Scores were assigned by interpreting how participants described the factor, including the language used and the importance implied in examples or statements. During the interview, participants were explicitly asked to identify the most and least important factor per investment type. When they did so, a +0.5 or –0.5 adjustment was added to the original score to reflect the additional emphasis placed on that factor.

3.3.2 Report Analysis

For the report analysis, sustainability and annual reports were uploaded into ATLAS.ti, where a similar analytical process was applied as for the interview data. However, a simplified coding structure was used. Each segment was coded directly according to one of the six predefined factors (e.g. *Reputation Considerations*, *Financial Performance*). Whenever a passage referred to a relevant motivation or framing, the corresponding factor code was applied. The analysis focused on identifying which factors were mentioned most frequently and how they were framed in the reports. For example, some companies framed their sustainability efforts as a response to growing or changing client demand — reflecting *Market & Stakeholder Behaviour* — or consistently mentioned the *Efficiency Gains* achievable through Green Investments.

3.4 Limitations

Scoring within a qualitative framework presents certain challenges, as participants may prioritise factors differently depending on their role, company context, or level of sustainability maturity. Moreover, assigning scores from 1 to 5 involves the researchers' interpretation, which introduces a degree of subjectivity that must be acknowledged as a limitation of the analysis. To address this challenge, the research focused on recurring patterns in how participants evaluated each factor. During the interviews, follow-up questions encouraged them to explain their reasoning, and participants were also asked to identify the most and least important factors. This approach balances the search for common themes with awareness of company-specific contexts.

In addition, the report analysis of sustainability and annual reports must be interpreted with caution. These reports are not primarily designed to disclose Green Investments or their underlying motivations, and they may reflect selective framing. As a result, the analysis is subject to interpretation bias, and the insights drawn from these reports should be seen as indicative rather than comprehensive.

3.5 Ethical Considerations

All participants provided informed consent and received an information sheet based on CF-RUG templates prior to the interviews. Confidentiality was ensured through anonymisation, and participants retained the right to withdraw at any time. This research adhered to the ethical guidelines developed by the Campus Fryslân Ethics Committee, including data protection and secure storage, with all recordings anonymised.

4. Results

4.1 Empirical Findings from the Interviews

4.1.1 Cross-case Overview of Factor Influence

This section presents the perceived importance of each factor based on the qualitative coding of the six interviews, covering eleven investments of which five in Renewable Energy and four in Waste Management (see Table 2). Figure 1 displays the average importance scores (1 = low, 5 = high). *Financial Performance* (4.0) and *Market & Stakeholder Behaviour* (3.8) were the most influential, while *Public Financing & Government Subsidies* (1.5) and *Legislation & Regulations* (1.9) scored lowest. *Reputational Considerations* (2.4) and *Efficiency Gains* (3.3) showed moderate influence. Justifications and illustrative quotes are provided in appendix C.

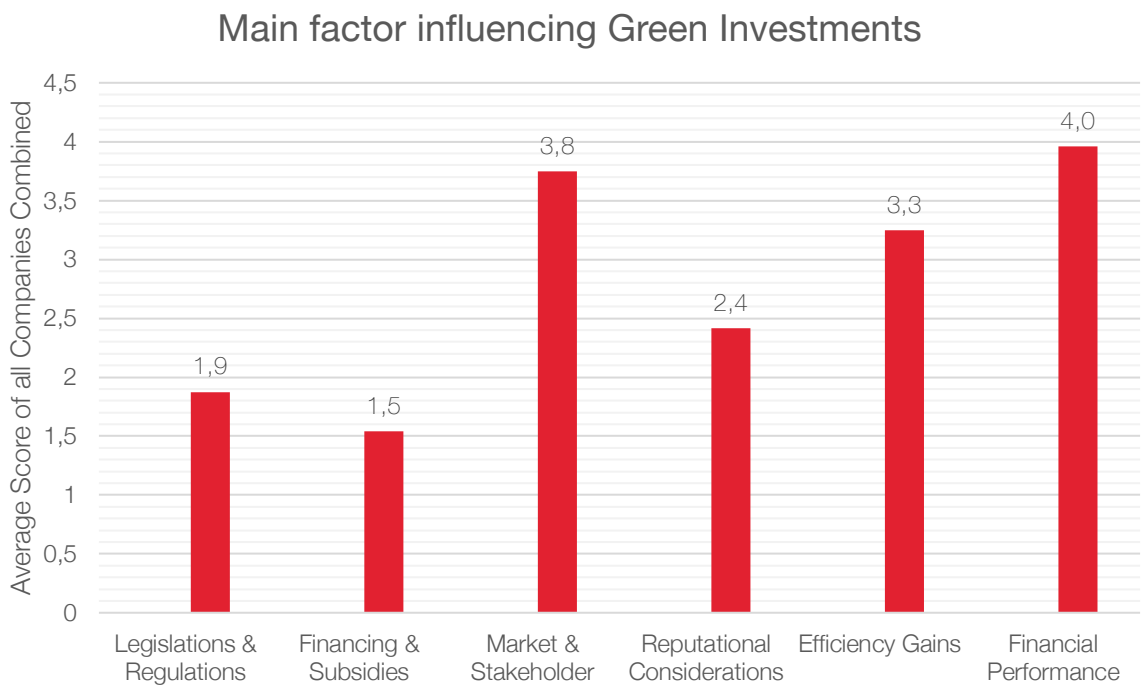

Figure 1. *Average Perceived Importance of Factors Influencing Green Investments*

Most influential factors. *Financial Performance* emerged as the most influential factor, with an average importance score of 4.0. Across nearly all interviews, it was described as a main influence for Green Investments. Companies referred to both short- and long-term cost savings, return on investment, and improved financial stability.

In some cases, additional revenue streams or broader value creation were also mentioned. Financial motives also surfaced when discussing other factors. For instance, *Efficiency Gains* were often framed in financial terms — particularly in relation to energy savings and reduced operational costs.

Market & Stakeholder Behaviour was the second most influential factor, with an average score of 3.8. Several companies pointed to changing market demand and shifting customer expectations as major influences for Green Investments. In addition, many described a tendency to follow sustainability trends within their sector. Some also experienced a quasi-direct stakeholder pressure from powerful clients or shareholders who demanded environmental improvements — sometimes making continued collaboration dependent on sustainable action.

> *"Some major clients are particularly fierce about this. They say: 'Do you want to keep us as a partner? Then you must start becoming more sustainable now.'"*

Least influential factors. *Public Financing & Government Subsidies* was the least influential factor with an average score of 1.5. It was rarely mentioned, and when discussed they referred to specific government support schemes for Renewable Energy or innovative projects. However, these were not seen as decisive, but rather as supportive tools once the investment decision was already made.

Legislation & Regulations also played a relatively minor role, with an average score of 1.9. When mentioned, it involved anticipation of future regulations, local governmental pressure, or compliance with standards like the CSRD. However, regulations were not viewed as direct investment triggers. Some companies even saw them as limiting and described them as inconsistent, outdated, or obstructive. While certain obligations may have required small-scale actions, they were not seen as strong influences of broader strategic decisions.

> *"The rules tend to change frequently, and what the government now mandates often lags what companies have already been doing for years. Legislations seems to be designed for the lowest performers, so it doesn't really push us to act."*

Moderately influential factors. *Reputational Considerations* and *Efficiency Gains* had a moderate influence, with average scores falling between the most and least important factors. Some companies viewed *Reputational Considerations* such as setting an industry example or gaining a competitive edge as particularly relevant. For one it was even decisive, while most considered it as less important. *Efficiency Gains* were perceived as a secondary rather than primary factor. They were typically described as positive side effects such as improved energy efficiency, process optimization, or reduced waste and CO_2 emissions. *Financial Performance* played a key role in how these benefits were valued. Notably, when asked to the describe specific investments at the start of the interview, respondents frequently mentioned efficiency improvements unprompted, suggesting a strong natural association between Green Investments and Efficiency Gains.

Additional factors mentioned. Beyond the discussed factors, companies mentioned other motives influencing their investments. Green Investments were often seen as commercially valuable — offering distinctiveness and strategic advantage. Employee satisfaction, pride, and the ability to attract sustainability-minded talent also played a role. Some companies described investments as logical follow-ups to earlier steps. Others referred to broader sustainability beliefs or a desire to prove that sustainable production is possible. One small company even highlighted private benefits, such as heating their home with residual wood or charging private EVs with their solar power.

