ABM Fazle Rahi

ABM Fazle Rahi started his PhD journey in September 2018 at the School of Business, Innovation and Sustainability, Halmstad University, Sweden. His doctoral study is a joint collaboration and jointly financed by the Department of Business and Economics Studies, University of Gävle. Before starting his PhD studies, he successfully completed his master’s of science in finance and accounting from Umeå University, with full funding from the Swedish Institute Study Scholarship (SISS) between 2016 and 2018. In addition to his academic background, he has spent roughly six years working for several well-known multinational companies. This doctoral thesis contributes to the advancement of knowledge in the fields of sustainability accounting and finance literature by examining the nexus between corporate sustainability and financial performance. From his social life experience, Fazle Rahi has observed that mutual interaction boosts the collaborative network relationship, whereas power distance and hierarchy damnify it. Inspired by his life experience, he has primarily examined the nexus with the lens of network governance theory.

School of Business, Innovation and Sustainability

Halmstad University Dissertations, 2023
Nexus between corporate sustainability and financial performance

ABM Fazle Rahi
All praise to almighty God, who enlightened us through his knowledge. Alhamdulillah.
Abstract

To save the planet from previous devastating corporate actions, corporations have enormous responsibilities toward the environment, economy and society. Implementing corporate sustainability practices through establishing effective governance mechanisms can be considered a transformative initiative with potential implications for social and green innovation. Social and green innovation thus shifts companies’ focus from for-profit objectives to the creation of mutual benefit and shared values.

Over the past four decades, extensive academic research has been conducted on the topic of corporate sustainability and financial performance. Therefore, conducting research on a similar topic might appear to the reader to be carrying coal to Newcastle. However, the aim of this thesis is not to reproduce previous studies but rather to address the following research question:

*What is the nexus between corporate sustainability and financial performance?*

This thesis identifies that previous literature has produced blended results when explaining the nexus between corporate sustainability and financial performance; they have asserted that firms are solely responsible for sustainability activities and thus financial performance. In this regard, previous literature has argued for institutional pressure and legitimacy requirements to shape corporate behavior. However, I contradict the views of previous scholars and argue that power distance and hierarchy always hamper the relationship. I further posit that corporations are *not* solely responsible for sustainability activities and thus financial performance. Rather, the nexus between corporate sustainability and financial performance is transformed, modified, and shaped through an interaction of the trajectories of multiple actors, an interaction that I was able to capture through the multi-theoretical approach. In this regard, I propose a comprehensive framework, that is effective under a macro business ecosystem. With this framework, companies that prioritize sustainability strategies would eventually ensure financial performance but after a time lag. In contrast, companies that engage in greenwashing and selfies will always achieve misleading outcomes.

The appended articles further examine the nexus between corporate sustainability and financial performance empirically using data from European countries by applying several static and dynamic econometric models under different time spans. The overall empirical result suggests that
corporate sustainability practices have a positive impact on financial performance but with a time lag. However, in order to ensure durable long-term corporate sustainability practices, the macro and micro business environments – a network governance relationship – play a crucial role. The consistent and empirically robust results reveal the multiple trajectories of the nexus between corporate sustainability and financial performance. Therefore, the thesis disseminates key messages to policy makers and practitioners about the importance of an effective network governance mechanism.

**Keywords:** sustainability, performance, profitability, corporate responsibility, ESG, multi-theoretical approach, macroeconomic factors, microeconomic factors, women on boards, board composition, sustainable development
Acknowledgments

It’s been five years since I joined as a doctoral researcher. Once, I felt that five years was equivalent to five million years—it will never end. Now, while I am writing this Kappa, it feels like five weeks since I joined. Indeed, time travel! On the day I left Bangladesh for higher education in Sweden, I envisioned pursuing a PhD degree. Finally, the dream comes true! Here I would like to quote a line from the former nuclear scientist APJ Abdul Kalam: “Dream is not that you see in sleep, dream is something that does not let you sleep.” Indeed, I have spent countless nights without sleep in the last five years.

The journey to the PhD was bumpy, arduous, and memorable at the same time. This section is dedicated to the people who made the journey possible. First and foremost, I offer my heartiest and deepest appreciation to all my supervisors. Of the people I am grateful to, there is one I am more grateful to than others. Professor Jeaneth Johansson, being my main supervisor, motivated and taught me about research and gave me full freedom to grow. Without her support, guidance, motivation, and generosity, I would probably never have finished this PhD on time. Jeaneth, I am grateful for your unconditional support. You are a pragmatic and at the same time down-to-earth angel. Thank you for everything. I would like to show my gratitude to my co-supervisor Marita Blomkvist for her support and patience. Her comments helped a lot to improve the quality of the papers we wrote together. I also would like to thank Catherine Lions from Umeå University. She was the first one to sow the seed of a researcher in my soul during my master's studies. I will never forget her mentorship. Last but not least, the study was conducted during the period while I was partly financed by a grant from the project called “Hållbart värdeskapande genom cirkulära affärsmodeller” (Sustainable value creation through circular business models), which is a European Union (EU) project and financed by Swedish Tillväxtverket, arranged by Professor Arne Fagerstrom. I owe a debt for the funding I received towards fulfilling my dream of this doctoral degree.

During my research journey, I met a few fantastic people who enlightened me through their wisdom, generosity, and positive attitude. I must mention a few names who made my PhD journey easy, convenient, and memorable. I will always remember your support. First, I start with Jonas Gabrielsson. I have learned so much from you as a person, teacher, and colleague. It has been an honor to have an office next to you. Thank you. I also would like to thank Torbjörn Tagesson for
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Finally, thanks to the School of Business, Innovation and Sustainability at Halmstad University, the Department of Business and Economics Studies at University of Gävle, Forskarskolan i redovisning (FIRE), Nordic Research School in Innovation and Entrepreneurship (NORSI) and Swedish Institute (SISS-2016) for all the support towards creating a platform for me to achieve the degree.
Appended Papers for the PhD dissertation

The following papers are attached to this doctoral dissertation and are referred to by Roman numerals in the text.


Paper IV  Rahi, A. F. Unpacking women’s power on boards. Gender reward in board composition. Under review with a journal.

A previous version of this paper was also presented at the NORSI Conference at BI-Norwegian business school in April 2022, Oslo, Norway.
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Chapter 1: Introduction

The last four decades have witnessed abundant research on the relationship between corporate sustainability and financial performance. Therefore, readers might consider conducting research on a similar topic to be “carrying coal to Newcastle.” This chapter provides a detailed overview and explanation of the motivation behind conducting the study by emphasizing the research problems and how it will contribute to the development of a new understanding of the relationship.

This section starts with a real anecdote and then provides short aims to explain the evolution and execution of the idea of this thesis.

1.1 Anecdote

After the buddy program event in autumn 2016 at Umeå University, we international, exchange, and local Swedish students sat together and ate baguettes, butter, cucumbers, tomatoes, with coffee, of course! We had finished our lunch and it was time to clean up. Meanwhile, a guy from Austria was discussing and comparing trash sorting facilities between Austria and Sweden. In the middle of the conversation, a guy from Germany curiously looked at me and asked, “how do you sort trash in your home country”?

(I was at a loss, thinking about what I should reply to present my country in a decent light.)

I responded with a stuttering voice- “We have only one trash bin.”

(Laughter broke out.)

It was my first week in Sweden, and I was observing others with interest. At one point, I spotted one of the Swedish students separating paper from the empty plastic butter container. The container was made in such a way that even children could tear it to separate the paper from the plastic for the purpose of recycling.

Being a business student, I believed that the design and manufacturing of this butter container required extra resources (money and effort) for sustainable packaging. What is the purpose of
spending extra for the packaging? Does this additional expenditure affect the company's financial performance? Does it pay the company back?

I was asking myself questions, and my curiosity brings me here.

1.2 Aims of the study

The purpose of this concise presentation of the aims before describing the background is to inform and engage readers about the intention of this thesis. This thesis is a compilation of four articles. The first article is a hybrid literature review that covers the first aim of this thesis. However, after delving into the research field and understanding the area and scope for contribution, the second aim has been set.

**Aim 1:** This thesis aims to conceptualize how previous research has determined the nexus between corporate sustainability and financial performance and what are the hot and blind spots in the field.

**Aim 2:** In addition, this thesis aims to uncover macro and micro business environmental factors that might affect this nexus.

1.3 Background of the study

“If you think the economy is more important than the environment, try holding your breath while counting your money.” — Guy McPherson

Due to destructive corporate behavior and the linear business model, we are at the edge of a precipice. Human consumption patterns will need natural resources equivalent to two and three planet Earths by 2030 and 2050, respectively (Goyal et al., 2018). To save the planet, we are currently reshaping our societies in terms of economic, environmental, political, business, and

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1 By the term *nexus*, I mean “a connection or series of connections linking two or more things.” The definition is adopted from the Oxford Learner’s Dictionary.

2 In this thesis, the terms “business environment,” “network ecosystem,” and “business ecosystem” have been used interchangeably. Whereas mentioning “ecosystem” only refers to the natural ecosystem.

3 The linear business model represents a take-make-waste pattern of doing business.
This process requires a high level of respect for collaborative efforts to make our planet more sustainable (Osburg & Schmidpeter, 2013). This thesis holds the notion that the first step in this collaborative effort is expected to come from corporations, which have multidirectional influential relationships and responsibilities towards the economy, environment, and society. In this regard, it can be a game-changing initiative to implement corporate sustainability practices in terms of a caring environment and natural ecosystem and taking good care of employees and other stakeholders by implementing proper governance mechanisms.

Osburg and Schmidpeter (2013) have argued for this initiative as a social and green innovation. Every new process or idea that transforms our future's dynamic thinking by bringing about the well-being of the environment, business, and society is an example of social and green innovation. In this case, social and green innovations will be essential tools to transform our businesses and thus societies. Social innovation and green innovation are different concepts but are frequently used together due to their conceptual similarities. Adoption and diffusion of innovativeness and procedures addressing social and environmental issues are the primary goals of social and green innovation (Osburg & Schmidpeter, 2013). The paradigm of open innovation, introduced by Henry Chesbrough (2003), is now evolving to include social and green innovations (Alonso-Martínez et al., 2019; Osburg & Schmidpeter, 2013). However, the connection between Osburg & Schmidpeter's (2013) social and green innovation, Henry Chesbrough's (2003) open innovation, and Everett M. Rogers's (2003) diffusion and adoption of innovation can be traced to the same root, in this case corporate sustainability practices, as all of these concepts share the goals of introducing, sharing, spreading, and adapting new ideas. This approach not only accelerates the development and implementation of new concepts but also serves as a catalyst for their diffusion.

However, the design and implementation of innovative solutions that imply conceptual, process, product, or organizational changes, with the ultimate goal of improving the welfare and well-being

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4 Here the pronoun "we" refers to the group of people who are taking action to save the planet by reshaping various aspects of society, economic, environmental, political, business, and academic thinking (researchers).


6 This thesis deliberately skips a discussion of the adoption rate of diffusion of innovation, in this case corporate sustainability practices, as this is beyond the aim and scope of this thesis.
of individuals, communities, and the environment are referred to as social and green innovation (Osburg & Schmidpeter, 2013; Alonso-Martínez et al., 2019; Saunila et al., 2018; Xie et al., 2019). Social and Green innovation is thus an initiative that can effectively reduce social and environmental problems with the help of proper governance by handling well-being, diversity, and equality; as well as improving energy saving, pollution prevention, waste recycling, and environmental management, which play a vital role in corporate sustainability practices (Alonso-Martínez et al., 2019; Saunila et al., 2018; Osburg & Schmidpeter, 2013). Social and green innovation shift companies’ focus from “only revenue or profit-driven” objectives to the creation of mutual benefits and shared values.

