Norwegian School of Economics

Bergen, Autumn, 2020

The Interdependence of Management Control Systems and Conflict Resolution Between Sustainability and Profitability

A Case Study of Grieg Star

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Master Thesis in Economics and Business Administration.
Majors in Business Analysis and Performance Management, and Strategy and Management

NORWEGIAN SCHOOL OF ECONOMICS

Abstract

With a foundation from the extensive literary debate on the profitability of sustainability, this study will look into how an organisation can achieve a triple bottom line. Companies are seeking advice on how to manage the increased sustainability demands from institutions, and the maritime sector is no exception. The purpose of this study is to contribute with valuable insight on the concept of conflict management between sustainability and profitability. Hence, the research question this study aims to answer is *how are the management control systems in an organisation influencing, and being influenced by, the managers' approach to solving conflicts between sustainability and profitability?*

To investigate the research question there is a need for in-depth data. Therefore, we have conducted a single case study of Grieg Star, with primary data gathered from seven semi-structured interviews of managers and employees. Secondary data, such as annual reports and information from websites, has enabled a longitudinal time horizon. In addition, an interview with a maritime expert from the Norwegian University of Science and Technology (NTNU) has provided a valuable understanding of the industry.

The study is structured in accordance with the Levers of Control framework. The empirical findings indicate that compliance with internal policies is a high priority in Grieg Star. In this regard, external institutions seem to have a strong influence on internal rules and policies concerning sustainability, while the financial policies originate from within the organisation. In terms of the control tool of measurements and targets, the quantifiable factors are given precedence over non-quantifiable factors. Furthermore, as part of a value-driven company, the employees find guidance and motivation from the values that pervade the organisation. Discussions and opportunity seeking are also important tools at all levels in the organisation, leading to strong initiatives particularly towards sustainable development.

Based on the empirical findings, it was discovered that the levers of control had an order of priority rather than a balanced use in Grieg Star. Furthermore, we found that cognitive integration of the control tools is crucial to achieve a balanced prioritisation of sustainability and profitability in an organisation. Our findings suggest that companies should be aware of the order of priority and cognitively integrate the management control tools to achieve a successful triple bottom line.

Acknowledgements

This thesis is written as a part of our Master Degree at the Norwegian School of Economics (NHH), with majors in *Strategy and Management* and *Business Analysis and Performance Management*. Through this project we have gained valuable insight into business management and sustainable development, and our interest in sustainability within the maritime industry has grown.

We would like to sincerely thank the TERRAVERA Foundation and their Academic Program for the guidance, facilitations, and encouragement during the research process. Their help in finding an appropriate case for our study, and their quick turn-around when the first case organisation withdrew, have been vital to the success of our thesis. We are honored to be able to publish our work as a part of their platform, and hope that it will prove to be valuable to them. A special thanks to Gyda Bjerke, Head of Academic Program, for the close collaboration from the beginning to the end of this project.

We also extend our thanks to Grieg Star for a great collaboration. We are grateful for the contributions of the participants, especially their honest responses and time, which have provided the study with valuable insights. This collaboration has been vital for our study.

Lastly, we would like to thank our supervisor, Daniel Johanson (NHH) for his advice, shared knowledge, and availability throughout the research process. We appreciate the constructive feedback and discussions that have undoubtedly enhanced the academic quality of our study.

Bergen, December 18th 2020

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1. Introduction

1.1 Background

In the last few years, the focus on sustainability has increased drastically. The European Union is developing regulations in regards to sustainability (European Commission, n.d.), investors are demanding a prioritization of sustainability (Unruh, Kiron, Kruschwitz, Reeves, Rubel, & zum Felde, 2016), there is a rise of climate protests around the globe (Corry & Reiner, 2020), and the main topic of the World Economic Forum 2019 was sustainability (Cann, 2019). In a business context, sustainability can be defined as meeting all stakeholder needs, today and in the future, by balancing three dimensions: profit, planet, and people (World Commission on Environment and Development [WCED], 1987; Dyllick & Hockerts, 2002). To achieve the UN Sustainable Development Goals and tackle the climate changes, 197 countries agreed to the global initiative of the Paris Agreement in 2015 (United Nations, n.d.). Nevertheless, the maritime sector, together with aviation, was exempted from the agreement (Psaraftis, 2019). According to Psaraftis (2019), this was due to the International Maritime Organization (IMO) having a mandate over maritime actions. Despite introducing several initiatives for emissions reduction in the maritime sector, global commitment was still only a wish in 2018 (Psaraftis, 2019). After the Paris Agreement, IMO introduced the goal of halving the total emissions of the sector before 2030, based on the emission level from 2008 (Norsk klimastiftelse, 2020, p. 4). Hence, the maritime sector has finally entered the movement towards sustainable development (Jørgensen & Pedersen, 2018, p. 213). Even though Jørgensen and Pedersen (2018, p. 37) claim that it is still possible to be profitable without caring for sustainability, they are among many researchers who support the business case for sustainability. Nevertheless, there is a continued discussion among these researchers about how and when these financial returns will actually be realized (e.g. Schaltegger, Lüdeke-Freund, & Hansen, 2012; Epstein, Buhovac, & Yuthas, 2015; Aragon-Correa, Marcus, Rivera, & Kenworthy, 2017; Jørgensen & Pedersen, 2018).