4.1.2 Differences Between Investment Types

This section presents the differences in factors influencing Renewable Energy and Waste Management investments, based on the coding of the interviews and the combined average scoring (1 = low, 5 = high) given by all companies for each investment type.

Renewable Energy. For Renewable Energy investments, *Market & Stakeholder Behaviour* was the most influential factor. Companies referred to changing customer expectations, stakeholder pressure, and the need to align with market trends, where solutions like solar energy are increasingly seen as the norm. *Financial Performance* followed closely. Many companies highlighted cost savings, especially reduced dependence on volatile gas prices, as a major reason these investments were financially appealing.

Efficiency Gains also had a relatively high impact, primarily due to savings on traditional energy use and the associated reduction in operational expenses. *Reputational Considerations* played a moderate role, often related to the external perception of the company as sustainable and forward-thinking. In contrast, *Public Financing & Government Subsidies* had minimal influence, as did *Legislations & Regulations,* which were rarely mentioned as primary influences.

Waste Management. For Waste Management investments, *Financial Performance* was the most influential factor. Cost savings from reduced waste collection and processing, as well as opportunities for material recovery and reuse, were key motivations. *Market & Stakeholder Behaviour* followed, driven by customer expectations for sustainable resource use and increasing demand for reused materials in products.

Efficiency Gains had a slightly below-average impact. Some investments reduced costs through waste minimization, while others introduced complexity that lowered efficiency. *Reputational Considerations* also scored below average, as few companies indicated that improving their reputation was a primary motivator for Waste Management investments. *Legislations & Regulations* had little impact. Environmental laws were occasionally mentioned but never seen as decisive. *Public Financing & Government Subsidies* were least relevant, as financial support for waste investments was largely unavailable.

Figure 2 visualizes the differences in factor influence between Renewable Energy and Waste Management investments.

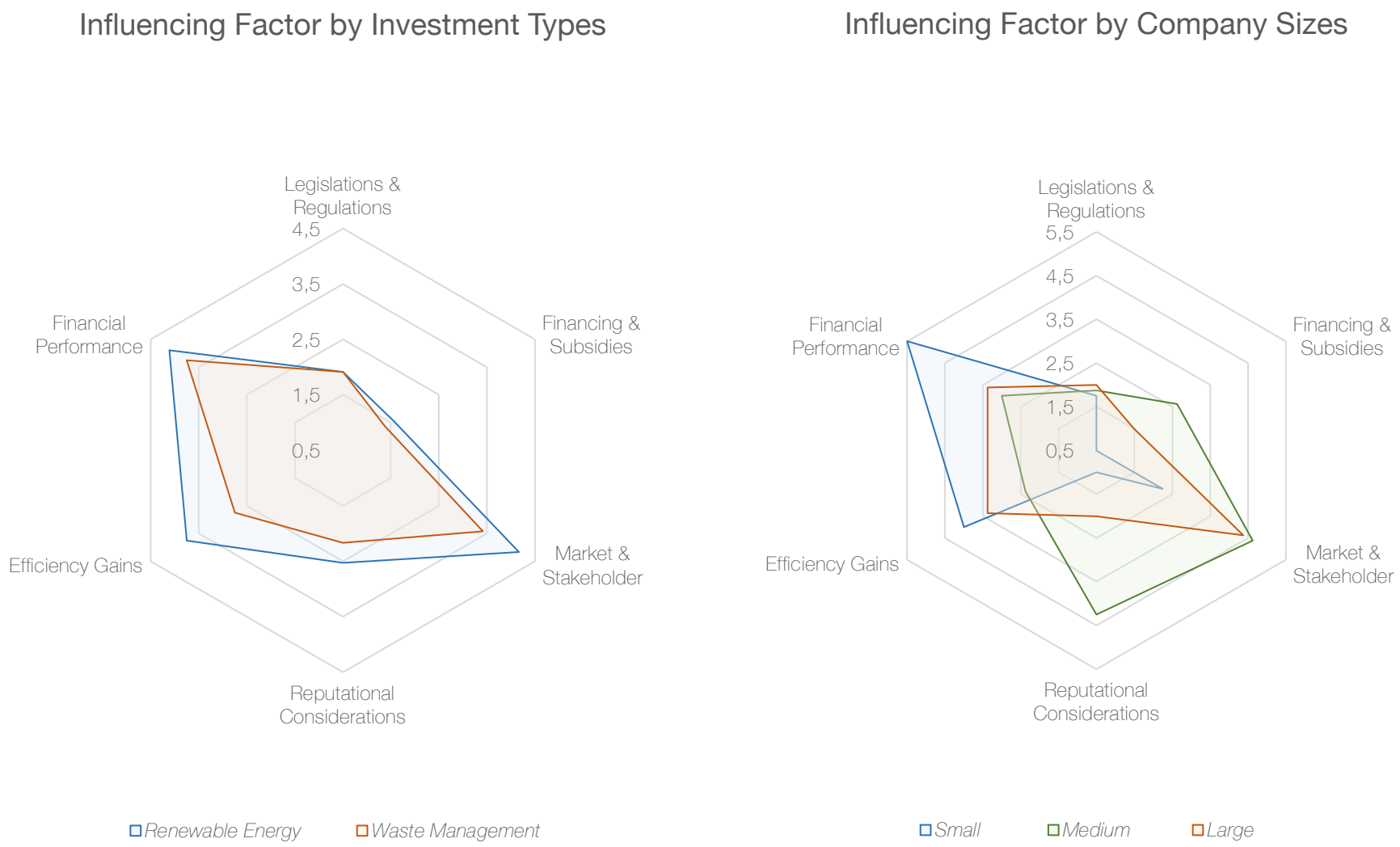

Figure 2. *Variation in Influence of Factors Across Different Investment Types and Across Companies of Different Sizes*

4.1.3 Differences in Factor Influence Between Company Size

This section examines how the influence of the factors varies across company size (see figure 2). Based on the coded interview data, average scores (1 = low, 5 = high) were calculated by combining the scores from both investment types and the two companies within each size category.

Small Companies. *Financial Performance* was clearly the most influential factor for small companies and consistently cited as the main factor for Green Investments. Cost savings were most frequently mentioned along with additional revenues and long-term savings. *Efficiency Gains* followed as the second most influential factor, often linked to cost reductions through energy neutrality or waste reduction.

> *"We can now generate enough energy to cover our entire production. [...] We used to pay around 25,000 euros per year for electricity, and now it's maybe one or two thousand."*

Public Funding & Government Subsidies had no influence on the Green Investments made by small companies. Similarly, *Legislations & Regulations* and Reputational Considerations were seen as unimportant. Both companies indicated that having a sustainable reputation was not particularly relevant to the customers in the local markets they serve. *Market & Stakeholder Behaviour* had a moderate influence, mostly related to aligning with broader sustainability trends and a general sense of needing to keep up with competitors.

Medium-sized Companies. For medium-sized companies, *Market & Stakeholder Behaviour* emerged as the most influential factor overall. Both companies highlighted a strong quasi-direct pressure from powerful clients and shareholders, forcing them to make Green Investments. Beyond this stakeholder pressure, aligning with market trends and differentiating in conservative sectors were key motives. *Reputational Considerations* followed as the second most influential factor and was even mentioned as the main factor by one company. Both companies emphasized standing out, strengthening brand image, and positioning themselves as industry leaders.

> *"We wanted to disrupt the market and take the lead over our competitors [...] We aimed to position ourselves as the most sustainable manufacturer."*

*Legislations & Regulation*s was the least influential factor. While some compliance and anticipation of future rules were mentioned, they were rarely decisive, and weak legislation was sometimes even seen as a barrier. *Efficiency Gains* also had limited influence, with some investments reducing operational efficiency. Cost savings were noted as a side benefit, giving *Financial Performance* a moderate role. *Public Funding & Government Subsidies* scored low overall, although one company emphasized their importance for financial feasibility and willingness to pursue riskier and innovative projects.

Large Companies. For large companies, *Market & Stakeholder Behaviour* was the most influential factor. Both interviews pointed to rising customer demand and the need to align with market trends and industry standards to stay competitive. *Efficiency Gains* and *Financial Performance* also had subtle, but above-average influence, mostly through process optimization, energy savings, and cost reductions. Due to the size and cost of many investments, financial returns were often long-term, making *Financial Performance* more of a secondary consideration.