After the publication of the Brundtland Report in 1987, the term corporate sustainability received metaphorical wind in its sails due to awareness about safeguarding society and the environment from devastating corporate actions. The Paris Agreement in 2015 and the recent European Union (EU) Green Deal indicate that policy makers are also prioritizing sustainability issues at the top of their agendas, especially in Europe. In this regard, legitimacy requirements and institutional isomorphism force companies to practice sustainability while ensuring economic prosperity. The EU Non-Financial Reporting Directive (NFRD) of 2014 is an example of institutional requirements for unifying sustainability and disclosure processes. Consequently, more and more corporations are now trying to incorporate sustainability practices into their business actions in the European regions. Corporate sustainability, such as environmental, social, and governance (ESG) practices, are thus considered to be a source of innovation that works as an insurance and a tool for risk management, creating value by mitigating costs through improving the control process (Crawford and Nilsson, 2023; Xie et al., 2019). The fundamental idea is that corporate sustainability activities create slack resources (spare capabilities) by avoiding additional costs (such as the probability of costly environmental or legal liabilities) and enable companies to charge a premium for their products or services by capturing public sentiment. Therefore, shareholders as well as stakeholders require companies to adopt sustainability to ensure long-term resilience. It has been further proven that during times of crisis, sustainability functions as a corporate shield (Pizzutilo, 2023). Many previous studies have identified that corporate sustainability has a positive impact on financial performance (i.e., Callan & Thomas, 2011; Gangi et al., 2019; Laguir et al., 2018; Lawal et al., 2017; Lee et al., 2017; Xie et al., 2019). In contrast, many other studies indicate indifferent or negative relationships (i.e., Atan et al., 2018; Charlo et
al., 2015; Gangi & Varrone, 2018; Marti-Ballester, 2015) by focusing on the reasoning that sustainability could perceive as greenwashing or a selfie (Bowen and Aragon-Correa, 2014; Montecchia et al., 2016). The research community appears to be divided. Three possible scenarios of results, positive, indifferent, and negative, have already been discovered. On top of that, the debate on whether it pays to be green is ongoing (Ghisetti and Rennings, 2014; King and Lenox, 2001). Therefore, conducting research on a similar topic might appear to the reader to be carrying coal to Newcastle.

However, the aim of this thesis is not to reproduce previous studies but rather to address the following overall research question (The main research question of this thesis):

What is the nexus between corporate sustainability and financial performance?

1.4 Research problem and research questions

“Without environmental sustainability, economic stability and social cohesion cannot be achieved.” – Phil Harding

This quotation is from Phil Harding, former senior policy adviser on sustainable development, climate change, and resource efficiency to the United Kingdom government. This thesis professes the same notion and conceptualizes the interconnection among environmental, social, and economic sustainability together. According to the argument, corporate sustainability and financial performance are intimately intertwined. Academics have captured this phenomenon with the notion of value creation and further described it with the help of the resource-based view and stakeholder theory. Due to sustainability practices, a firm’s risk and costs decrease, while its revenue and investments increase, satisfying all stakeholders. The proponents of the value-creating notion further argue that as sustainability activities improve financial performance, they create slack resources in the long run, which ultimately leads to a bidirectional intertwined relationship.

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7 This thesis refers to selfies as a form of eye-washing, as well as actions that are deceptive or misleading in order to satisfy legitimacy requirements or for greenwashing purposes.
After four decades of research on the topic, many in academia argue that much research remains to fully understand the nexus (Ferrero-Ferrero et al., 2016; Surroca et al., 2010). Opponents have come up with the value-destroying notion and explain this phenomenon with the help of trade-off, stockholder, and agency theories.\(^8\) Meaning that corporations that are concerned with the environment and society tend to put stakeholder satisfaction above shareholder profitability (Alshehhi et al., 2018). Research results further indicate that investors have had a negative response to sustainability practices (Martí-Ballester, 2015; Solal and Snellman, 2019) and that they do not always ensure financial performance (Hussain et al., 2018). In brief, previous literature clouding the matter has produced a blended result. Therefore, to explore the paradox of the research community,\(^9\) this thesis poses the following two research questions to understand the nexus:

**RQ1**: What do the literature and theories suggest about the relationship between corporate sustainability and financial performance?\(^{10}\)

**RQ2**: How can the nexus between corporate sustainability and financial performance be conceptualized from the previous literature?

The preceding discussion explained how corporate sustainability and financial performance could produce blended results. Keeping this in mind, this thesis further explores the relationship of sustainability and financial performance for the Nordic financial institutions with the help of stakeholder and agency theories.\(^{11}\) Stakeholder theory suggests that Nordic companies, due to institutional isomorphism, would be focused on stakeholders. On the other hand, agency theory implies that the financial industry intends to please shareholders by being economically rational. Two theoretical viewpoints may be complementary or contradictory in order to support complex

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\(^8\) In this section, I have introduced many common domain theories predominantly used in the field of accounting and finance. The discussion is presented at a general level.

\(^9\) Here I mean paradox as exhibiting a self-contradictory nature.

\(^{10}\) Here “theories” refer to theories applied in the previous literature to conceptualize the relationship.

\(^{11}\) In this thesis the Nordic countries are the following: Sweden, Denmark, Finland, and Norway. Iceland is excluded due to lack of data.
situations. The key rationale for choosing Nordic companies is that first, the Nordic countries’ institutional framework and social cohesion are very strong in terms of sustainability. Stakeholders as a group seriously value corporate sustainability practices. Second, more and more practitioners are insisting that a significant percentage of Nordic financial institutions incorporate sustainability into their business models (Nordea, 2020). In contrast, the financial industry, by the nature of their business, prioritizes shareholders’ over stakeholders’ interests (Achua, 2008; Williams and Prather, 2010). Therefore, I found it interesting to examine the sustainability outcomes of the financial industry in a favorable stakeholder-focused institutional environment, in this Nordic context. In this regard, I propose the following research question.

RQ3: Do sustainability practices affect the financial performance of the Nordic financial industry?

Due to the legitimacy requirements and stakeholder pressure, sustainability practices have now been adopted by a large number of European companies (La Torre et al., 2018, 2020), especially after the implementation of the EU NFRD (Directive 2014/95/EU). Even though there are significant differences in sustainability practices and therefore disclosure quality among Western and Central-Eastern European (CEE) companies, a large number of companies from this region are now practicing sustainability as well as disclosure at their level best (Rahi et al., 2023a; Steurer and Konrad, 2009). This is due to concern over stakeholder boycotts or legitimacy penalties. The performance of Western European companies is far greater than that of CEE companies. Yet, due to EU centralization, many CEE member state companies are raising their level of performance following EU directives. On the other hand, sustainability issues are deliberately underestimated by companies belonging to capitalist countries (Rahi et al., 2022b), especially companies from the USA and Anglo-Saxon European countries (Li et al., 2017; Ziegler, 2012). It is evident from the literature that the relationship between sustainability and financial performance in these countries is primarily negative (Li et al., 2017; Rahi et al., 2022b; Ziegler, 2012). This is because sustainability might take a longer duration to generate profitability (Lee et al., 2017). Many authors

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12 This thesis discusses the differences between European countries at the superficial level. For more specific, readers are directed to Rahi et al., 2023a article. It is important to note that the article is not part of this doctoral thesis.

13 There are many types and versions of capitalism. This thesis did not segregate the versions of capitalism. The discussion is kept on a superficial level. This issue is beyond the aim and scope of this thesis.
have argued that due to institutional quality (IQ), effective (good) governance, and legitimacy requirements, the performance of European companies is remarkably ahead of others (Steurer et al., 2012). But opponents of regulation argue that overregulation generates costs and creates a fertile field for information asymmetry (Deegan, 2011), because, in accordance with institutional isomorphism and legitimacy requirements, companies might change their behaviors to be seen as sustainable to survive in a competitive environment. If companies are not able to change, then either they risk going out of the market or resorting to greenwashing by accepting information asymmetry to maintain legitimacy (He et al., 2020; Hummel and Schlick, 2016; Srivastava et al., 2021). Even if companies survive, they might think of shifting operations to a pollution haven (Li and Zhou, 2017). Therefore, linear institutional pressure and legitimacy requirements might not be equally effective in the long run. There is a need for balance in the interaction of multiple actors’ trajectories in the macro environment. Here macro environment refers to major uncontrollable and external forces where a company operates. In this regard, I pose the next research question.

RQ4: What are the factors that influence the relationship between sustainability and financial performance?

RQ4 aims to examine the macroenvironmental factors that influence the relationship. However, in the business environment at a micro or company level there might be a few influential factors that could play a role in determining the relationship. As one of the aims of this thesis is to uncover macro and micro business environmental factors, therefore it would be interesting to capture microenvironmental factors that might influence the nexus to get a complete picture. Here, the microenvironment represents factors at the company level. The concept of micro-level factors is emerging for creating new organizational values (Ahmad et al., 2021), and it has been further argued that organizations that recognize and apply this value in their business operations are considerably more likely to achieve their sustainability goals than their competitors (Ahmad et al., 2021). There are many issues involved when we talk about these factors, but the main one is embedded in corporate governance mechanisms (Walls and Hoffman, 2013). It is now evident that proper corporate governance is the precondition for creating organizational values, as well as

14 Pollution haven is a concept similar to a tax haven; firms seek to avoid the cost of stringent environmental regulations by shifting operations to a polluted and environmentally ignorant country.
implementing and monitoring sustainability strategies at the company level (Thomsen, 2004; Benn and Dunphy, 2007; Huse, 2008; Walls and Hoffman, 2013). In stakeholder-oriented business, sustainability is highly focused and part of the main discussion at top management levels (Setó-Pamies, 2015). Good corporate governance that contributes to the well-being of business, society, and environment can satisfy all the stakeholders’ needs (Aras & Crowther, 2008; Ehikioya, 2009). Many studies indicate that new organizational value creation and significant corporate governance can be achieved, which effectively turns an organization’s microenvironment towards sustainability practices when women participation on the management board is ensured (Ahmad et al., 2021; Birindelli et al., 2019; Gangi et al., 2019; García Martín and Herrero, 2020; García-Sánchez et al., 2018; Khan, 2010; Lu and Herremans, 2019; Walls and Hoffman, 2013).

Women’s participation on management boards (WoB) is encouraged to ensure gender equality and, of course, to motivate the entire female workforce (Brieger et al., 2019). In addition, UN Sustainable Development Goal number 5 urges companies to achieve this to contribute to the 2030 agenda of sustainable development (Birindelli et al., 2019). Many Western European countries voluntarily adopted gender quotas, understanding their benefit, whereas CEE countries are lagging behind. A few even implemented mandatory gender quotas as law, including Norway, France, Belgium, the Netherlands, and Italy. So following the gender movements and social initiatives I would like to examine their impact, and the thesis asks the following research question in the European context.

**RQ5: Do women on corporate boards ensure corporate sustainability performance?**

Previous literature on the topic of WoB and corporate social responsibility (CSR) (i.e., Post et al., 2011), social role theory, and initiatives by a few Western European countries signal that there might be a positive impact of WoB on corporate sustainability practices (Adams et al., 2023). However, the question remains: what is the minimum board composition required in this regard?