To take advantage of the opportunities, and to cope with the rampant development of sustainability, several researchers point to management controls as potentially effective tools (e.g. Schaltegger et al., 2012; Jørgensen & Pedersen, 2018, pp. 155 & 202). Anthony (1965, as cited in Kald, Nilsson, & Rapp, 2000) defines management control as “the process by which managers assure that resources are used effectively and efficiently in the

accomplishment of the organisation's objectives" – in other words, control using both financial and non-financial objectives. Frameworks of Management Control Systems (MCS), like Simons' (1995a) Levers of Control, can help explain how the management of day-to-day operations is structured in systems (Ahrens & Chapman, 2004). The role of MCS is both complementary and independent in its two-sided use; to control and enable activities (Simons, 1995a; Adler & Borys, 1996; Ahrens & Chapman, 2004; Mundy, 2010). The controlling use of MCS includes tools to ensure efficiency, attainment of goals, and predictability, while the enabling use of MCS is associated with elements like information sharing, opportunity searching, spontaneity, adaptability, and reinforcement of employee commitment (Simons, 1995a; Adler & Borys, 1996; Ahrens & Chapman, 2004; Henri, 2006; Mundy, 2010). Since MCS as a holistic package was introduced by Otley (1980), several researchers have argued for the importance of MCS in translating business strategy into performance (Dent, 1990; Simons, 1990; Langfield-Smith, 1997). In addition, researchers have called for studies on the holistic package of MCS (e.g. Flamholtz, Das, & Tsui, 1985; Malmi & Brown, 2008). One of the frameworks that has stood the test of time, and outlived the new approach of MCS as a package, is the Levers of Control (LoC) framework (Martyn, Seeney, & Curtis, 2016). The framework Simons (1995a) developed is based on four levers of control, linked to four key constructs, with the goal of reaching the business strategy through balancing the levers. The LoC-framework has been valuable as an analytical tool with its language and classification system of MCS elements, as well as for providing explanations for the use of the elements (Martyn et al., 2016).

Martyn et al. (2016) argue that Simons' framework has proven its usefulness, with explanations of and extensions to new research topics and fields, for instance the field of sustainability. In relation to the rise of corporate sustainability as a concept, researchers call for studies on the intra-organisational impact of sustainability (Henri & Journeault, 2010; Arjalies & Mundy, 2013). This has resulted in an increased literary body of sustainability accounting and reporting, and management control systems for sustainability (Crutzen, Zvezdov, & Schaltegger, 2017). Over the last decades, several researchers have argued that MCS can drive companies toward sustainability (e.g. Henri & Journault, 2010; Gond, Grubnic, Herzig & Moon, 2012; Schaltegger, 2012) as the literature has shown the effect of MCS on strategy support and activity guidance (e.g. Langfield-Smith, 1997; Ahrens & Chapman, 2007). Still, Crutzen et al. (2017) point at the scant research on which systems, formal or informal, that contribute to the achievement of sustainability objectives. In this

relation, Gond and Herrbach (2006) argue for the need to separate the formal control mechanisms with regards to sustainability. These mechanisms can be described as Sustainability Control Systems (SCS), which Crutzen et al. (2017) define as "all devices and systems that managers develop and use to formally and informally ensure that the behaviours and decisions of their employees are consistent with the organisation's sustainability objectives and strategies" (p. 1293).

Gond et al. (2012) contribute to the MCS-literature with an extension of the language and classification system of Simons' framework, which includes the introduction of SCS and its integration with MCS. Based on two of Simons' levers, the diagnostic- and interactive control systems, Gond et al. (2012) look at how the balance between the levers contributes to a deeper integration of sustainability in the strategy of organisations. Gond et al. (2012) categorise various configurations based on the use of, and integration between, MCS and SCS. The importance of SCS in mediating the strategy and performance of the environmental dimension, and the integration between regular MCS and SCS is confirmed in the study of Rötzel, Stehle, Pedell, and Hummel (2018).