> *"Our customers want us to be sustainable, and with these kinds of investments, we show that we truly are. So, it really contributes to how we are perceived as a brand."*

Reputational Considerations scored relatively low for large companies. Both companies already have a strong sustainable image and do not see Green Investments as a way to further enhance it. For one company reputation was indirectly tied to *Market & Stakeholder Behaviour*, particularly in relation to brand alignment and responsible positioning. *Legislations & Regulation*s had minimal influence, as compliance played little role in decision-making. *Public Funding & Government Subsidies* scored the lowest, with neither company relying on external financial support.

4.2 Report Analysis

This section presents the report analysis of how the influencing factors appear in the sustainability and annual reports of three large Dutch manufacturing companies: Philips, Auping and VDL (see appendix D). It complements the interview data by showing how these factors are publicly communicated and framed. Their prominence offers an indication of perceived importance, which is compared to the interview findings.

4.2.1 Legislations & Regulations

All three companies frequently mention laws and regulations in their reports, mainly in the context of reporting obligations like the CSRD. While these encourage transparency, they do not directly drive Green Investments. If only steering regulations are considered, the relevance of this factor would be lower, aligning with the interview data where it scored among the lowest. CSRD was also occasionally noted, but never as a decisive factor.

4.2.2 Public Financing & Government Subsidies

In all documents, *Public Financing* or *Government Subsidies* are only featured to a very limited extent. Only Philips explicitly mentions green bonds; at Auping and VDL, subsidies or government support are not presented as important motives. This closely agrees with the interview data from large companies where this factor consistently emerged as the least influential.

4.2.3 Market & Stakeholder Behaviour

Stakeholders such as customers, chain partners, and shareholders are repeatedly mentioned as key influences in all reports. They often refer to a shifting market landscape and growing demand for sustainable products. Philips highlights consumers and shareholders, Auping focuses on chain partners and customer relations, and VDL describes engaging with customers on sustainability. *Market & Stakeholder Behaviour* are thus clearly recognised as a main influence for Green Investments, especially at strategic and relational levels. This aligns fully with the interview data, where this factor emerged among the most influential.

4.2.4 Reputational Considerations

Reputational Considerations play a clear strategic role at Philips and Auping, for example through ESG leadership and B Corp certification. Philips stresses its frontrunner position and the importance of setting an industry example. At VDL reputation is less prominent and mainly tied to its family business identity. Overall, reputation appears to be a relevant factor for two of the three companies, often intertwined with positioning and brand identity. In contrast, participants from large companies viewed this factor as a relatively low influence, noting that their companies already had strong reputations and felt little need to strengthen them through Green Investments. Still, reputational aspects surfaced indirectly, mainly under *Market & Stakeholder Behaviour* in references to a responsible image and brand alignment.

4.2.5 Efficiency Gains

Efficiency Gains are consistently highlighted in all reports. From energy savings to circular design and process optimisation, sustainability is closely linked to cost reduction and efficient operations. The reports suggest a strong alignment between Green Investments and efficiency, often embedded in operational improvements. This aligns with the interview data, where the factor scored slightly above average. While not often named as a main influence, efficiency was frequently mentioned in descriptions of the specific investments, indicating a strong association between sustainability and *Efficiency Gains.*

4.2.6 Financial Performance

Financial Performance is presented in the reports as a long-term outcome of sustainability, rather than an immediate influence. It is mostly addressed indirectly through cost savings linked to efficiency. Philips connects it to risk mitigation, Auping to strategic profitability, and VDL to innovation. *Financial Performance* thus plays a secondary, strategically informed role, rarely appearing as the primary factor for sustainable decisions. This aligns with the interview data from large companies, where it was also seen as an important, but secondary factor. Large investments were described as long-term commitments with financial returns expected over time. Financial benefits were typically framed as consequences of efficiency, not standalone motivations.

5. Discussion

This research examined which factors influence Green Investments in the Dutch manufacturing sector. It aimed to identify the most and least influential factors, assess differences between investment types (e.g. Renewable Energy vs. Waste Management), and explore how these factors vary across company sizes.

5.1 The Most and Least Influential Factors of Green Investments

5.1.1 Most Influential Factor of Green Investments

Financial Performance emerged as the most influential factor. This reflects a *mimetic pressure* in the Institutional Theory (DiMaggio & Powell, 1983), where companies in uncertain contexts adopt Green Investments by imitating peers who appear financially successful, rather than out of intrinsic sustainability motives. This finding aligns with the literature. As many companies still lack a modern sustainability perspective (De Jong, 2023), uncertainty around Green Investments remains high, especially regarding short-term returns. Because companies tend to avoid financial risk and uncertainty (Bocken & Geradts, 2019), proven *Financial Performance* becomes the main factor. This aligns with the concept that investment means expecting a financial return (Inderst et al., 2012). *Mimetic pressure* thus dominates, when companies observe peers benefiting financially from sustainability, their own willingness to invest is reinforced (DiMaggio & Powell, 1983).

This also connects directly to the second most influential factor, *Market & Stakeholder Behaviour.* This mainly reflects a *normative pressure* (DiMaggio & Powell, 1983) where companies align with stakeholder expectations, market norms, and evolving views on environmental responsibility. In a few cases a *coercive pressure* was also evident when sustainability was forced by shareholders or embedded in contractual obligations, making it a matter of compliance rather than a choice. Companies explicitly refer to changing customer demands and market signals, indicating that these pressures are no longer emerging, but already institutionalised. While the literature frames this as a structural shift (Aboulamer, 2017), the interviews illustrate how it is actively experienced. Stakeholder expectations have become tangible, especially when sustainability conditions are embedded in agreements (Pimonenko et al., 2020; Yen, 2018).

There is a clear interplay between *Financial Performance* and *Market & Stakeholder Behaviour*. As market norms shift and stakeholder expectations solidify, they actively reduce financial uncertainty around Green Investments. With more companies adopting and profiting from sustainability, the perceived risk diminishes. In this way, *normative* developments in the external environment reinforce *mimetic* behaviour internally — making it more rational, and less risky, for companies to follow suit. This points to a convergence of *normative* and *coercive pressures*.

5.1.2 Least Influential Factor of Green Investments

Public Financing & Government Subsidies and *Legislations & Regulations* emerged as the least influential factors. Both reflect a *coercive pressure* in the Institutional Theory: mechanisms that compel companies through legal obligations or financial incentives (DiMaggio & Powell, 1983). The low influence of these factors contrasts with the literature, which frequently emphasises the central role of legislation and incentives in Green Investments (Han et al., 2020; Li et al., 2020).

This suggests that in the Dutch manufacturing sector the *coercive pressure* from the government is weak. Given the importance of *Financial Performance* and companies' tendency to avoid financial risk (Bocken & Geradts, 2019), one might expect subsidies to play a bigger role. Although they can reduce financial barriers (Dang et al., 2020), this was not strongly reflected in the interviews. Some companies mentioned schemes like SDE++, but these were seen as secondary and helpful, but not decisive. One subsidy for innovational projects had some influence, but only in one investment. Overall, subsidies were mentioned to be not applicable for larger projects or too complex to access. A similar pattern applied to *Legislations & Regulations*. Despite national targets like a 14.3 Mt CO_2 cut by 2030 and a circular, emission-free economy by 2050 (Rijksoverheid, 2019), these goals were rarely cited as influential. Instead, companies often described regulations as outdated, vague, or obstructive, with some claiming they were already ahead of what was required. While legally binding rules exist to enforce environmental and economic standards (Nevitt, 2020), they are often not perceived as sufficiently challenging.

Quasi-direct stakeholder pressures may have taken over this role, possibly due to a lack of regulatory direction or ambition (Pimonenko et al., 2020). While a *coercive pressure* may stem from direct policy in emerging markets, in more advanced contexts it may shift toward quasi-direct contractual and relational demands. The limited impact of subsidies also aligns with the dominance of *mimetic pressures* as companies tend to invest only after peers demonstrate financial gains, making subsidies less influential (DiMaggio & Powell, 1983; Chariri et al., 2018; Kim & Lee, 2018).

5.2 The Difference in Influencing Factors Between Investment Types

5.2.1 Most Influential Factors for Renewable Energy Investments

For Renewable Energy investments, *Market & Stakeholder Behavi*our emerged as the most influential factor. This corresponds to a *normative pressure*: the tendency of organisations to conform to professional norms, industry standards, and stakeholder expectations (DiMaggio & Powell, 1983). This finding is unsurprising. Both the literature and interview data suggest that the market is undergoing a sustainability shift (Yen, 2018), with stakeholders placing increasing value on environmental performance (Pimonenko et al., 2020; Aboulamer, 2017). Renewable Energy investments align strongly with this trend. They are highly symbolic and serve as visible signals of a company's environmental commitment. Several companies noted their impact on brand image and credibility. For many stakeholders Renewable Energy is a key indicator of sustainability. Companies also described explicit quasi-direct stakeholder demands for CO_2 reduction or fossil-free operations, often prompting such investments.