In June 2022, the European Parliament and the Council decided that by 2026 companies will need to have 40% women among nonexecutive directors or 33% among all directors (EU Commission, 2022). However, a directive proposed in 2012 to implement 40% fixed gender quotas for

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15 This thesis holds that CSR and corporate sustainability practices are NOT the same. The former is only a part of holistic sustainability practices, whereas the latter is considered holistic.
nonexecutive directors for EU-listed companies was rejected by the European Council later in 2015 (Leszczyńska, 2018; Nuber and Velte, 2021). Understanding the influence of women in corporate governance on sustainability, as well as revealing the minimum threshold of WoB requires scientific research. Much of the previous research has focused on issues relating to women on boards of directors, yet the WoB composition, specifically a minimum percentage (in a relative number) of women participation on boards to ensure a synergistic impact on sustainability and financial performance remains to be examined. Therefore, the following research question is posed.

*RQ6: What is the minimum threshold (relative number) of WoB that ensures a synergistic impact on sustainability and financial performance?*

### 1.4.1 An overview of the idea and research questions

This section is designed to provide readers with an overview of the thesis's main idea. The fundamental purpose behind asking six secondary research questions is to piece together a jigsaw puzzle in order to answer the main research question. The main research question and specification are given below in table 1.

**Table 1. Conceptualization of the main and secondary research questions**

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Contributions</th>
<th>Addressed in paper(s)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>The main research question of the thesis</td>
<td><em>What is the nexus between corporate sustainability and financial performance?</em></td>
<td>✓</td>
</tr>
<tr>
<td>RQs 1 &amp; 2</td>
<td>Mapping and conceptualizing existing phenomena</td>
<td>✓</td>
</tr>
<tr>
<td>RQ3</td>
<td>Capturing regional and industry-specific factors</td>
<td></td>
</tr>
</tbody>
</table>

*Here, synergistic indicates a critical mass effect.*
<table>
<thead>
<tr>
<th>RQ4</th>
<th>Capturing macro business environmental factors</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQs 5 &amp; 6</td>
<td>Capturing micro business environmental factors</td>
<td>✓</td>
</tr>
</tbody>
</table>

1.5 Contribution of the thesis

This thesis proposes that social and green innovation is a process that meets the present needs of the companies and their stakeholders while protecting, sustaining, and improving human and natural resources to meet future needs (adapted from Brundtland Report, 1987). In practice, these processes are linked to companies’ sustainability and financial performance. However, the purpose of addressing the above six research questions is to understand how the concept of sustainability and financial performance has evolved in academia and how the macro and micro business environmental factors affect the nexus. Gaining knowledge on the above matters will eventually help to conceptualize and contribute to the following idea:

*What would be a (rational) comprehensive framework to conceptualize the relationship between corporate sustainability and financial performance?*

This thesis contributes to sustainability accounting and finance literature by investigating macro and micro business environmental factors in determining the nexus of corporate sustainability and financial performance. In this regard, it maps the existing literature to identify hot and blind spots through bibliometric analysis and contributes to filling in the gaps with the help of quantitative analyses using data from European countries, applying various static and dynamic econometric models. The contribution of this thesis is threefold. First, the thesis identifies that the existing theories used in academia to determine the nexus of corporate sustainability and financial performance is undertheorized, and there is room to develop and/or apply new theories. Second, there are multiple actors interacting in the macro business environment to determine the relationship, and there is a need for a balance in the interaction to gain positive outcomes from the mutual connections. Finally, this thesis empirically shows that, in the European context, at least 30% women on boards is necessary in order to have a synergetic impact towards corporate sustainability in the micro business environment.
1.6 Structure of the thesis

This thesis is divided into two parts. Part 1 represents the introductory text (a cover or Kappa) for compiling four research articles. The purpose of part 1 is to lay the foundation to explain multifaced factors to uncover the nexus between corporate sustainability and financial performance. Part 2 presents four appended articles. Each article has a different topic, but they are all connected to the concept of corporate sustainability and financial performance. The remainder of the chapters of part 1 cover the following topics. Chapter 2 deals with the theoretical framework. Chapter 3 describes the methodological choice of the study. Chapter 4 deals with the summary of the appended papers, and finally, chapter 5 discusses the most important findings and contributions in the light of theories as well as emphasizing limitations and suggestions for future research. Figure 1 shows the structure of this thesis.

Part 1

- Chapter 1 • Aim, research background and questions
- Chapter 2 • Conceptual and theoretical frameworks
- Chapter 3 • Research design, strategy and methodology
- Chapter 4 • Brief summary of the appended papers
- Chapter 5 • Discussion, conclusion and future research directions
Part 2

Appended papers

Figure 1. Structure of the thesis.
Chapter 2: Conceptual and theoretical frameworks

This chapter provides a basis for understanding the theoretical underpinning of corporate sustainability and financial performance. The traditional theories applied to conceptualize the relationship are undertheorized. This thesis elaborates on the conceptual repertoire to understand the nexus with the multi-theoretical approach by capturing macro and micro business environmental factors. A conceptualization of the theoretical framework is also proposed.

2.1 The conceptual framework

The purpose of the following subsections within the conceptual framework is to acquaint the reader with the concepts of corporate sustainability and financial performance applied in this thesis.

2.1.1 Corporate sustainability practices (CSP)

For a general audience, the first thought that comes to mind about corporate sustainability practices is environmental sustainability. Of course, environmental sustainability is the most important, because none of the ecosystem’s other sustainability would continue without it. However, there are hundreds of different definitions exist for corporate sustainability practices, and various people define it in various ways, such as business practitioners versus scholars (Derqui, 2020; Danilovic et al., 2015). Even scholars blend the concepts of corporate social responsibility and corporate sustainability practices (Bansal and Song, 2017; Ashrafi et al., 2018). This thesis is in line with Bansal and Song (2017) that CSR and CSP are not the same (though similar but not the same). CSR has tended to take a normative perspective, while CSP has taken a system perspective, providing warning of business-driven failures in social and natural systems (Bansal and Song, 2017). In spite of these different understandings, it is now evident that the notion of corporate sustainability is not limited to environmental sustainability alone. To understand the inherent meaning of CSP, we need to recap history a bit. Robert A. Heinlein (1973) highlighted, with his famous quote, that which “ignores history has no past—and no future.”

The relationship between corporate sustainability and financial performance has become a point of interest for researchers and practitioners since the beginning of the eighties and received much attention after the publication of the Brundtland report in 1987. Capitalizing on the concept since
then, academics and practitioners have introduced different ideas such as corporate social performance (CSP) (Clarkson, 1995; Wood, 1991), triple bottom line (Elkington, 1997), corporate social responsibility (CSR) (Carroll, 1999), and stakeholder capitalism (Freeman et al., 2007), social entrepreneurship (Mair and Martí, 2006), corporate citizenship (Matten and Crane, 2005), and integrated reporting (by the International Integrated Reporting Council, established 2010) to guide corporate sustainability practices and make the concept beneficial to a greater audience. There are many more movements that occurred during the same decade, such as the King I and King II reports, which finally led to corporate sustainability reporting or disclosure processes. All of these are connected to sustainability disclosures and stakeholders’ well-being. However, capitalizing on the Brundtland Report, the most common and relevant definition of corporate sustainability is the following: implementing business strategies and activities that meet the present needs of the companies and their stakeholders while protecting, sustaining, and improving social, human, and natural resources to meet future needs.

So far, as a result of globalization and industrialization, corporations’ footprints have damaged the planet’s nature and environment by discharging hazardous waste, severely impacting ecosystems. Damage has also occurred in the form of altering the natural structure, chiseling away mountains to make room for roads to make the supply chain and lead time faster (Zhang et al., 2022). Single-use plastics used in packaging on a global scale are also causing soil fertility to decline (Zhang et al., 2022). In addition, CO₂ and other greenhouse gas emissions result in global warming (Kweku et al., 2018). Globalization and industrialization also contributed to the sweatshop problem of illegal labor or the exploitation of child labor, as evidenced by the Nike scandal (Peretti & Micheletti, 2017; Rosen, 2002). These problems are rooted in faulty corporate ethics and governance mechanisms. Clearly, the global community is looking for a solution. As previously stated, corporations have multidirectional influencing interactions and responsibilities towards the environment and society, which can be enforced with strong corporate governance mechanisms. Therefore, corporate sustainability practices should address environmental, social, and corporate governance issues together.

After the Enron scandal, the demand for financial accounting disclosures increased not only in the USA but all over the world, due to policy makers’ and investors’ awareness (Benston et al., 2004). In response to the information demand, even corporations provide additional information to satisfy capital market actors (Broberg et al., 2010).
However, in Europe, with the Non-financial reporting directive (NFRD), equal importance has been given to sustainability disclosures to ensure corporate responsibility (La Torre et al., 2018, 2020; Rahi et al., 2023a). Since 2017, the non-financial reporting directive EU/2014/95 has made it mandatory for certain EU companies to disclose their sustainability activities. Now more and more companies focus on disclosures and communications, due to institutional isomorphism. Earlier, it was not possible to compare sustainability activities among corporations the way it is done with financial activities. To overcome this problem, different agencies and rating organizations have come forward to generate comparisons based on corporate disclosure and activities following a certain methodology, which is now widely known as ESG rating or ESG score.\footnote{All the rating agencies have their own methodology to produce an ESG rating or score.}

ESG score has now become a yardstick to understand corporate engagement in sustainability practices (Khan, 2022; Rahi et al., 2022a, 2023). Like financial key ratios, ESG scores allow for relative comparison among corporations, even between different industries or countries. Therefore, it has become a crucial tool that permits stakeholders to comprehend the sustainability engagement of a corporation. Even institutional investors consider ESG “a key to long term value creation” (Crawford and Nilsson, 2023 p.256). The three components of ESG encompass various aspects of activities related to the environmental, societal, and governance mechanisms. For example, environmental sustainability ensures the resilience and durability of ecosystems that sustain human existence by minimizing pollution, biodiversity loss, and greenhouse gas emissions, in addition to managing waste, renewable energy, and energy efficiency. The social dimension is accountable for ensuring life quality, well-being, gender diversity, employee relations, equality, and human resource management. Finally, the governance dimension tackles internal control, processes, board diversity, independence, transparency of information, risk management, and so on.

Many renowned organizations are involved in providing ESG ratings. Bloomberg and Thomson Reuters Refinitiv Eikon are widely praised by analysts and academics for their accuracy and expertise in the field. Previous studies have also found that the databases are comprehensive
enough to include all the major listed companies in the world (Nuber and Velte, 2021; Rahi et al., 2022a; Shrivastava and Addas, 2014; Velte, 2017).

Usually, each ESG dimension receives an individual rating, and these are then combined with the mean value to receive an aggregated value, i.e., ESG score.\textsuperscript{18} This thesis used ESG score as a proxy for corporate sustainability practices (scores provided by the Thomson Reuters Refinitiv Eikon database). Theory and previous empirical evidence support this proposition. The score can be in the range of 0–100%. The higher the score, the better the disclosures and practices represented.