1.2 Research Question and Contribution

The literature of management control in combination with sustainability has so far been inconclusive (Jørgensen & Pedersen, 2018, p. 194; Narayanan & Boyce, 2019). Gjøsæter, Kyvik, Nesse, and Årethun (2019) invite more research on challenges related to being a business operator when economic, environmental and social goals are the basis of strategic and operative activities and decisions. Mundy (2010) suggests more research on organisations' attempts to balance the relationship of the levers in the LoC-framework, while Gulbrandsen, Jørgensen, Kaarbøe, and Pedersen (2015) and Gond et al. (2012) request more research on how to utilise the opportunities within existing MCS and configurations. Rötzel et al. (2018) call for research on the interdependent relationship between economic and environmental managerial performance, and the drivers of integration between MCS and SCS in companies. In this relation, Rötzel et al. (2018) propose using a wide framework that includes an integrated perspective on SCS and MCS, and their interrelated relationship with the business strategy. Also George, Siti-Nabiha, Jalaludin, and Abdalla (2016) highlight sustainability integration in control systems as an emerging field of research. Jørgensen and Pedersen (2018, p. 4) and Psaraftis (2019) argue that there is a lack of research that provides

guidance for practitioners in their journey towards sustainability. Narayanan and Boyce (2019) recommend more research on sustainability considerations in the strategy process and in the decision-making process. This is consistent with Ghosh, Herzig, and Mangena's (2019) request for exploration of the potential primacy of certain controls in small firms. In addition, Rötzel et al. (2018) suggest an examination on how MCS affect managerial behaviour in the conflict management of sustainability and profitability, as an extension of the debate regarding the profitability of sustainability.

To analyse these issues, researchers solicit detailed studies on an organisational level, with representation from several hierarchical levels in the organization (Mundy, 2010; Gond et al., 2012; Ghosh et al., 2019). Crutzen et al. (2017) ask for a wider perspective based on the points of view of a range of managers, not solely managers in positions related to sustainability. To be able to study the two-way effect between sustainability strategy and management, the recent studies of Ghosh et al. (2019) and Rötzel et al. (2018) call for longitudinal studies. This is also highlighted as necessary by Crutzen et al. (2017). Ghosh et al. (2019) seek an enhanced understanding of how MCS and SCS is influenced by different institutional contexts.

Based on the extant literature, and the lack thereof, this study will be investigating the following research question:

> *How are the management control systems in an organisation influencing, and being influenced by, the managers' approach to solving conflicts between sustainability and profitability?*

This research paper is a longitudinal single case study of Grieg Star, and will therefore answer the call for detailed, intra-organisational studies within the field of MCS and SCS. Our contribution will strengthen the literature on prioritisations between sustainability and profitability requested by Jørgensen and Pedersen (2018, pp. 202 & 218), Narayanan and Boyce (2019), Ghosh et al. (2019), and Gjøsæter et al. (2019). This study will provide insight into the effectiveness of MCS in reaching sustainability goals on a deeper level, and for instance address the plea for inclusion of a wider manager and employee perspective recommended by Ghosh et al. (2019) and Crutzen et al. (2017). The case study of Grieg Star will also enhance the understanding of the effect of different institutional contexts, suggested

by Ghosh et al. (2019). This is due to the distinctive context of the maritime sector, where organisations comply with international laws and regulations rather than those of a specific country (IMO, n.d.a.; Psaraftis, 2019).

The research question is wide, and consequently consists of several elements. To answer this research question, we will therefore attempt to answer three sub-questions. Through the first sub-question, the demand for research on a balanced MCS will be answered. Based on the request from Rötzel et al. (2018), this study is based on a broad framework, Simons' LoC-framework, to understand the relationship between MCS and strategy. This study responds to the call for research on the balanced use of the levers, and the exploitation of the opportunities provided by the balance, with in-depth data (Mundy, 2010; Gulbrandsen, et al., 2015). This will also highlight the explicit demand for research on the potential primacy of some levers (Ghosh et al., 2019). To answer this part of the research question, the first sub-question is formulated as follows:

i. *How is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?*

Furthermore, this study answers the appeal for studies on the effect of configurations on conflict management based on the framework of Gond et al. (2012). This also satisfies Rötzel et al.'s (2018) desire for a wide framework including the integration between MCS and SCS, and fills the literary gap pointed out by George et al. (2016). We will address this inquiry from extant literature with a development of the Gond et al. (2012) framework, by looking at how the integration of an organisation influences their conflict management when it comes to prioritising between financial and sustainability goals. In this relation, the exploitation of the opportunities within existing configurations will also be investigated. Hence, the sub-question related to this part of the research is:

ii. *How does the integration of MCS and SCS in a company impact their conflict management?*