Financial Performance was the second most influential factor, reflecting a *mimetic pressure* in the Institutional Theory. As sustainability becomes mainstream through changing *Market & Stakeholder Behaviour*, companies imitate competitors benefiting financially from Renewable Energy investments (Yen, 2018; Aboulamer, 2017). Interviewees highlighted energy savings and rising gas prices as key motives, but long payback periods and high upfront costs limit financial returns as the primary driver.

5.2.2 Most Influential Factors for Waste Management Investments

For Waste Management investments, *Financial Performance* was the most influential factor and reflects a *mimetic pressure* in the Institutional Theory (DiMaggio & Powell, 1983). This aligns with the nature of such investments which often involve complex material flows and collaboration with chain partners such as in cases of industrial symbiosis, increasing operational risk and the financial uncertainty of such investments. In this context, companies are more likely to follow peers who have demonstrated financial success with similar projects. Moreover, Waste Management investments aim to retain financial value from materials that would otherwise be lost, making cost reduction and material efficiency key drivers (Wan et al., 2019). These projects often yield quicker financial returns, even though their size and scope can vary.

Market & Stakeholder Behaviour was also an influential factor, reflecting a *normative pressure* (DiMaggio & Powell, 1983). Companies mentioned increasing demand for reused materials and circular products which indirectly improves potential *Financial Performance* by reducing perceived financial risk. This echoes theoretical insights into shifting consumer preferences (Yen, 2018; Aboulamer, 2017).

5.3 The Difference in Influencing Factors Between Companies of Different Sizes

Company size shapes the relative importance of factors influencing Green Investments. For small companies, *Financial Performance* and *Efficiency Gains* are the most influential, reflecting a *mimetic pressure* (DiMaggio & Powell, 1983). Small companies tend to follow proven, low-risk strategies due to limited resources, focusing on short-term returns and smaller investments (Haller & Murphy, 2012). *Reputational Considerations* and *Market & Stakeholder Behaviour* play a minor role, as sustainability demands from customers remain limited, and *normative pressures* are less visible.

Medium and large companies show many similarities, though some differences remain. Both experience strong *Market & Stakeholder Behaviour* influences linked to a *normative pressure*, as companies align with evolving sustainability norms to maintain legitimacy (DiMaggio & Powell, 1983). Medium-sized companies additionally face a

normative pressure related to *Reputational Considerations*, aiming to strategically position themselves for growth and image (Palma-Ruiz et al., 2020), and encounter quasi-direct *coercive pressure* from powerful clients and shareholders demanding concrete sustainability actions (Yen, 2020). Occupying a middle ground, too large to remain under the radar but lacking full market influence, they are especially sensitive to external expectations. A certain level of professionalisation is expected from them with sustainability embedded in their strategic positioning.

For large companies, *Market & Stakeholder Behaviour* is explicitly the main influential factor, reflecting strong stakeholder scrutiny and public expectations to lead sustainable practices (Chariri & Ghozali, 2021). Unlike medium companies, *Reputational Considerations* are less about building image and more about maintaining leadership status (Pimonenko et al., 2020). *Efficiency Gains* appear somewhat more influential for large companies than for medium-sized ones, while *Financial Performance* remains secondary for both.

Company size shapes which institutional pressures dominate the Green Investment decisions. Small companies primarily respond to *mimetic pressures,* focusing on *Financial Performance* and *Efficiency Gains* to reduce risk. Medium-sized companies are most strongly driven by *normative pressures*, aligning with evolving stakeholder expectations and sustainability norms while also facing a quasi-direct *coercive pressure* from powerful clients and shareholders. Large companies experience a strong *normative pressure* from the market and stakeholders to maintain their leadership role, alongside a subtler *mimetic pressure* driven by higher operational complexity, benchmarking against peers, and shareholder expectations.

5.4 Theoretical and Practical Implications

This research used the Institutional Theory to classify influencing factors as *coercive*, *normative*, or *mimetic*. These classifications are theory-based but reflect an analytical choice, open to alternative interpretations depending on context or perspective. With only two companies per size group, generalisability is limited. The low response rate constrained company selection, possibly introducing bias and affecting the comparability

of investments, some of which fell outside the intended scope. Participating companies were likely more engaged with sustainability, and variation in investment size shaped how factors were perceived. Only one representative per company was interviewed, though recurring themes across cases support the credibility of findings.

5.5 Transdisciplinary Reflection

A transdisciplinary approach added value by involving companies of different sizes, sectors, and sustainability maturity, and by interviewing people in varied roles. This diversity enabled a more holistic view of Green Investments and how contextual factors influence them. Industry insights also revealed gaps in the literature, such as the slow pace of regulation. Discussing factors with practitioners helped bridge theory and real-world decision-making.

Engaging with practice also posed challenges. Despite sharing detailed information beforehand, some concepts like stakeholder behaviour, reputation, and efficiency needed clarification and were sometimes conflated. Smaller companies approached the topic more pragmatically than conceptually. A few companies had also not made relevant Green Investments, limiting the applicability of their input.

6. Conclusion

This research aimed to identify which of the influencing factors plays the most influential role in Green Investment decisions within the Dutch manufacturing sector. *Financial Performance* and *Market & Stakeholder Behaviour* clearly emerged as the main influential factors. This finding is not surprising as these two factors represent the essence of business: generating profit and responding to customer demand. Companies expect to get a financial return from investments. It is therefore logical that Green Investments are primarily shaped by considerations of economic viability and external expectations. This reflects a strong *normative* and *mimetic pressure*, and in some cases a quasi-direct *coercive pressure* from stakeholders like powerful clients or shareholders.

In contrast, direct *coercive pressure* from the government appears surprisingly weak. Both *Legislation & Regulation* and *Public Financing & Government Subsidies* were found to be the least influential factors. Mostly due to vagueness, delays, or irrelevance for front-running companies.

The second objective was to examine difference in factor influence between investment types. Results show that Renewable Energy investments are primarily driven by *Market & Stakeholder Behaviour* while Waste Management investments are mostly motivated by *Financial Performance*.

The third objective explored how these factors vary in influence by company size. Clear differences were observed. Small companies experienced a *mimetic pressure* and were mainly financially driven with little market and stakeholder pressure and limited intrinsic motivation for sustainability. Medium-sized companies perceived mostly *normative pressures* and were strongly influenced by market expectations and hard stakeholder demands, and reputation. While large companies experienced a strong *normative pressure* with dominant *Market & Stakeholder* influence, with less emphasis on reputation due to their already strong positioning. But, do also have a subtle *mimetic pressure* with a focus on *Financial Performance* and *Efficiency Gains*.

Based on the findings, two practical implications are proposed:

1. **Standardize sustainability clauses in B2B contracts to create chain reactions:** The research revealed that quasi-direct *coercive pressure* from clients or shareholders is often more influential than regulations. Large and medium companies are increasingly embedding sustainability expectations into supplier relationships, and this pressure is working. This approach helps sustainability expectations cascade through the value chain, especially to SMEs that lack direct pressure otherwise, creating a self-reinforcing loop of B2B-driven sustainability.
    a. Encourage medium and large companies to embed standard sustainability clauses into their procurement policies and supplier contracts.
2. **Make Green Investment returns tangible for SMEs through real-world case toolkits:** Small companies are not driven by environmental norms or stakeholder expectations. Instead, they mimic peers who show that Green Investments result in *Financial Performance* and *Efficiency Gains*. Abstract subsidies or long-term climate goals do not resonate. Tangible, proven examples do.
    a. Develop sector-specific case toolkits that showcase real companies, investment amounts, annual savings, and payback times for Green Investments like solar panels or waste recovery.

This research contributes to the sustainability transition by identifying which factors most strongly influence Green Investments. The insights can support more effective strategies tailored to companies of different sizes. Academically, the research refines how the Institutional Theory applies in practice and shows how internal and external drivers interact.

Future research should replicate this research using a quantitative design with a larger and a more diverse sample to confirm which factors most strongly influence Green Investments. Additionally, it would be valuable to explore how sustainability clauses in B2B contracts can be designed and implemented to create chain reactions in supply chains. Finally, further research could investigate how to develop effective, sector-specific toolkits that clearly communicate the financial and efficiency benefits of Green Investments to small companies.