2.1.2 Corporate financial performance

Corporate financial performance is an indicator of a company’s activities over time to determine how successful and profitable a company is in generating profit. In general, an assessment of a firm begins with its current financial performance, determined by a combination of many measures or indicators. The following are widely used as key measures to understand and compare corporate financial health: return on assets (ROA), return on equity (ROE), earnings per share (EPS), economic value added (EVA), and Tobin’s Q. Empirical literature frequently uses ROA (e.g., Balakrishnan et al., 1996; Hitt and Brynjolfsson, 1996; Weill, 1992), ROE (e.g., Choi et al., 2010; Kai Wah Chu et al., 2011; Lee et al., 2016; Wang and Sarkis, 2013), EPS (e.g., Mousa et al., 2022; Velte, 2017), EVA (e.g., Kumar and Sharma, 2011; Tripathi et al., 2018) and Tobin’S Q (e.g., Choi et al., 2010; Lioui and Sharma, 2012; Wang et al., 2014) as indicators of business performance, since they imply profitability, efficiency, and market valuation. The primary goal of these measures is to evaluate corporate growth over time and even against competitors. Yet, the comparison is subjective in nature. Corporate financial performance can be categorized into two major categories: accounting and finance-based measures. The fundamental difference between these two are that accounting measures focus on capital reporting through historical value and finance measures focus on capital allocation based on market value. Companies usually, through annual reports, communicate accounting information to their interested stakeholders. Financial analysts

\textsuperscript{18} Different rating organizations have different methodologies. This thesis discusses one typical approach. To learn more about the rating, readers are requested to visit rating agencies’ websites.
use accounting information, among other information, as a basis to determine finance-based financial performance (Breton and Taffler, 2001; Nicoleta-Cornelia et al., 2012). As stated, both types of measure are subjective, and neither is superior to the other.

Reporting on corporate performance is regulated and harmonized all over the world. Currently, more than 100 nations legally require that corporations operating within their boundaries adhere to International Financial Reporting Standards (IFRS) guidelines (Ball, 2006). This harmonization has not only helped companies to extend their business activities but also helped investors and policy makers to understand the nature of corporate activities, especially for investment and tax purposes. Though many countries have their own Generally Accepted Accounting Principles (GAAP), at a higher level all the major counties have agreed to narrow the gaps with IFRS. For example, the US Financial Accounting Standards Board (FASB) worked closely with the International Accounting Standards Board (IASB) to reduce gap between IFRS and the US GAAP (Baudot, 2014). Foreign companies operating in the USA are allowed to report their financial statement in accordance with IFRS, in which case US GAAP is not a legal requirement for reporting (Nobes and Parker, 2020). In 2002, the EU adopted IFRS and required all their member states to implement it starting in 2005 (Jermakowicz and Gornik-Tomaszewski, 2006; Larson and Street, 2004; Hamberg et al., 2013). This is how corporate financial reporting is harmonized and corporate financial performance has become a unit of measurement to understand corporate progression all over the world through a common language. There are many factors that directly or indirectly influence the development of corporate financial performance (Chen, 2007; Irani et al., 2021; Lopatta et al., 2017; van Essen et al., 2013). In general, these factors can be divided into two categories, macro and micro business environmental factors. Micro business environmental factors are internal (at the firm level), such as management board quality (characteristics, structure and process), gender diversity, vision, sustainability practices, corporate governance mechanisms, and so on. Macro business environment deals with the macroeconomic environment of doing business, GDP growth, inflation, GDP per capita, institutional qualities (IQs), and so forth. At this point, however, readers are informed that corporate financial performances depend on various factors.

As signaled previously, this thesis used both accounting-based measures such as ROA, ROE, EPS, and finance-based measures such as EVA and Tobin’s Q to understand both historical progression and market valuation. For the details on ROA, ROE, EPS, EVA, and Tobin’s Q and other specifics,
readers are referred to the empirical sections of appended papers. The intended purpose of this section is to serve as a foundation for understanding the concept of corporate financial performance. But the abovementioned measures are in common use to understand corporate progression over time, and previous studies support this proposition (Balakrishnan et al., 1996; Choi et al., 2010; Kumar and Sharma, 2011; Lioui and Sharma, 2012; Mousa et al., 2022).

2.2 The theoretical framework

In the subsections of the theoretical framework, first I will discuss why the single theory approach, common in the field of accounting and finance, is unable to capture the nexus between corporate sustainability and financial performance. Thereafter, I will explain why there is a need to apply multiple theories – a multi-theoretical approach. This approach allows me to combine insights and conceptualization from various theoretical perspectives to analyze complex phenomena.

2.2.1 Stakeholder theory—a new communism?

“Global warming is a hoax. It is a money-making industry” (Worland, 2019)

“The new green deal and whatever the hell they call it” (Quinn, 2019)

“Show me the scientists. Scientists have very big political agendas” (Smith, 2018)

Can you guess who made the above three statements? Yes, the above three statements were made by the former president of the United States, Donald Trump, in his various speeches and TV interviews. These speeches may represent his personal opinion (which we do not know) or political agenda (which is not clear either). However, an opinion article by a New York Times columnist argued that Republicans are less supportive towards environmental actions (Krugman, 2022). In addition, it has been further argued that USA and Anglo Saxon European counties, with their focus on capitalism, lag behind on sustainability issues (Dumay et al., 2016; Rahi et al.,

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19 As the author of this thesis, I have no views or affiliations with any political parties in the United States.

20 The Author does not have any political interest. This thesis posits a neutral view on the political issues.
The main reason for pointing out these two nations is that industrial development and technological progression came through their hands, and they have polarized world business on the view of global capitalism (Antonio and Bonanno, 2000; Hertz, 2002). In such a case, isn't it self-contradictory to push companies towards the well-being of their stakeholders while the world economy is based on capitalism? According to Ambler and Wilson (1995), in the UK and the USA the major political parties have recognized that any right to be a stakeholder has to be earned. First, if there is an issue of earning a stake, then how would Mother Nature earn its stake, being a nonhuman component in the theoretical model? In this view, a further question arises: how would society-nature dualism be solved by the stakeholder theory? The dualism view posited by organizational theorists is considered as “a fractured epistemology which separates humans from nature and truth from morality” (Gladwin et al., 1995). They further consider dualism a serious methodological mistake. Second, living in a global capitalist economy, if people are extensively forced to adopt stakeholder theory, it will decrease social welfare despite its proponents’ claims to increase it, like the unsuccessful communist and socialist movements during the twentieth century (Jensen, 2002). In this view, Levitt (1958), as cited by Ambler and Wilson (1995), argued that stakeholders’ welfare is the job of the government, not of the corporation. Levitt (1958) sees corporate responsibility for welfare as a sign of danger. This view is supported by neo-classicists: due to resource scarcity, corporations shouldn’t get involved in welfare, nor should society expect them to do so (Ambler and Wilson, 1995). In addition, the societal stake is unquantifiable and thus incomparable.

The contribution of stakeholder theory, of course, is a valuable development of classical business philosophy. But focusing on the applicability of the theory, it goes beyond the boundaries of practicality (Ambler and Wilson, 1995). Therefore, stakeholder theory might not be entirely appropriate in the modern business environment. But at the same time, up to a certain degree the theory has applicability based on social construction (a contract between society and organizations), and this thesis does not deny it. However, there is a need to comprehend pragmatism and apply a new theoretical perspective in this regard.
2.2.2 Institutional and legitimacy theories—are they strict parents?

Institutional theory was first theorized by Meyer and Rowan (1977) with their seminal work “Institutionalized Organizations.” The concept was further researched by DiMaggio and Powell (1983), who introduced the concept of new institutional isomorphism. These authors mostly focused on institutional isomorphism and organizations’ collective rationalism. Holding a similar view, Suchman (1995) introduced legitimacy theory. The main theoretical view of both theories is to shape corporate behavior through institutional isomorphism or with legitimacy requirements. The former is concerned with how an organization conforms to norms and values, whereas the latter is concerned with what an organization must do to maintain legitimacy in society’s eyes. In accordance with institutional isomorphism or legitimacy requirements, companies need to change their behaviors to be seen as metaphorical good children of parents. If corporations are unable to adjust, they risk being driven out of the market or turning to greenwashing by using information asymmetry in order to maintain legitimacy (He et al., 2020; Hummel and Schlick, 2016; Srivastava et al., 2021). Institutional and legitimacy theories emphasize one-way communication to shape a company’s behavior by exercising interests, power, and fear (DiMaggio and Powell, 1983; Oliver, 1991; Rahi et al., 2023a). These problems can be seen in the metaphorical perspective of the ideology of strict parenting: parent ideology will always be served while ignoring children’s opinions. This is a matter in need of further consideration since institutional pressure does not consider the contextual situation; power distance and hierarchy always hamper the relationship. This conceptual conformity transforms institutional theory into a hierarchical, nondemocratic, and power-centered theory (Lounsbury, 2008; Modell et al., 2017).

Since the beginning of the industrial revolution, following capitalism, corporations are getting profit-centric and very focused on maximizing profit and on the value of capital providers following shareholder theory (Mansell, 2013). To shape corporate behavior and turn their focus to the stakeholders as they operate within the society, there is of course a need for guidance. In this thesis, I do not deny the contribution of institutional and legitimacy theories. I agree that these theories could be a starting point to guide corporate behavior in the short term. But in the long term, the theories might not be appropriate to shape corporate behavior towards sustainability, as

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21 Shareholder theory has never been a point of focus in corporate sustainability research (in a positive way). Therefore, this thesis doesn’t bring that discussion into this chapter.
corporations might shift their operations to pollution havens. This is similar to our social construction, in which when children become adults, their relationship with their parents may totally break down due to childhood memories of rigid parenting (Gil, 2009). At this stage, it suffices that the thesis points out the problem with institutional and legitimacy theories to conceptualize the long-term relationship towards corporate sustainability practices. In the next section, I propose a sketch for the solution.

2.2.3 Seeking a theoretical framework with the lens of a multi-theoretical approach to model the nexus

This thesis highlights the limitations of stakeholder, institutional, and legitimacy theories due to the absence of mutual interaction and lack of communication. In addition, there are serious philosophical flaws in explaining how a stake should be earned by nonhuman components. At the same time, I admit that those theories can apply to a certain degree based on social construction, of course, without exercising power and fear by smoothing communication between corporations and stakeholders in the macro business environment. At this point, readers can perhaps recognize that a single theory might not be sufficient to explain the complex phenomena. There is a need for a (theoretical) model that can conceptualize the nexus between corporate sustainability and financial performance and connect macro as well as micro business environmental factors. Roberts (2001) recognized a similar need, suggesting a combination of accountability and agency theory-based approaches in promoting corporate accountability. In response, Christopher (2010) has proposed a multi-theoretical approach with a four-dimensional matrix, combining stakeholder, agency, stewardship and resource dependency theories in (corporate) governance research to describe four difference characteristics of organizations. The root of a multi-theoretical approach can typically be traced back to the recognition that complex phenomena or issues may not be fully understood or explained by a single theoretical framework. Instead, it arises from the acknowledgment that multiple theoretical perspectives can provide a more comprehensive and nuanced understanding of a problem. Eisenhardt (1989) observed the hindrance of applying a single (agency) theory; s/he recommended using multiple theories by looking beyond the economics theories. In the article, Eisenhardt (1989) further provides an example of “using agency theory with complementary theories.”
However, the multi-theoretical approach aims to synthesize insights from various theoretical paradigms to gain a deeper and more holistic (down-to-earth solution) understanding of the topic at hand. It is rooted in the belief that different theories may offer complementary insights and that their integration can lead to a more robust theoretical foundation or practical application. Figure 2 may help in grasping the need for a multi-theoretical model for this thesis.