Sources

1. Aboulamer, A. (2017). Adopting a circular business model improves market equity value. *Thunderbird International Business Review*, *60*(5), 765–769. https://doi.org/10.1002/tie.21922
2. Anderson, B., Cammeraat, E., Dechezleprêtre, A., Dressler, L., Gonne, N., Lalanne, G., Guilhoto, J. M., & Theodoropoulos, K. (2021). Policies for a climate-neutral industry. *OECD Science, Technology and Industry Policy Papers*. https://doi.org/10.1787/a3a1f953-en
3. Bocken, N. M., & Geradts, T. H. (2019). Barriers and drivers to sustainable business model innovation: Organization design and dynamic capabilities. *Long Range Planning*, *53*(4), 101950. https://doi.org/10.1016/j.lrp.2019.101950
4. Bocken, N. M., & Short, S. W. (2021). Unsustainable business models – Recognising and resolving institutionalised social and environmental harm. *Journal of Cleaner Production*, *312*, 127828. https://doi.org/10.1016/j.jclepro.2021.127828
5. Bocken, N., Short, S., Rana, P., & Evans, S. (2013). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, *65*, 42–56. https://doi.org/10.1016/j.jclepro.2013.11.039
6. Byrne, D. (2021). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality & Quantity*, *56*(3), 1391–1412. https://doi.org/10.1007/s11135-021-01182-y
7. Chariri, A., Bukit, G. R. S. B., Eklesia, O. B., Christi, B. U., & Tarigan, D. M. (2018a). Does Green Investment Increase Financial Performance? Empirical Evidence from Indonesian Companies. *E3S Web of Conferences*, *31*, 09001. https://doi.org/10.1051/e3sconf/20183109001
8. Chariri, A., Bukit, G. R. S. B., Eklesia, O. B., Christi, B. U., & Tarigan, D. M. (2018b). Does Green Investment Increase Financial Performance? Empirical Evidence from Indonesian Companies. *E3S Web of Conferences*, *31*, 09001. https://doi.org/10.1051/e3sconf/20183109001
9. Chițimiea, A., Minciu, M., Manta, A., Ciocoiu, C. N., & Veith, C. (2021). The Drivers of Green Investment: A Bibliometric and Systematic review. *Sustainability*, *13*(6), 3507. https://doi.org/10.3390/su13063507

10. Creswell, J. W. (2014). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE.
11. Dang, D. (2020). Can environmental subsidies promote the green investment of enterprises? *Modern Economy*, *11*(01), 109–125. https://doi.org/10.4236/me.2020.111011
12. Doda, B., Gennaioli, C., Gouldson, A., Grover, D., & Sullivan, R. (2015). Are corporate carbon management practices reducing corporate carbon emissions? *Corporate Social Responsibility and Environmental Management*, *23*(5), 257–270. https://doi.org/10.1002/csr.1369
13. Eriksson, P., & Kovalainen, A. (2008). *Qualitative methods in business research*. https://doi.org/10.4135/9780857028044
14. Eurostat. (2024). *Quarterly greenhouse gas emissions in the EU*. European Commission. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quarterly_greenhouse_gas_emissions_in_the_EU
15. Eyraud, L., Clements, B., & Wane, A. (2013). Green investment: Trends and determinants. *Energy Policy*, *60*, 852–865. https://doi.org/10.1016/j.enpol.2013.04.039
16. Haller, S. A., & Murphy, L. (2011). Corporate expenditure on environmental protection. *Environmental and Resource Economics*, *51*(2), 277–296. https://doi.org/10.1007/s10640-011-9499-1
17. Han, S., Li, P., Xiang, J., Luo, X., & Chen, C. (2020a). Does the institutional environment influence corporate social responsibility? Consideration of green investment of enterprises—evidence from China. *Environmental Science and Pollution Research*, *29*(9), 12722–12739. https://doi.org/10.1007/s11356-020-09559-6
18. Han, S., Li, P., Xiang, J., Luo, X., & Chen, C. (2020b). Does the institutional environment influence corporate social responsibility? Consideration of green investment of enterprises—evidence from China. *Environmental Science and Pollution Research*, *29*(9), 12722–12739. https://doi.org/10.1007/s11356-020-09559-6
19. Hanai, M., Hibi, H., Nakasai, T., Kawamura, K., & Terada, H. (2001). Development of adaptive production system to market uncertainty - Autonomous mobile robot

system -. In *Elsevier eBooks* (pp. 383–388). https://doi.org/10.1016/b978-044450649-8/50064-4

20. Hankammer, S., Brenk, S., Fabry, H., Nordemann, A., & Piller, F. T. (2019). Towards circular business models: Identifying consumer needs based on the jobs-to-be-done theory. *Journal of Cleaner Production*, *231*, 341–358. https://doi.org/10.1016/j.jclepro.2019.05.165
21. Hart, S. L., & Milstein, M. B. (2003). Creating sustainable value. *Academy of Management Perspectives*, *17*(2), 56–67. https://doi.org/10.5465/ame.2003.10025194
22. Hummels, H., & Argyrou, A. (2020). Planetary demands: Redefining sustainable development and sustainable entrepreneurship. *Journal of Cleaner Production*, *278*, 123804. https://doi.org/10.1016/j.jclepro.2020.123804
23. Inderst, G., Kaminker, C., & Stewart, F. (2012). Defining and measuring green investments. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2742085
24. Kim, K., & Lee, S. (2018). Does Sustainability Affect Corporate Performance and Economic Development? Evidence from the Asia-Pacific region and North America. *Sustainability*, *10*(4), 909. https://doi.org/10.3390/su10040909
25. Koninklijke Auping. (2023). *Auping impact report 2023* [PDF]. https://cdn.api.auping.com/sites/default/files/2024-06/703-0715%20Auping%20Impact%20Report%202023_ONLINE_DTP.pdf
26. Koninklijke Auping. (2024). *Jaarverslag 2023* [PDF]. https://regnskaber.cvrapi.dk/50749962/amNsb3VkczovLzAzL2E5Lzc1Lzk3Lzk5LzE1MTYtNDZkYi05Y2VhLTY1MTQ0ZjA3Mzc3OA.pdf
27. Koninklijke Philips N.V. (2024). *Annual Report 2023*. Philips. https://www.results.philips.com/downloadcenter
28. Koninklijke Philips N.V. (2024). *Climate Resilience and ESG Overview 2023*. Philips. https://www.results.philips.com/downloadcenter
29. Lyulyov, O., Chygryn, O., Pimonenko, T., & Kwilinski, A. (2023a). Stakeholders' Engagement in the Company's Management as a Driver of Green Competitiveness within Sustainable Development. *Sustainability*, *15*(9), 7249. https://doi.org/10.3390/su15097249

30. Lyulyov, O., Chygryn, O., Pimonenko, T., & Kwilinski, A. (2023b). Stakeholders' Engagement in the Company's Management as a Driver of Green Competitiveness within Sustainable Development. *Sustainability*, *15*(9), 7249. https://doi.org/10.3390/su15097249
31. Palma-Ruiz, J. M., Castillo-Apraiz, J., & Gómez-Martínez, R. (2020). Socially Responsible Investing as a Competitive Strategy for Trading Companies in Times of Upheaval Amid COVID-19: Evidence from Spain. *International Journal of Financial Studies*, *8*(3), 41. https://doi.org/10.3390/ijfs8030041
32. Panagiotopoulou, V. C., Stavropoulos, P., & Chryssolouris, G. (2021). A critical review on the environmental impact of manufacturing: a holistic perspective. *The International Journal of Advanced Manufacturing Technology*, *118*(1–2), 603–625. https://doi.org/10.1007/s00170-021-07980-w
33. Ploum, L., Blok, V., Lans, T., & Omta, O. (2017). Exploring the relation between individual moral antecedents and entrepreneurial opportunity recognition for sustainable development. *Journal of Cleaner Production*, *172*, 1582–1591. https://doi.org/10.1016/j.jclepro.2017.10.296
34. Ren, S., Hao, Y., & Wu, H. (2021). How Does Green Investment Affect Environmental Pollution? Evidence from China. *Environmental and Resource Economics*, *81*(1), 25–51. https://doi.org/10.1007/s10640-021-00615-4
35. Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., Drüke, M., Fetzer, I., Bala, G., Von Bloh, W., Feulner, G., Fiedler, S., Gerten, D., Gleeson, T., Hofmann, M., Huiskamp, W., Kummu, M., Mohan, C., Nogués-Bravo, D., . . . Rockström, J. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, *9*(37). https://doi.org/10.1126/sciadv.adh2458
36. Rijksoverheid. (2019). Klimaatakkoord *2019*. https://www.klimaatakkoord.nl/
37. Siedschlag, I., & Yan, W. (2021). Firms' green investments: What factors matter? *Journal of Cleaner Production*, *310*, 127554. https://doi.org/10.1016/j.jclepro.2021.127554
38. Stoever, J., & Weche, J. P. (2017). Environmental Regulation and Sustainable Competitiveness: Evaluating the role of Firm-Level Green Investments in the context of the Porter Hypothesis. *Environmental and Resource Economics*, *70*(2), 429–455. https://doi.org/10.1007/s10640-017-0128-5

39. Sullivan, R., & Gouldson, A. (2016). The Governance of Corporate Responses to Climate Change: An international comparison. *Business Strategy and the Environment*, *26*(4), 413–425. https://doi.org/10.1002/bse.1925
40. Tang, X., Wang, Q., Noor, S., Nazir, R., Nasrullah, M. J., Hussain, P., & Larik, S. A. (2024). Exploring the impact of green finance and green innovation on resource efficiency: the mediating role of market regulations and environmental regulations. *Sustainability*, *16*(18), 8047. https://doi.org/10.3390/su16188047
41. Tvedt, J., & Wergeland, T. (2023). Tax regimes, investment subsidies and the green transformation of the maritime industry. *Transportation Research Part D Transport and Environment*, *119*, 103741. https://doi.org/10.1016/j.trd.2023.103741
42. VDL Groep. (2024). *Jaarverslag 2023* [PDF]. https://www.vdlgroep.com/_asset/_public/__site_282/Downloads/NL_VDL-Jaarverslag-2023-WEB.pdf
43. Young, P., Byrne, G., & Cotterell, M. (1997). Manufacturing and the environment. *The International Journal of Advanced Manufacturing Technology*, *13*(7), 488–493. https://doi.org/10.1007/bf01624609
44. Zein, S. a. E., Consolacion-Segura, C., & Huertas-Garcia, R. (2019). The role of sustainability in brand equity value in the financial sector. *Sustainability*, *12*(1), 254. https://doi.org/10.3390/su12010254
45. Židonienė, S. (2016). Environmental impact assessment of manufacturing industry projects. *Environmental Research Engineering and Management*, *72*(1). https://doi.org/10.5755/j01.erem.72.1.14976

Appendix A - INTERVIEW GUIDE

INTRODUCTION

1. Could you introduce yourself and tell us a bit about your role within the company?

2. Can you describe your production process(es) and explain how energy consumption and waste management play a role in them, particularly in terms of sustainability?

GREEN INVESTMENTS

3. Can you describe one or two (recent) green investments made by your company that are related to renewable energy or waste management?

EXAMINING IMPORTANT DECISION-MAKING FACTORS (Investment)

Legislation and regulations

4. Were there any government policies or legal requirements that prompted this investment?

Public funding and subsidies

5. Did government incentives or subsidies influence your decision to invest?

Market- and stakeholder behaviour

6. How have market developments (demand), competitive pressure and stakeholder expectations (such as consumers, investors and the supply chain) influenced investment decisions?

Efficiency Gains

7. Did potential improvements in operational efficiency (e.g. energy savings, waste reduction) play a role in the decision to invest?

Reputational Conciderations

8. Did improving your company's image or brand reputation play a role in this investment?

Financial Performance

9. How did the expected financial return or cost savings influence the decision?

ADDITIONAL INSIGHTS & SUMMARY

10. Are there any other factors, besides those discussed, that influenced the decision?

11. Which factors do you consider to be the most important in your decision-making process? And which do you consider to be the least important?

REPEAT QUESTION 1-11 FOR INVESTMENT TWO

HOW COULD THIS FACTOR BE STRENGTHENED?

12. From your perspective, what could be done to strengthen or improve the strongest and weakest factor to stimulate more green investments?

Appendix B – Ethics Checklist

INFORMATION SHEET

The influencing factors behind Green Investments in the Dutch manufacturing sector: A comparison based on company size and investment type.

Dear participant,

Thank you for your interest in participating in my graduation research. My name is Lars Oord, and I am a master's student in the Sustainable Entrepreneurship programme at the University of Groningen. This document explains what the research entails and how it will be conducted. Please take the time to read the following information carefully. If any information is unclear, please feel free to ask questions using the contact details at the end of this document.

WHAT IS THIS RESEARCH ABOUT?

This study examines the key factors influencing green investments (primarily in renewable energy and waste management) in the manufacturing industry and how their relevance varies depending on company size. Although previous studies have identified key drivers and the role of company size, there is little insight into which factors are most important and how their impact differs between small, medium-sized and large companies.

To investigate the factors influencing green investments, I will analyse nine companies from the manufacturing industry, classified by size: three large companies, three medium-sized companies and three small companies. Your company has been selected because it fits within this sector and size category, making your insights valuable to the research.

WHAT DOES PARTICIPATING MEAN?

Participation means that you will take part in an (online) interview. The interview will be semi-structured, with both open-ended and targeted questions, and will focus on the green investments – specifically related to renewable energy and/or waste management – that your company has made in recent years. Participation means that one person from the company who is or was involved in (or has knowledge of) the green investment decision-making process will share their insights.

The interview will explore how various external factors – such as market and stakeholder behaviour, legislation and regulations, government funding and subsidies, financial results, reputation considerations and efficiency improvements – have influenced investment decisions.

Each interview lasts approximately 45-60 minutes, and, with your permission, the audio will be recorded and transcribed for analysis. Your insights will help to uncover the key drivers of Green Investments in different company sizes.

DO YOU HAVE TO PARTICIPATE?

Participation in this survey is entirely voluntary. You are not obliged to participate, and your decision will have no impact on you or your company. If you choose to participate,

you may withdraw until Sunday 18 May without giving any reason and without any consequences. You may also choose to skip questions that you do not wish to answer. Your participation is greatly appreciated, but your comfort and autonomy are our highest priority.

ARE THERE ANY RISKS ASSOCIATED WITH PARTICIPATION?

There are no foreseeable risks associated with participating in this study. The interview focuses on your company's green investments and the factors that influence them, and does not require any sensitive or confidential information.

ARE THERE ANY BENEFITS TO PARTICIPATING?

There are no direct benefits associated with participating in this study. However, your insights will contribute to a better understanding of the factors that influence green investments in different sizes of businesses. The findings may contribute to future research, industry discussions and policy-making related to sustainable investments in the manufacturing sector. You can also reflect on the topic of green investments and gain new knowledge from the results (which can be shared with you at the conclusion of this project). The results may be useful in guiding or supporting your organisation in the area of green investments and influencing factors, as well as potential improvements.

HOW IS THE INFORMATION YOU PROVIDE RECORDED, STORED AND PROTECTED?

The information you provide will be treated confidentially. Although no sensitive data will be collected, your company name and your name will not be mentioned in the study. Instead, companies will be referred to as S-small/M-medium/L-large Company A/B/C to ensure anonymity.

The interviews will be recorded and transcribed to ensure the accuracy of the data analysis. These recordings and transcripts will be stored securely and used exclusively for research purposes.

All data will be treated in accordance with the General Data Protection Regulation (GDPR), which ensures that personal data is processed lawfully and securely. This means the following:

- Your data will be stored securely and will not be shared with anyone outside the study.
- The information will only be used for research purposes.
- You have the right to request access to your data or to request its deletion until Sunday, 18 May 2025.

Only I have access to the recordings and transcripts of the interviews. Once the research is complete, all collected data will be permanently deleted to protect your privacy.

WHAT HAPPENDS TO THE RESULTS OF THE RESEARCH?

The results of this research will be included in my master's thesis, which will be submitted to the University of Groningen (RUG). In addition, the findings will be presented during the Campus Fryslân Conference and, if applicable, the thesis may be uploaded to the RUG

website under student projects, making it accessible for future research and academic reference.

ETICHAL APPROVAL

Ethical approval for this study has been obtained from the Ethics Committee of Campus Fryslân. The study will be conducted in accordance with the relevant ethical standards, ensuring that all participants are treated with respect, confidentiality is maintained, and data is handled responsibly.