![Figure 2. Conceptualization of actors’ mutual relationship in the macro environment.](image)

In the figure, all the relationships are connected with a wide relationship spectrum, where macro and micro business environmental elements interact mutually to achieve a common goal. The relationship mechanism within the micro business environment is focused on microenvironmental goals, but those goals are created, shaped, and executed based on the interaction of macro business environmental actors. In operative terms, corporate sustainability and financial performance are the outputs of microenvironmental actors, and this output depends on the interaction of other macroenvironmental actors. In this way, connected network governance helps to ensure mutual goals.

### 2.2.4 The nexus between corporate sustainability and financial performance under the lens of network governance theory in the macro business environment

Network governance theory (NGT) is primarily seen as a theoretical approach within the field of social science. Scholars from diverse disciplines such as public policy, administration, sociology, political science, management, and economics have contributed to the development of this
multidisciplinary theoretical framework, building upon traditional theories such as social capital, resource dependency, collective action and advocacy coalition framework theories (Berry et al., 2004; Hu et al., 2016; Kapucu and Hu, 2020). Therefore, NGT is not rooted in any philosophical paradigm.

The primary root of NGT can be found in the work of Rhodes (1997), Klijn and Koppenjan (2000), and Sørensen and Torfing (2005) under the concept of (democratic) collaborative networks, which later evolved into NGT. However, the deeper roots of collaborative governance networks can be traced further in intergovernmental cooperation (Emerson, Nabatchi, & Balogh, 2012) and cooperative federalism (Elazar, 1964; Kapucu and Hu, 2020; Kettl, 2006).

The theory is built upon the idea that collaborative relationships and interactions among various network actors, including government agencies, businesses, nonprofits, and communities, are central within the context of interorganizational networks (Kapucu and Hu, 2020). This theoretical conceptualization can be replaced to define any network. In this case, Kapucu and Hu (2020) emphasized defining networks before articulating the relationship. In such a scenario, in operative terms, it can be argued that corporate sustainability and financial performance are the output of microenvironmental actors whose output is dependent on the interaction of other actors in the macro environment. Other common actors in the macro business environment are typical external stakeholders, government and institutional qualities, and even other economic factors. The relationship can be bilateral or trilateral or can interact simultaneously and multilaterally. In short, NGT presents a connected universe, movement, and flow of relationships within the network. The theory provides a framework for understanding how collaborative networks of actors interact to promote corporate sustainability initiatives, which in turn can influence financial performance. The relationships, decision-making processes, information exchange, resource allocation and policy formulation within these networks all contribute to shaping the nexus. Figure 3 conceptualizes the role and relationship of actors in the macro business environment.
As briefly introduced earlier, actors can be divided into two categories: macro and micro business environmental actors. So far, this thesis has discussed the role of macro-level actors. Section 2.2.5 will discuss the role of micro (company) level actors, under the lens of a multi-theoretical approach, in conceptualizing corporate sustainability and financial performance.

2.2.5 Conceptualizing the nexus between corporate sustainability and financial performance in microbusiness environment using a multi-theoretical approach

An organization’s output is dependent not only on the interaction of macro-business environmental actors but also on the interaction of multiple micro-business environmental actors at the company level. The actors in the microenvironment (company level) can be categorized as the board of directors, chief executive officer, and other managers, employees, and owners (shareholders) within the intra-organizational network. Figure 4 conceptualizes the interaction of actors in the micro business environment.
From the relationship's conformity, it can be inferred that network governance mechanisms exist in the microbusiness environment (company-level network governance relationship). In the appended papers, several theories have been applied to explain the influence of the abovementioned relationship on the nexus of corporate sustainability and financial performance in the micro business (company level) environment such as agency, stakeholders, and critical mass theories, showing how these theories (multiple theories) could be a complementary to each other to achieve a common goal of sustainability and thus financial performance. All of these theories and the role of the intra-organizational network governance mechanism are illustrated in figure 5.

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22 In paper IV two additional theories, the social role and resource-based view, have been applied to support critical mass theory.
To produce favorable results, managers need to create an environment for mutual interaction to balance the relationships, such as stakeholder’s value creation versus shareholder’s interest; otherwise, agency problems might result. Studies by Rosener (1997) and He and Jiang (2019) argued that to reduce the agency problem, women’s participation on the management board (WoB) would be highly effective. The notion is that gender balance on the management board, similar to our family composition, brings symmetry to decision making and thus avoids agency problems, as women are considered to be adroit at problem solving, having strong skills to deal with ambiguity, conflict, and uncertainty. In addition, women are considered as engaged and focused on achieving corporate goals towards sustainability and financial performance. Previous studies argued that three women on a board are a magical number to ensure a critical mass effect (Konrad et al., 2008; Kramer et al., 2006). This thesis holds that an absolute number of women on a board does not address the matter of the minimal threshold composition in a relative number. An absolute number such as two or three doesn’t answer the minimum percentage required for women's participation. The outcome of the thesis suggests that 30% of WoB creates a critical mass effect in contributing to corporate sustainability, which will lead to financial performance by maintaining the micro governance network relationship (company level) in the European context.

2.3 An overview of hypotheses and theories applied in different papers

Applying different theoretical argumentations, I derived a number of hypotheses in the appended papers. In general, theoretical explanations aided in examining the problem through one or more theoretical lenses, and then one or more hypotheses were developed to facilitate empirical investigation. Chapter 3 deals with empirical analyses and procedures in detail. However, the table below provides an overview of theories and hypotheses that appear in the appended papers.

Table 2. An overview of hypotheses and theories

<table>
<thead>
<tr>
<th>Papers</th>
<th>Theories</th>
<th>Hypotheses</th>
<th>Theoretical categories</th>
<th>The broad theoretical lens</th>
</tr>
</thead>
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<tr>
<td>I</td>
<td>NA</td>
<td>NA</td>
<td>Mapping the theories of existing literature</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Agency and Stakeholder theories</td>
<td>H1: There is a significant relationship between sustainability and financial performance in the Nordic context.</td>
<td>Micro business environment</td>
<td></td>
</tr>
</tbody>
</table>
| III | Network Governance theory | H1: There is a positive association between sustainability performance and financial performance in the European context.  
H2: Institutional qualities are positively associated with firm sustainability and financial performance.  
H3: Interaction between institutional qualities and economic growth help to ensure sustainability and financial performance. | Micro and macro business environment  
Multi-theoretical approach |
H2: A minimum threshold (relative number) of women on boards ensures synergetic impact on sustainability performance. | Micro business environment |
Chapter 3: Research methodology

The chapter deals with the research methodology of the appended papers. The discussion starts with the philosophical viewpoint and approach to selecting methods, then moves on to the practical methods, such as data collection, sample selection, and analysis methods. Finally, the chapter concludes with a discussion of the validity and reliability of the methodological choice.

3.1 Research philosophy, methodological choice, and approach

This section provides a discussion of the fundamental philosophical position underlying the research, in particular the papers appended to this thesis. The discussion is necessary to understand the methodological choice and philosophical assumptions that underpin the research approach (Moon and Blackman, 2014; Saunders et al., 2009). The main philosophical view, especially in social science research, is divided into ontology and epistemology. The ontological view deals with the nature of reality or concern with the nature of social phenomena (Saunders et al., 2009). On the other hand, epistemology deals with what constitutes acceptable knowledge. The epistemological view is also concerned with how we know and what we know (Burrell and Morgan, 1979). There is another philosophical stance that cannot be placed in those two categories: pragmatism. Pragmatism does not have an exact position in ontology or epistemology and has been criticized as a philosophy (Maarouf, 2019). But pragmatism combines the quantitative and qualitative paradigm perspectives as two integrated, not contradictory, philosophies (Maarouf, 2019; Moon and Blackman, 2014). Pragmatism recognizes the distinction between ontology and epistemology and offers an alternative paradigm (Hall, 2013; Morgan, 2014).

The first appended paper, a hybrid literature review, takes the philosophical stance of pragmatism; both quantitative and qualitative strategies were used in the study to answer research questions, proposing that both positivist and interpretivist viewpoints are equally appropriate. The further rationale is that the data analysis was performed using both quantitative bibliometric coupling and qualitative thematic content analyses. Therefore, to argue for a philosophical stance, the pragmatism may appear to be suitable. In this context, the study employed a deductive research approach. Deduction was chosen because the findings of this paper were derived from existing
literature (from the Scopus archive). Given this rationale, the deductive approach was deemed the most suitable.

The second, third, and fourth papers hold the ontological view of objectivism and the epistemological view of positivism. The main rationale for applying objectivism is that secondary data were used to prove or falsify hypotheses. This may suit the ontological view that social reality exists objectively, and that reality cannot be constructed on individual rationality because reality is external to an individual’s judgment (Collis and Hussey, 2014). On the other hand, evidence that the paper is founded on epistemological positivism is that positivism considers social phenomena as valid knowledge, if it is observable and measurable through empirical objective evidence, in this case statistically (Collis and Hussey, 2014). In addition, positivism develops a clear and systematic approach to observe and measure the numerical data, which aims to test the causal relationship between corporate sustainability and financial performance by hypotheses testing. Under positivism, the framework allows me to do statistical testing of quantitative data to generate knowledge and present the nexus between corporate sustainability and financial performance objectively. Therefore, papers II–IV take the epistemological perspective of positivism and adopt a quantitative strategy to verify/falsify hypotheses. Since I have chosen the objectivism view under ontology, and my identification of knowledge matched with the assumptions of positivism, therefore the mentioned three papers stand on the side of positivism under the philosophical view of epistemology. By aligning with this philosophical view, a deductive research approach was taken. The logic behind the deductive approach is that the result is rationally derived from a set of data. If all the premises are true, so is the conclusion. Considering all the facts, overall, this thesis takes a pragmatic and positivist philosophical perspective.

3.2 Data collection

The literature review for the first paper used archival data from the Scopus database. Appended papers II–IV used secondary data collected from several databases, such as the Thomson Reuters Eikon database, the World Bank, and the Global Economic database. Among those, the Thomson Reuters Eikon database was predominantly used for sustainability and company-specific accounting/financial data. Other country-specific and macroeconomic-related data were collected
from the World Bank and the Global Economy databases, respectively. Table 3 below provides an overview of databases used in the appended papers.

Table 3. List of databases used in the thesis

<table>
<thead>
<tr>
<th>Databases</th>
<th>Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>Scopus</td>
<td>✔</td>
</tr>
<tr>
<td>Eikon</td>
<td>✔</td>
</tr>
<tr>
<td>World Bank, Global Economy database</td>
<td></td>
</tr>
</tbody>
</table>

Concerning the quality of databases, academics, professional analysts, and economists widely rely on Scopus, Eikon, and the World Bank Global Economy databases (Huawei, 2022; Nadeem et al., 2020; Quintana-García et al., 2022; Walker et al., 2016). Among them, Eikon provides a unique sustainability index and ranking, including the ESG score, which has widely been used by academic and professional analysts (Kirby, 2021). In addition, the Eikon database is equally reliable for firm-specific accounting and financial data. Previous studies also acknowledged that the database is comprehensive enough to include all the major listed companies worldwide (Nuber and Velte, 2021; Quintana-García et al., 2022; Rahi et al., 2022a). Additionally, the database is trustworthy for providing relevant, accurate, auditable, and systematic data (Nadeem et al., 2020; Quintana-García et al., 2022). Concerning quality and reliability, all the mentioned databases in table 3 are comprehensive enough to pass the quality criterion.

3.3 Sample selection

The first paper appended to this thesis is a literature review. Samples were collected from the Scopus database on the subject area of corporate sustainability and financial performance between 2000 and 2021. The initial sample provides 504 articles. The key motivation for choosing Scopus
over the Web of Science (WoS) database was to include more significant publications that could help answer research questions. Scopus has over 20,000 peer-reviewed journals from reputable publishers such as Elsevier, Emerald, Taylor & Francis, Springer, and others.

Appended papers II–IV used secondary data. The sample firms were all listed firms in the European stock exchanges. The sample of listed firms was taken because, by the EU non-financial reporting directive EU/2014/95, all the major listed firms are required to publish sustainability-related disclosures (those who meet the requirements). In addition, all the listed firms are legitimately responsible for publishing accounting and financial data. Therefore, to capture the nexus between corporate sustainability and financial performance, the listed firms serve the purpose of this thesis.

In the second paper, I used data from Nordic-listed financial institutions as Nordic countries are well known for providing an institutional framework that works towards sustainability. In addition, this was my first empirical paper. Therefore, I planned to begin where I live and cover a small geographical area (the Nordic region), with the eventual goal of covering the rest of Europe with subsequent research. The rest of the papers (III and IV) used European data. The key reason for taking European data is because European countries are heavily involved in mutual trade, business, and investment. Non-EU but European countries frequently adopt EU trade and investment policies to maintain EU standards (Dupont and Sciarini, 2001; Rahi et al., 2023a; Samson, 2008). This is considered to be paying the price to get access to the European market (Goldthau and Sitter, 2015; Rahi et al., 2023a). For example, Norway and Switzerland are not within the European Union yet are connected via the European Economic Area (EEA) and bilateral or free trade agreements. The table below provides an overview of samples in the appended papers.

Table 4: An overview of the samples in the appended papers

<table>
<thead>
<tr>
<th>Papers</th>
<th>Nordic</th>
<th>Europe</th>
<th>Years</th>
<th>Number of Countries</th>
<th>Number of Industries</th>
<th>Number of Companies</th>
<th>Number of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>N/A</td>
<td></td>
<td>2000–2021</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>II</td>
<td>✔</td>
<td></td>
<td>2015–2019</td>
<td>4</td>
<td>1</td>
<td>39</td>
<td>152</td>
</tr>
</tbody>
</table>
Finally, the sample size is comprehensive enough to argue for the reliability and validity of the results. To learn the specifics about the country and industry categories, readers are referred to the empirical sections of the appended papers.

### 3.4 Data analysis

This section provides a detailed explanation of the method for data analysis in the appended papers. First, I start the discussion with bibliometric and content analysis and then move forward to empirical analyses in chronological order. For all the empirical papers, univariate, bivariate, and multivariate analyses were performed to better understand the data and relationships, and to explain the results.

#### 3.4.1 Bibliometric and content analysis— a hybrid analysis

For paper I, a hybrid analysis was conducted, combining quantitative and qualitative research strategies. Using data from the Scopus database, with the help of Biblioshiny (in R package) and VosViewer software, bibliometric coupling and keyword cooccurrence analyses were conducted following the quantitative research strategy. The main rationale for keyword cooccurrence analysis is to produce a thematic map in order to understand the research agenda in the field of corporate sustainability and financial performance. The bibliometric coupling analysis technique further helps to describe the intellectual structure and evolution of the literature in the chosen field (Bretas and Alon, 2021; Elango, 2019; Zupic and Čater, 2015). Bibliometric coupling is considered to be one of the most used techniques to identify the similarity between two documents using the number of references shared among them. The application of this technique helped to identify three clusters in the literature review process. These techniques are transparent and reproducible, and they improve the quality of research, while at the same time reducing personal bias. The traditional
literature review has long been accused of incorporating personal bias in the sample selection process (Massaro et al., 2016; Rew and Wong, 2006), whereas bibliometric coupling is comparatively beyond this accusation.

After obtaining clusters of articles applying a bibliometric coupling, I carried out a qualitative thematic content analysis to identify patterns, focus, critique, and emphasis in the research field. A number of themes were identified through the content analysis process, including (a) Sustainability and competitive advantage, (b) Impact of corporate social responsibility (CSR) on financial performance, (c) Impact of financial performance on social innovation, (d) Board (gender) diversity and CSR, (e) Influential factors affecting the relationship between sustainability and financial performance, (f) Sustainability and bank performance, (g) Sustainability and financial performance, (h) Green dynamism and financial performance, (i) Performance in economic crisis, (j) Foreign ownership and environmental disclosure. The details are explained in the article. This technique is helpful for gaining sufficient insights and confidence; as a result, the study was able to track hot and blind spots in the research field, which helped to direct future research agendas on the topic of corporate sustainability and financial performance. In brief, the hot spots showed that sustainable development, environmental management, and financial performance have been widely researched by academics. The blind spots suggest that the relationship of sustainability and financial performance was examined by researchers by closing one eye, by which I mean that earlier research determined the relationship by accentuating that firms are solely responsible for sustainability activities and thus financial performance, while ignoring macroenvironmental factors. However, one article by (Xiao et al. (2018) signalled the impact of macro level factors. Apparently, there is still much to discover about the factors that may affect the relationship.

3.4.2 Univariate analysis

Papers II, III, and IV include univariate analysis. This analysis helps to understand the characteristics of one type of data, as the goal of univariate analysis is to describe a single variable’s distribution in the sample. It helps to summarize data and find patterns associated within it. The analysis includes mean, median, standard deviation, minimum, maximum, and percentile values. Before conducting multivariate analysis, conducting univariate analysis helps to ensure that the
data lies within the normal range, no abnormality is detected, and the data align with previous research in a similar context. The issue of missing data is usually detected at this stage as well. Variables with too much missing data were excluded from the data list. A tolerable amount of missing data (i.e., less than 10%) were replenished with either series mean or linear interpolation to create a balanced panel data set (Hair et al., 1998). For the purpose of brevity, here I have discussed only the key aspects of the univariate analyses applied in papers II to IV. For specifics, readers are directed to the univariate analysis section of the specific paper.

3.4.3 Bivariate analysis

In all the empirical papers, bivariate analysis was performed. Bivariate analysis shows the relationship of two variables in the form of a correlation matrix. This analysis, primarily signaling a positive and/or negative relationship between two variables, is used to detect problems of high correlation before running the multivariate analysis. However, a high correlation always creates noise in the econometrics model, which might lead to incorrect inference. The conventional acceptable value of bivariate analysis is less than approximately 80%. In all the appended papers, some issues regarding high correlation were identified among variables. Therefore, the following two remedies were taken. First, the highly correlated variables were never brought into a single econometric model. Second, the variance inflation factors (VIF) test was separately performed for collinearity diagnosis and found to be within the normal range. After verifying that there were no multicollinearity issues, multivariate analyses were conducted. As mentioned previously, for the purpose of brevity, I have only discussed the key aspects of the bivariate analyses applied in the appended papers. For specifics, readers are directed to the bivariate analysis section of the specific paper.

3.4.4 Multivariate analysis in the appended papers

a) Paper II

The purpose of paper II was to identify the relationship between corporate sustainability and financial performance in the Nordic context. Focusing on the purpose and considering data, the Hausman test was conducted first to understand which model might be the best for the data. The Hausman test (Prob > x² = 0.0067) was significant and indicated that a fixed effect regression
model suggested to be best to analyze the data. In line with the Hausman result, a fixed effect regression was performed with several control and moderating variables. Next, to check the robustness of the fixed effect’s outcome, one-step dynamic generalized method of moments (GMM) was applied. The results of fixed effect regression and GMM are consistent. This indicates consistency in the data analyses as well as results. Another reason for applying GMM is to control endogeneity, which might appear from the fixed effect regression. Relying solely on a static fixed effect, the outcome may result in an incorrect conclusion, as previous researchers have warned that the relationship may not be linear, and static econometric models have been criticized for years due to self-selection bias and issues with endogeneity (Achen, 2005; Balcaen and Ooghe, 2006; Maiga and Jacobs, 2011).

b) Paper III

Paper III contains the central theme of this thesis. The purpose of paper III is to determine factors that might impact the relationship of corporate sustainability and financial performance, both in the macro and micro business environments. In this regard, data were collected from two levels, company and country levels. Figure 6 below conceptualizes the two levels of data.

![Diagram of level of data](image)

*Figure 6. Conceptualization of level of data.*

Considering the data level, linear mixed-effects multilevel regressions (LMMR) was applied. Aguinis et al. (2013) and Bosker and Snijders (2011) have argued that multilevel modeling is the
recommended method for revealing the relationship between lower-level variables (such as micro level) and higher-level variables (such as macro level). To check the robustness of the outcome, two-step dynamic GMM was also applied. A two-step GMM estimator weights the moment conditions by a consistent estimate of their covariance matrix and removes simultaneity from the set of regressors by applying the appropriate instrumental list (Rashid Khan et al., 2019; Windmeijer, 2005). Here, the instruments refer to moment condition, instrumental variable, and estimation used in GMM. It is somewhat better than the previously used (in paper II) one-step GMM. In addition, two-step GMM is adroit in handling the two-levels-of-data issue (Kim and Frees, 2007). In this paper, another econometric model, quantile regression, was applied to visualize significant differences across different quantiles (Q25, 50, 75, and 90, respectively) in the conditional distribution of sustainability changes in regard to financial performance (in the micro business environment or company level).

However, regardless of the econometric model, consistent results prevailed, indicating the presence of both macro and micro factors in determining the relationship between corporate sustainability and financial performance.

c) Paper IV

The last appended paper investigates the impact of women on boards on corporate sustainability performance. The purpose of this paper was to examine and capture micro-business environmental factors that might impact the nexus between corporate sustainability and financial performance. If the first condition is met, then another aim of this study was to identify the percentage of women to have a critical mass effect towards sustainability. Data consisted of both time-variant and -invariant variables. As the data contained time-invariant variables, pooled OLS and random effects regressions were performed to reveal the relationship. The outcome was also checked, employing fixed effect regression by dropping the time-invariant variable. The robustness of the findings was checked through two-steps system GMM. The outcome is consistent irrespective of econometric models. In addition, to reveal the critical mass effect, dynamic threshold regressions with and without kink were applied. Both models revealed the same WoB critical mass threshold level, which is 30% in the European context.
3.5 An overview of methodological choices for the different papers

Table 5 provides a detailed overview of the methodological choices and approach of the appended papers. The first paper is a hybrid literature review where both quantitative and qualitative strategies were followed, argued for on the basis of philosophical pragmatism. The other three papers take the philosophical view of positivism under the deductive approach. The overview provides key information about the research philosophy, design and strategy, research approach, data collection, analyses, and econometrics models used in each of the appended papers.

**Table 5. An overview of methodological choices for the different papers**

<table>
<thead>
<tr>
<th>Papers/ Articles</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methodological approach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methodological choice</td>
<td>Quantitative and Qualitative</td>
<td>Quantitative</td>
<td>Quantitative</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Research philosophy</td>
<td>Pragmatism</td>
<td>Positivism</td>
<td>Positivism</td>
<td>Positivism</td>
</tr>
<tr>
<td>Research approach</td>
<td>Deductive</td>
<td>Deductive</td>
<td>Deductive</td>
<td>Deductive</td>
</tr>
<tr>
<td>Data collection</td>
<td>Archival data</td>
<td>Secondary data</td>
<td>Secondary data</td>
<td>Secondary data</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Bibliometric and content analyses</td>
<td>Regression analyses</td>
<td>Regression analyses</td>
<td>Regression analyses</td>
</tr>
<tr>
<td>Econometrics models applied</td>
<td>Bibliometric coupling and thematic content analyses</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Ordinary Least Squares regression (OLS)</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Fixed Effects regression</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>
3.6 The validity and reliability of research in relation to its methods, research questions, and findings

When arguing for validity and reliability in quantitative research, one question always arises: whether the outcome is adequately objective, measurable, and reproducible (Bell et al., 2022; Heale and Twycross, 2015; Ryan et al., 2007). Validity assessment might be judgemental in social science research as it involves human assessment. Regardless of the research strategy, there is always some degree of disparity in human assessment, especially in accounting and finance research.