INFORMED CONSENT FORM

I would like to ask you to sign the consent form below (page 4), confirming your intention to participate in this study. Signing the form does not oblige you to participate in the study, and you are free to withdraw without giving any reason until Sunday, 18 May 2025.

WHO SHOULD YOU CONTACT FOR MORE INFORMATION?

If you have any questions or would like more information about this study, please contact:

CONTACT DETAILS

Lars Oord

Master of Science Student, Sustainable Entrepreneurship

University of Groningen, Campus Fryslân

Email: l.s.oord@student.rug.nl

Phone:

CONSENT FORM

The influencing factors behind Green Investments in the Dutch manufacturing sector: A comparison based on company size and investment type.

Name Participant:

Assessment

- I have read the information sheet and was able to ask the researcher additional questions.
- I understand that I may ask questions about the study at any time.
- I understand that I have the right to withdraw from the study at any time until Sunday, 18 May 2025, without giving a reason.
- I understand that I can refuse to answer questions at any time without any consequences.
- I understand that I will not receive any direct benefit from participating in this study.

Confidentiality and use of data

- I understand that none of my individual data will be disclosed to anyone outside the research team and that my name will not be published.
- I understand that the information provided will only be used for this research and publications directly related to this research project.
- I understand that data (consent forms, recordings, interview transcripts) will be stored for 5 years on the Y-drive of the University of Groningen server, in accordance with the university's GDPR legislation.

Future involvement

I would like to receive a copy of the scientific output of the project. Yes / No

Having read and understood all the above, I agree to participate in the study: Yes / No

Date
Signature

To be filled in by the researcher

- I declare that I have thoroughly informed the participant about the study and answered all remaining questions to the best of my knowledge.
- I agree to this person participating in the study.

Date
Signature

Appendix C – Interview data and scoring

Small Company A	Renewable Energy Investment		Waste Management Investment	
Influencing Factor	**Score**	**Clarification**	**Score**	**Clarification**
Legislations & Regulations	0,5	"No, there was no legal obligation for us to take solar panels. It was really our own choice, no government pressure."	0,5	"No, there was actually no government policy or legal obligation behind that. We really made that choice all by ourselves."
Public funding & Government subsidies	0,5	"No, neither. We received no subsidy for the solar panels. We just financed it ourselves."	0,5	"No, neither."
Market & Stakeholder behaviour	3	"On the one hand, of course, you see that competitors are also investing in solar panels, and it's kind of the trend with a lot of companies anyway […] So you reduce your vulnerability compared to competitors who haven't taken that step yet."	2	"We did know there would be some demand for them, and so we could sell them. But I wouldn't necessarily call that a real market development."
Reputational Considerations	2	"No, I don't think it is decisive for our customers whether we have solar panels or not, maybe for some? We're a small company, and our image or brand reputation doesn't extend so far that this kind of investment has a direct impact on that."	1	"No, didn't play any part in this. We don't share these things either."
Efficiency gains	4	"We can generate enough energy to run our entire production [...] it makes us less dependent as a company on external energy prices [...] Especially in combination with other things we have done, such as buying an electric forklift and hybrid vehicles"	4	"We used to have about four containers full of wood chips on an annual basis [...] And that's just zero now. So, in that respect, it has really paid off in terms of efficiency."
Financial Performance	5,5	"Yes, this has really been the deciding factor. On an annual basis, it just makes a huge difference in costs. We used to pay something like 25,000 euros a year for electricity, and now it's maybe one or two thousand. We still buy a little bit of electricity, but that's minimal."	5,5	"The expected financial return really played a big role in the decision to invest in that briquette machine [...] We lost the cost of renting and collecting the containers and we can now sell the briquettes as well, which in turn generates money [...] Privately, we use it to heat our own house."

Small Company B	Not within classification of Renewable Energy or Waste Management	
Influencing Factor	Score	Clarification
Legislations & Regulations	3	“There is an environmental inspection from the municipality once in a while, It comes by once in a while to assess how you deal with things like hazardous materials and complex waste streams [...] We did get comments on that [...] all those improvements actually came out of that environmental inspection.”
Public funding & Government subsidies	0,5	“No, at the moment we haven't really had to deal with that. But when we were working on that proposal around solar panels, there were references to subsidy opportunities. Only, those were only valid for a very short time. You then had to decide very quickly and take all kinds of steps, and that just makes it difficult to weigh up such a decision properly.”
Market & Stakeholder behaviour	2	Ultimately, the whole construction industry wants to make that move towards sustainability - both in construction itself and in the production of materials. So, from our role, we do contribute to sustainability [...] If you look at the initiatives, for instance, in terms of technology we are developing [products] that enable circular working. So, in that way we really add value. [...] But real pressure from stakeholders, of “you have to do this and this, otherwise we won't buy any more machines from you” - we don't really notice that yet. In our sector, that just plays less of a role."
Reputational Considerations	1,5	“Yes, who doesn't actually? Look, if you say, “No, of course not”, I don't really believe that. Everyone does end up saying: we want to be sustainable, just because it's such an important issue now [...] But to be honest, that just plays much less of a role with us. [...] The houses just must go, and quickly. So that whole sustainability vibe is now also being abandoned a bit - now it's more: step on the gas and build. And yes, those factories must be full. I found that quite extraordinary to hear."
Efficiency gains	4	“Yes, in terms of efficiency: definitely. Especially if you can demonstrate in an ROI or a business case that something is simply more efficient and therefore makes more money, then you should just do it. That goes without saying.”
Financial Performance	5,5	“But to be fair: it is mainly the cost side that weighs heavily. Maybe I'm saying that a little too honestly, but that's the way it is [...] If you look at it closely, it's only a small group of people who do sustainability purely out of conviction. Most of them end up doing it because of their own wallet. And to be honest: I can understand that. Ultimately, it just must pay off [...] If I look at solar panels, for example: if it doesn't yield anything for me, I'm not going to do it either. That's just being honest. The reason we are affiliated to certain iniatives, for example, is also because it offers opportunities on the commercial side - for our [products]. Of course, it's sustainable and that's heartening, but it also just helps us in selling and developing our products. And I think that's how it works for most companies. Most might not say it out loud, but in the end, that's often what it's all about.”

Medium-sized Company A	Renewable Energy Investment		Waste Management Investment	
Influencing Factor	Score	Clarification	Score	Clarification
Legislations & Regulations	0,5	"At that time, not yet. This was just a piece of intrinsic motivation. So concretely, no there was no direct government requirement."	3	"People were talking about the tightening of the MPG [...] From that point, we actually wanted to anticipate a little bit. [...] So that we not only meet the current requirements, but also already meet the next one - and even the one after that."
Public funding & Government subsidies	4	"The SDE+ subsidy played a big role in this. [...] That financial security made it a lot more attractive to immediately invest in renewable energy on a large scale."	4	"The WBSO [...] has really contributed to that. [...] Sometimes more than half of the project is subsidised. [...] That allowed us to realise this."
Market & Stakeholder behaviour	4	“The competition was doing something with renewable energy here and there, but these were small-scale initiatives [...] And from there just take all the lead from the competition. Because that was the long-term vision of the euro profile, to stand out with sustainability [...] Some customers now also demand a CO2 reduction plan from every supplier. [...] Do you want to keep us as a cooperation partner? Then you will have to start your sustainability efforts now."	3,5	"The competition? They don't really do anything in that area. [...] As a result, we saw a gap in the market that we wanted to jump straight into."
Reputational Considerations	5,5	“Yes, definitely. I think that was the most important reason. Especially in the context of: we wanted to establish ourselves as the most sustainable manufacturer. Then you will have to set a good example yourself.”	5,5	“In fact, it is precisely the lack of competition that has driven us to want to differentiate ourselves further. That drive to be different and to be ahead comes precisely from the fact that there is little movement in the market.”
Efficiency gains	3	“Yes, a piece of cost reduction combined with being less dependent on the grid. Because back then, they did know that grid congestion was coming. So in that capacity they said, we just want security of supply.”	0,5	"I also think right away that is the most insignificant factor. [...] The processing takes even a little longer becaus it is more complex."
Financial Performance	4	“In fact, that really did contribute - precisely because we took a long-term view of the whole plan. Both in terms of costs and vision. We looked at what it would yield in the long term, and then you see that we simply totaled the lowest in terms of cost reduction. That certainly helped in getting investors on board and getting the plan through.”	2	“No, maybe the fact that we could get so much subsidised [...] The return on this product is slightly higher, simply because the product is also more expensive.”