However, the validity of a quantitative study is determined not only by the results of the study but also by the rigor of the research design (Heale and Twycross, 2015). Rigor refers to the ability of the selected methodology to effectively address the research question(s), consequently ensuring the reliability of the research findings. Focusing on rigor validity criteria, in the appended papers, I tried to ask research questions that can be answered through hypotheses testing. In this regard, static and dynamic econometrics models have been employed to ensure the reliability of the findings. To rule out possible threats, I devoted particular focus to data quality, picking relevant econometric models and making sure the models fit the research design. For more specifics, readers are directed to the methodological sections of the appended papers.

However, to operationalize methodological validity, data were collated from reliable databases, and different tests were conducted beforehand to select appropriate econometric models. Furthermore, I ensured that statistical assumptions were met before employing a particular model.
In addition, the robustness of the findings was also checked before deriving a conclusion from the results. In all the regression models, R\(^2\) value was within an acceptable range, which indicates the instruments' adequate explanatory power (Larcker and Rusticus, 2010). The model fit criteria for AR1 and AR2 in the GMM were insignificant. As a result, instruments satisfy the condition for exogeneity (Hansen, 1982). All of these test results indicate the validity of the method applied in the appended papers. Finally, a meticulous verification process was undertaken throughout the writing process to ensure that the research method and findings aligned with the theoretical discussion and effectively addressed the research questions.

The reliability of a quantitative study is measured with reproducibility, consistency of results, and of course, generalizability of the findings. Since the data were collected in the form of secondary data, under any circumstance the study will be reproducible. Consistency refers to the extent to which a research instrument produces the same results every time it is used in the same situation (Heale and Twycross, 2015). In terms of consistency of the measures, several econometric models were applied to confirm the homogeneity of the outcome by meeting statistical assumptions. Focusing on generalizability, the results from Nordic and European countries may not be generalizable to other parts of the world due to differences in stakeholder expectations, institutional mechanisms, and the financial systems’ supervisory actions. However, the results can be generalizable within Europe while investigating a similar topic in a similar context. Finally, this study employed several thousand observations, which may be sufficient to support its generalizability of the outcome within a European context.

\(^{23}\) Here, instruments refer to moment condition, instrumental variable, and estimation used in GMM.
Chapter 4: Summary of appended papers

This chapter summarizes the four appended papers that together contribute to the overall purpose of this thesis. The aims, methodological approach to conducting the studies, findings, and finally, the originality of the research are briefly presented in this chapter.

This thesis includes a total of four articles. Three are research articles, and one is a literature review. Except for one, the articles are co-authored. Together, the research articles and literature review, will help readers to understand the research field and contribution of this doctoral thesis. All my research papers are, in general, focused on the concept of corporate sustainability and financial performance, but all four are unique in terms of contributions. A detailed discussion commences below.

4.1 Paper I


The first appended paper is a bibliometric literature review (BLR) article, intended to increase understanding of the evolution of the research field. This BLR poses three research questions. First, what do the literature and theories suggest about the relationship between corporate sustainability and financial performance? Second, what are the factors affecting the relationship between sustainability and financial performance? And finally, how can the nexus between corporate sustainability and financial performance be conceptualized?

The main purpose of answering these research questions is to understand the intellectual structure and evolution of the literature in the field of sustainability and financial performance. In this

24 Intellectual structure is defined as a “set of salient knowledge base attributes that can provide an organized and holistic understanding of the chosen scientific domain” (Shafique, 2013).
regard, the article gathered data from the Scopus database. After employing bibliometric coupling analysis, the final sample of 504 articles from the years 2000 to 2021 yielded three research clusters. Based on a calculation of total global citations and journal ranking, the authors chose 38 articles to include in this review. The article concludes that corporate sustainability and financial performance have a positive relationship but with a time lag. The nonconclusive result about sustainability and financial performance is due to self-selection bias, endogeneity issues, and the use of multiple datasets and industry categories in the studies reviewed. The article further discovered that the impact of sustainability on financial performance is elusive in capitalist countries that are justified as being economically rational. Institutional and legitimacy requirements are a good starting point for shaping corporate behavior in the short run, but it might not be equally appropriate in the long run, as corporations might shift operations to pollution havens. In terms of theoretical investigation, institutional and legitimacy theories have been widely used in the previous literature, indicating that institutional and legitimacy requirements shape firm behavior. However, in the recommendation, we four authors of this article contradict this view and further conceptualize that a multifaceted, synergistic interaction between governmental institutions, corporations, and other stakeholders is required, without forcing or exercising authority, to ensure durable sustainable development. This review contributes to the concept of “when it pays to be green.”

The outcome of the BLR helps to soothe the debate on “whether it pays to be green.” The article not only contributed to the fields of sustainability and financial performance in terms of new knowledge but also addressed critiques of previous literature.

4.2 Paper II


Nordic countries are well known for providing institutional sustainability frameworks that help companies to perform sustainability practices (Johannsdottir and McInerney, 2018; Lindell and
Karagozoglu, 2001). In addition, more and more practitioners are emphasizing that a significant percentage of Nordic financial institutions incorporate sustainability into their business models (Nordea, 2020). Motivated by earlier research and practitioners’ confidence, we conducted the study with the aim of revealing whether sustainability practices influence financial performance in the context of Nordic financial companies. To uncover the relationship, the study employed agency and stakeholder theories to examine the relationship under the theoretical lens and then empirically tested it. With data from 39 financial institutions from the years 2015-2019 and with the help of fixed effect regression and generalized method of moments (GMM), this study identified a nonconclusive result. Overall, there is a negative association between sustainability and financial performance. The result is not surprising as financial institutions are purely economically rational, and sustainability takes time to impact financial performance. Therefore, financial institutions might not be equally interested in focusing on sustainability issues that protect stakeholders’ interests. However, only the governance (G) dimension of sustainability and return on assets (ROA) had a positive association. This is quite normal for financial companies, given that they operate under a legitimate regulatory framework set up by the central bank and other state regulatory organizations. This study provides a key contribution to the accounting and finance literature by revealing that there is a risk for financial firms in adopting sustainability practices in spite of having a favorable institutional environment, since sustainability practices contradict economic rationality. This study reinforces previous literature findings and additionally reveals financial companies’ phenomena towards sustainability in the context of the Nordic region.

4.3 Paper III


The second paper had a fairly narrow emphasis on the impact of Nordic financial institutions’ sustainability practices on financial performance. The findings of the second study may not be equally generalizable to other European nations or industry settings. Therefore, this paper aims to examine the sustainability practices’ impact on financial performance in the European context, as
well as to examine the factors that might influence the relationship. In these aims, to reveal the nexus, this paper used network governance theory (NGT). Believing that, the relationship is not linear and not shaped by linear institutional pressure or legitimacy requirements as firms operate in the macro (uncontrollable) environment. Rather, the relationship is transformed, modified, and shaped through an interaction of the trajectories of multiple actors. To prove this theoretical underpinning, this paper used data from 795 companies of 10 different industries in 21 European countries by applying linear mixed effects multilevel regressions (LMMR), a two-step system generalized method of moments (GMM), and quantile regression models to uncover the nexus. The findings support that there is a positive relationship between sustainability and financial performance, and other actors in the macro environment play a crucial role in this regard.

The uniqueness of this paper is that it departed from employing traditional domain theories and traditional measurement tools to identify the relationship, after addressing the critique of Soytas et al. (2019) regarding endogeneity issues in the prior literature on a similar topic. However, this article theoretically and empirically proved that corporate sustainability and financial performance are not solely dependent on corporate operation. Rather, it is transformed, modified and shaped through an interaction of multiple actors’ trajectories in the macro environment. This study will give new food for thought to the researchers and practitioners to understand the mutual interactions of multiple actors and their impact on corporate sustainability and financial performance. Previous research on a similar topic applied institutional or legitimacy theories in order to posit the argument of shaping corporate behavior, but this article argued that such pressure would not be effective in the long run. This paper has a unique theoretical conceptualization in order to bridge the theoretical gap in the domains of accounting, finance, and economics.

4.4 Paper IV

Rahi, A. F. Unpacking women’s power on boards. Gender reward in board composition. Under review with a journal.

The previous (third) paper articulated the importance of actors in the macro environment. However, I believe that other microenvironmental (company-level) factors might influence
corporate sustainability practices as well. To pursue this, I wrote this single-authored article that asks two research questions. First, do women on boards (WoB) affect sustainability performance in the European context? Second, what is the threshold point of women's participation on boards to get a synergetic impact on corporate sustainable performance? The purpose of answering two research questions is twofold. First, research on the impact of women's participation on boards and corporate sustainability performance in the European context is lagging behind. Second, there is a lack of research on the question of the minimum composition of women on boards required to have a synergetic impact on sustainable performance. The issue was first theoretically examined by using social role, agency, and critical mass theories, then tested using data from 21 European countries, having 4661 firm-years of observation between 2015 to 2020. For analysis, this study employed pooled OLS, random effects regression (with and without robust standard error), two-step system generalized method of moments (GMM) and threshold regression models. Across the econometric models, the findings were similar and robust, indicating women's participation on management boards ensures corporate sustainability performance and that at least 30% of women's participation is required to ensure a synergetic impact towards sustainability. This study further revealed that a higher threshold of WoB participation caused negative reactions from investors, thus reducing a firm’s market value. This paper concludes that there is a need for gender balance on management boards.

The unique contribution of this paper is to identify the threshold point of women's participation on management boards in the European context. Previously, the European Council (EC) proposed a directive in 2012 to adopt 40% fixed gender quotas for nonexecutive directors of EU-listed firms; however, the draft was later rejected by the EC in 2015 (Leszczyńska, 2018; Nuber and Velte, 2021). Thus, this study sheds light on the importance of gender balance in management boards in the European context and has implications for researchers, business practitioners, and policy makers. This paper contributed to the accounting, finance, corporate governance, and sustainability domains.
Chapter 5: Discussion and Conclusion

This chapter begins with a general discussion and conclusion, then delves into contribution to academic and practitioner, and policy-maker implications. Finally, the chapter ends with a discussion of limitations and future research directions.

5.1 General discussion and conclusion

Before conducting the empirical quantitative analyses, I sought to understand what the literature and existing theories suggest about the relationship between corporate sustainability and financial performance. How can the relationship between corporate sustainability and financial performance be conceptualized from prior research? To answer these two related research questions, a hybrid literature review was conducted. The analysis of the literature review (paper I) primarily indicates that the relationship between corporate sustainability and financial performance is inconclusive. This is mainly because the data in the prior literature came from different geographical areas under different industry categories. However, when looking closely at the nexus between corporate sustainability and financial performance issues, I have observed that the macro and micro business environments have an impact on the relationship spectrum. The investigation further highlights that prior literature used institutional, legitimacy and stakeholder theories in arguing for the nexus. However, this thesis (see the paper I for details) pointed out that the concepts of sustainability and financial performance applied in prior literature are undertheorized and unable to capture the nexus, because hierarchy, pressure and power distance will never ensure a mutual sustainable relationship in the long run. Instead, companies might think of shifting operations to pollution havens (Li and Zhou, 2017).