Medium-sized Company B	Renewable Energy Investment		Renewable Energy Investment	
Influencing Factor	Score	Clarification	Score	Clarification
Legislations & Regulations	2	"The government does have rules for sustainability measures that you can recover within three years [...] But in the case of this investment, you're sitting with a payback period of more than 25 years. [...] So we certainly didn't do that because of legislation or regulations."	2	"We do have branches that work for cities like Amsterdam or The Hague, for example. And there, of course, you have to deal with environmental legislation, where you are no longer allowed to use fuel vehicles in the city - only electric. But here in Friesland, that doesn't really play a role at all."
Public funding & Government subsidies	2	"No, on this investment we did not get a subsidy on this. What we did get a subsidy on is on the solar panels. That we get a guaranteed yield for feedback delivery. SDE subsidy is that."	0,5	"There is no subsidy on electric vehicles. Except through that addition scheme, which was still attractive for employees last year. Then again, that has since changed too, so there is no longer that advantage now either."
Market & Stakeholder behaviour	5,5	"This was actually imposed top-down from the shareholder [...] All business sites had to be made sustainable by 1 January 2025 [...] and this was even allowed to come at the expense of the financial result."	5,5	"We are now noticing that contracts with more and more clients demand that you show up on site using a fossil-free means of transport [...] Soon we will only be allowed to go there in fossil-free vehicles. [...] So in that respect, there is really hard pressure from the market"
Reputational Considerations	3	"We did post quite positive messages about this on LinkedIn. And if we receive requests and people ask about sustainability, I will of course mention it. Yes, that's logical. And you also see that customers experience it positively. So, nobody is negative about the fact that we did it."	3	"By complying with it, you automatically improve your image as an organisation. You show that you are sustainable and future-oriented. [...] Although it was not started purely for image reasons, it ultimately contributes to how we are perceived as a company."
Efficiency gains	2	"Well, we went off the gas at that point. We used 50,000 kube of gas a year. So, we no longer have that now. But then again, we did receive an energy bill in return for that in electricity. In fact, our total energy consumption has not decreased."	4	"By switching to electric vehicles, we save significantly on the use of fossil fuels. [...] Since we can charge the cars through our own solar panels, we hardly need to use traditional fuels like diesel or petrol anymore."
Financial Performance	1,5	"No, as I said, the payback period is more than 25 years, so we don't notice much of that at the moment [...] Of course, we do assume that energy prices will continue to rise, especially gas prices, which will eventually increase the savings faster. But at the moment, it is still very little."	4,5	"We charge those cars with our own solar panels, so that power actually costs almost nothing comparatively. This also reduces our fuel bill considerably. [...] The purchase is a bit more expensive, but well, you write that off in five years."

Large Company A	Energie Efficiency Investment		Waste Management Investment	
Influencing Factor	Score	Clarification	Score	Clarification
Legislations & Regulations	3	"Indeed, as a company, we had been a member of the Multi-Year Agreements (MJA) for energy efficiency for some time. [...] As a participant, you had to have an analysis or audit of your production process, among other things. So in terms of energy, there was definitely some form of government policy in place."	1	"No, there wasn't."
Public funding & Government subsidies	3	"For example, we insulated all the roofs [...] and fitted LED lighting throughout the production. I think there has been some subsidy on those energy-saving measures."	1	"No, neither."
Market & Stakeholder behaviour	4,5	"We have also joined the CO_2-Performanceladder. For us, that partly came from tenders, for example from the [customer] [...] They demanded at one point that you participate."	2	"No, we did know that foil actually provides quite a bit as a waste stream [...] But it's not like stakeholders or customers were asking for this."
Reputational Considerations	0,5	"No, not so much."	0,5	"No, this is also not something you communicate very much or anything. It's not that exciting either."
Efficiency gains	4,5	"By merging, you can turn off machines, heat fewer rooms, use less gas, use less lighting, and so on."	4	"It actually had two sides. One: it's just a waste to have to drive so often. And two: more simply fits in such a container if you press the waste."
Financial Performance	4	"It was also kind of a decision that we had made on it that in the end it's going to pay off something in terms of cost. [...] Maybe you won't recoup it so quickly, but you will in the long run."	4,5	"Because you then have to drive much less often and can carry much more volume per container, you recoup that investment relatively quickly."

Large Company B	Renewable Energy Investment		Waste Management Investment	
Influencing Factor	**Score**	**Clarification**	**Score**	**Clarification**
Legislations & Regulations	2	"There was no policy for it, no permit processes, no frameworks. [...] So we resolved that in a form of partnership with the municipality and province."	2	"There is mandatory reporting on waste streams, and that acts as a nudge. [...] But it was certainly not the reason why we started it."
Public funding & Government subsidies	1	"No, not at all."	1	"No."
Market & Stakeholder behaviour	5,5	"Our customers want us to be sustainable. And with this kind of investment, we really show that we are. [...] It's actually one of the biggest drivers for us."	5,5	"Expectations from the market and our stakeholders also really play a big role here. Customers expect us to handle raw materials and waste sustainably, and to be transparent about it. So that helps not only in how we make choices, but also in how we want to profile ourselves as an organisation. It is simply part of who we are and what the market demands of us."
Reputational Considerations	4,5	"All these sustainable choices reinforce that story. They show that we don't just say it, we actually do it. [...] It adds to the pride of our employees."	2,5	"For us, it falls under the same story we want to tell [...] It shows that we are serious about circular production."
Efficiency gains	4	"By using hydrogen, we have been able to reduce gas consumption by about a third. [...] All in all, that just provides a piece of efficiency."	1	"No, we just made it more complicated."
Financial Performance	3	"In the long term, it certainly won't make us any worse off, but it's also not like it will make us rich in the short term."	2"	"No less. It's more an increase in value than cost savings. It's more that the material you end up realising becomes more valuable, rather than saving costs by processing your waste litres."

Appendix D – Score and Clarification of Report Analysis

Influencing Factor	Score	Clarification
		Philips
Legislations and Regulations	4	In both the Climate Report and the annual report, regulation (such as CSRD, EU Taxonomy, SBTi) is a very clear driver of sustainable performace.
Public Financing and Government Subsidies	2	While Philips does utilise green bonds, the role of subsidies or government funding is not highlighted as a primary motivator.
Market- and Stakeholder Behaviour	5	Customer expectations, investors and social pressure are structurally named as key reasons for acting sustainably.
Reputational Considerations	5	Philips has adopted an explicit stance of leadership in the field of ESG matters. Reputation is regarded as a pivotal aspect of trust and brand equity.
Efficiency Gains	4	Efficiency is frequently referenced in both documents, encompassing concepts such as circular design, energy utilisation and supply chain optimisation.
Financial Performance	3	Financial performance plays a role in value creation and risk mitigation but seems rarely the direct trigger for action.
		Auping
Legislations and Regulations	4	The CSRD and environmental legislation are explicitly mentioned as key drivers of transparency and action. Not a main reason, but strong drivers.
Public Financing and Government Subsidies	2	While subsidies are received (for example, for the circular production line), they seem to play a more supportive role rather than a decisive one.
Market- and Stakeholder Behaviour	4	Customers, supply chain partners and stakeholders are regularly cited as reasons for making sustainable choices. Especially important in positioning and long term.
Reputational Considerations	5	B Corp certification is a central theme in both reports and is closely intertwined with Auping's corporate identity and strategic positioning.
Efficiency Gains	5	Efficiency consistently cited as motivation: lean production, energy savings, cost price reduction of circular mattresses. Seems the central driver.
Financial Performance	3	Sustainability is linked to long-term profitability, but financial gain is not the primary motive. Strategically relevant, though.
		VDL
Legislations and Regulations	4	The document explicitly mentions preparing for the introduction of the CSRD and the importance of complying with environmental legislation.
Public Financing and Government Subsidies	1	There is a single mention of collaborations on business areas (energy), but subsidies are not positioned as a driver.
Market- and Stakeholder Behaviour	4	The report mentions that VDL is actively discussing sustainability with customers. Stakeholder expectations are thus indirectly recognised as a motive.
Reputational Considerations	3	Family business values, continuity and community involvement are discussed, but reputation as an explicit motivation for sustainability does not feature strongly.
Efficiency Gains	5	Examples of energy efficiency, material reduction, automation and process optimisation are given throughout the report. The tone is results-oriented and pragmatic: sustainability pays off when it leads to smarter, cheaper production.
Financial Performance	3	Sustainable investments are linked to innovation and long-term growth potential. Investment is mentioned a lot, but without a direct link to sustainability.