To address the second research question (see also section 1.4), prior literature conceptualized the relationship between corporate sustainability and financial performance as a consequence of institutional pressure, legitimacy requirements, and stakeholder demands. In Europe, sustainability has not only been institutionalized through directives but also accepted by corporations and other stakeholders deliberately (Rahi et al., 2023a)\(^ {25} \). This mutual acceptance fosters network

\(^ {25} \) This could be due to the mimetic and normative institutional forces.
governance relationships and produces a favorable macro business environment, which 
(in)directly influences the environment of microbusinesses towards social and green innovation. 
Thus, business sustainability practices play an essential role in mitigating the negative impact of 
environmental and social issues. The output of the micro business environment helps to maintain 
balance in the macro business environment, which supports a broad range of consistent 
relationship networks under the notion of network governance theory (Kapucu and Hu, 2020). The 
analysis of this thesis supports the proposition that sustainability practices have a positive impact 
on financial performance, but in time lag under an effective network governance relationship. The 
positive relationship of sustainability and financial performance might take a lot of time and effort 
even under the effective (good) governance framework, in the case of financial institutions, which 
is being justified as the economic rationale. Another interesting finding supports that the mutual 
interdependence of the relationship is lacking in capitalist countries, where the corporate 
phenomena are based solely on profitability (Li et al., 2017; Rahi et al., 2022b; Ziegler, 2012). This 
capitalistic phenomenon prevails in the case of financial institutions, as it is evident that by 
the nature of their business, they prioritize shareholders over stakeholders’ interests (Achua, 2008; 
Williams and Prather, 2010). In spite of operating in a favorable stakeholder-focused institutional 
environment, in this Nordic context, the outcome of financial institutions toward sustainability 
practice is negative in the short run. At this point, the third research question of the thesis is 
answered (see above paragraph).

This thesis conceptualizes the nexus between corporate sustainability and financial performance 
through the lens of a multi-theoretical approach. Therefore, focusing on the fourth research 
question, this thesis argued that macro as well as micro business environmental factors influence 
the nexus. Macro business factors can be classified as political stability, rule of law, control of 
corruption, economic growth, GDP per capita, inflation, and so on. On the other hand, micro 
business factors can be classified as management board quality (characteristics, structure, and 
process), gender diversity, corporate vision, sustainability practices, corporate governance 
mechanisms (at the company level), and so forth. In this regard, this thesis found that the 
stakeholder-oriented corporate governance strategies and participation of women on boards play a 
significant role towards sustainability and financial performance. This thesis further identifies that

26 In the paper III, these variables are used to examine the relationship.
27 Refer to the data and variables section in paper IV.
the threshold of WoB is suggested to be approximately 30% in the European context. Below the threshold, there will be no critical mass effect; above the threshold, there is evidence of investors’ negative reactions. At this stage, research questions 5 and 6 have been addressed.

To conceptualize the main research question, the nexus between corporate sustainability and financial performance depends on the mutual interactions of multiple actors in the macro business environment, and the output of the micro business environment towards the macro environment plays a role in creating a balance in the network ecosystem. An imbalance in the ecosystem causes an organization to be opportunistic and profit driven, ignoring sustainability issues. On the other hand, in a favorably balanced ecosystem, sustainability practices ensure financial performance but with a time lag. This is due to the fact that the benefit of sustainability takes time to cause benefits in financial performance as sustainability takes initial investment to change the production, service, and operations mechanisms and the benefit can only be captured (ripen) in the long term. This relationship nexus is evident in the European context. Therefore, it can be inferred that it pays to be green in the European context. However, there is still uncertainty in CEE countries. EU central mechanisms are helping and challenging CEE member states to improve their conditions (Rahi et al., 2023a).

5.2 Bridging the theoretical gap

Many corporate sustainability and financial performance–related studies have been undertaken over the last forty years. Therefore, conducting additional research on a similar topic may appear redundant or unnecessary to readers. However, this thesis examines sustainability and financial performance not only through empirical analyses but also through a new theoretical lens, a multi-theoretical approach, in contrast to traditional theories. The main reason for such an approach is to capture the possible factors that might impact the relationship. The multi-theoretical approach has been used in accounting, finance and governance literature. But according to the literature search performed, this thesis represents the first attempt to apply a multi-theoretical approach in sustainability accounting and finance research to conceptualize the relationship between corporate sustainability and financial performance. In this regard, this thesis provides a comprehensive conceptual framework for contemplating the relationship. Figure 7 illustrates the idea.
Figure 7. A comprehensive framework for the corporate sustainability and financial performance nexus. In the diagram, solid lines represent direct impact and indistinct lines represent indirect impact. The different box shapes used to better illustrate the figure and are ornamental only; they do not add any additional meaning or information to the figure.

In the figure, all the actors are connected within the macro business environmental spectrum. Financial performance is the result of a lag effect after sustainability practices are applied in the micro business environment, which is influenced indirectly by the slack resources, stakeholder-oriented corporate governance and participation of at least 30% of women on corporate boards. This micro business environment is transformed, modified, and shaped through an interaction of the trajectories of multiple actors in the macro business environment. The effective (good) governance framework for sustainability is central and key towards corporate sustainability motivation. The central effective (good) governance framework is surrounded by political stability, the rule of law, control of corruption, GDP per capita, economic growth, and inflation. The global economy has an indirect influence on this macro business environment, among others. This is how
a (rational) comprehensive framework might work to conceptualize the nexus between corporate sustainability and financial performance.

5.3 Contribution to academics and practitioners, as well as implications for the policy makers

As mentioned, previous literature clouds the issue has produced blended results when explaining the nexus between corporate sustainability and financial performance. However, this thesis not only explicates potential causes positive and negative results but also conceptualizes the possible factors that may influence the nexus. In a favorable, sustainability-friendly macroeconomic environment, corporate engagement towards sustainability pays to be green, specifically in the European context. Even in such a network relationship environment, it is profitable and cost-effective to be green. These phenomena traditionally may be seen via the perspective of institutional isomorphism (DiMaggio and Powell, 1983). The loophole of institutional isomorphism is criticized in this thesis. Therefore, in a modern business environment, this phenomenon is conceptualized under network governance relationships. In contrast, in the absence of network relationships, corporations may be opportunistic, or their output and effort might disappear in the macro business environment. In such a scenario, particular sustainability-focused corporations may lose motivation, due to the absence of reward and recognition, to continue sustainability practices as time passes. These findings will help academics to understand and explain the phenomenon of the positive and negative (or indifferent) relationship of corporate sustainability and financial performance. The finding will help practitioners and policy makers simultaneously because policy makers will understand the importance of keeping an effective (good) governance framework for sustainability in the macro business environment, which is considered to be a key atmosphere of the network governance relationship ecosystem. Within such an ecosystem, practitioners would be able to follow and formulate sustainability-related strategies in the micro business environment, including stakeholder-focused corporate governance strategies, slack resources for embracing sustainability, and, most importantly, 30% of WoB participation to reduce agency problems and take a step towards sustainability practices, which will eventually lead to improved financial performance. However, even in a favorable (network governance) macro business environment, a negative relationship between sustainability and financial performance will remain if sustainability-related initiatives are merely used as a marketing tool, i.e., greenwashing or selfies, which will not generate positive financial performance in the end.
As data for this thesis pertain to European companies, and empirical results revealed that the macro and micro business environmental factors boost corporate sustainability practices and thus financial performance; therefore, policy makers and practitioners should understand the mutual collaboration effect in order to enable the EU green deal.

5.4 Limitations and suggestions for the future research agenda

Despite extensive theoretical discussion and numerous empirical analyses, this thesis's findings are not without limitations. First, this thesis uses ESG data as a proxy for corporate sustainability practices. But ESG score has been criticized for many controversies. Many researchers consider this as a "Janus phenomenon" with two opposing sides and hence not beyond debate (Dorfleitner et al., 2022; Rahi et al., 2023a). ESG score methodology has been questioned by many researchers (Clément et al., 2023; Dorfleitner et al., 2022; Edmans, 2023) and therefore regarded as insufficient for capturing corporate sustainability practices. Future researchers are advised to use the ESG controversies score or the weighted average ESG score from multiple score providers to avoid controversies involving particular rating providers. In addition to that, this thesis uses the World Bank ranking for institutional qualities. Like the ESG controversy, the world governance indicator World Bank IQ score has been criticized as subjectively biased by respondents. Future research might incorporate data from databases such as the Database of Political Institutions, V-Dem, or the database developed by Kuncic (2014), among others. In the comprehensive framework, the impact of the world economy and slack resources have been theoretically discussed or conceptualized but not analyzed statistically in the empirical papers (II to IV), which will open a door for future research endeavors.28

In addition to that, this thesis blends data following a geographical approach. Future research should be restricted to EU member states only while arguing for the European context. Finally, this thesis only focused on macro and micro business-level environmental factors. However, there might be a level between macro and micro, affecting the nexus. Future research should investigate level complexity in greater depth. Thus, I recommend focusing on meso-level factors in conceptualizing the nexus.

28 Although a brief discussion has been included in the literature review paper I.
References


Appendix

Authorship contribution statements

Paper I

**ABM Fazle Rahi:** Conceptualization, Methodology, Visualization, Formal analysis, Data curation, Writing – original draft, Writing – review & editing. **Jeaneth Johansson:** Writing – original draft, Writing – review & editing, Supervision. **Marita Blomkvist:** Writing – original draft, Writing – review & editing, Supervision. **Fredrik Hartwig:** Writing – original draft, Writing – review & editing.

Paper II

**ABM Fazle Rahi:** Conceptualization, Methodology, Visualization, Formal analysis, Data curation, Writing – original draft, Writing – review & editing. **Ruzlin Akter:** Theory, Writing – original draft, Writing – review & editing. **Jeaneth Johansson:** Theory, Writing – original draft, Writing – review & editing, Supervision.

Paper III

**ABM Fazle Rahi:** Conceptualization, Methodology, Visualization, Formal analysis, Data curation, Theory, Writing – original draft, Writing – review & editing. **Jeaneth Johansson:** Writing – original draft, Writing – review & editing, Supervision. **Catherine Lions:** Writing – original draft, Writing – review & editing.

Paper IV

**ABM Fazle Rahi:** Conceptualization, Methodology, Visualization, Formal analysis, Data curation, Theory, Writing – original draft, Writing – review & editing

NB: All co-authors have been duly informed through email and have provided their consent regarding the authorship contribution statements.
ABM Fazle Rahi started his PhD journey in September 2018 at the School of Business, Innovation and Sustainability, Halmstad University, Sweden. His doctoral study is a joint collaboration and jointly financed by the Department of Business and Economics Studies, University of Gävle. Before starting his PhD studies, he successfully completed his master’s of science in finance and accounting from Umeå University, with full funding from the Swedish Institute Study Scholarship (SISS) between 2016 and 2018. In addition to his academic background, he has spent roughly six years working for several well-known multinational companies.

This doctoral thesis contributes to the advancement of knowledge in the fields of sustainability accounting and finance literature by examining the nexus between corporate sustainability and financial performance. From his social life experience, Fazle Rahi has observed that mutual interaction boosts the collaborative network relationship, whereas power distance and hierarchy damnify it. Inspired by his life experience, he has primarily examined the nexus with the lens of network governance theory.