Lastly, this study will answer the call for studies on managerial actions in goal conflicts (Jørgensen & Pedersen, 2018, p. 4; Rötzel et al, 2018; Psaraftis, 2019). In their suggestion for further research, Rötzel et al. (2018) exemplify the potential managerial actions of upstream strategy reformulation and downstream MCS rebalancing. We will look at how the

organisation is attempting to handle future prioritisations between sustainability and profitability, and how this will influence their MCS. Accordingly, the third sub-question is:

iii. How are the MCS and SCS influenced by the conflict management of sustainability and profitability?

1.3 Outline

To answer the research question, this study is divided into seven chapters. Chapter 2 will elaborate on the literary foundation of this study. Chapter 3 presents the chosen research methodology, while the empirical background of Grieg Star is presented in Chapter 4. Chapter 5 contains the empirical findings, and the following analysis and discussion is presented in Chapter 6. Finally, we will conclude our analysis and give recommendations for further research in Chapter 7.

2. Literature

This chapter will elaborate on the theoretical foundation on which this study is built to be able to answer the research question. There is a need for a theoretical understanding of the concept of sustainability, which will be elaborated on in section 2.1. Furthermore, an understanding of the mutual influence between management control systems and conflict management is also required. Therefore, the MCS of Grieg Star need to be discussed, which in this study is enabled through the frameworks of Simons (1995a) and Gond et al. (2012). Simons' (1995) Levers of Control are discussed in section 2.2, and the framework of Gond et al. (2012) in section 2.3.

2.1 Sustainability

This section will elaborate on the literature of sustainability. In 2.1.1 we will discuss the evolution of the term sustainability. Section 2.1.2 includes the drivers for sustainability, and section 2.1.3 discusses the economic rationale of sustainability.

2.1.1 The Term Sustainability

The growing body of research within the field of sustainability indicates that the attention given to corporate sustainability is increasing in all sectors (e.g. Kiron, Kruschwitz, Haanaes, & Velken, 2012; Jørgensen & Pedersen, 2018, p. 213). Even though responsibility beyond profitability has been researched since the time of Aristoteles, the definition of the term as we know it today only arose during the last century (Jørgensen & Pedersen, 2018, p. 194). Through the UN report Our Common Future in 1987, the term *sustainable development* was popularised and defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Jørgensen and Pedersen (2018, p. 40) also discuss how the term sustainable development has become a political term through the UN definition, while the original essence of the term *sustainability* refers to the survival of a biological ecosystem. Dixon and Fallon (1989) have argued for a broader applicability of the term, where it is not only used in a political context, but also in a descriptive manner when referring to any "complex social-economic-physical setting". On the other hand, Dyllick and Hockerts (2002) point at the wide adoption of the term *sustainable development* in business. They suggest the following rephrase to increase

the relevance: “Corporate sustainability can accordingly be defined as meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc), without compromising its ability to meet the needs of future stakeholders as well” (Dyllick & Hockerts, 2002, p. 131).

Alhaddi (2015) argues that the UN definition has maintained its relevance in literature since its origin, but simultaneously discusses its inconsistent use. To make their point, the researcher presents studies that primarily refer to environmental aspects when discussing sustainability, and studies that primarily allude to social aspects. On the basis of the 1987 report, the WCED developed the Millennium Development Goals in 2000 and the Sustainable Development Goals in 2015. The goals represent different dimensions of how sustainable development should come to play, with a crucial balance of the economic, environmental and social dimensions. Based on the UN Sustainable Development Goals (hereafter SDGs), some of the factors included in the environmental dimension of sustainability is emissions and pollution, waste reduction, resource efficiency, and the sustainability of ecosystems on land and below water (United Nations Department of Economic and Social Affairs [UN DESA], 2016). The social dimension of the UN Sustainable Development Goals includes among others health, poverty, diversity, and gender equality. Finally, factors in the economic dimension include economic growth and job creation, increase of economic productivity, and enhancement of global macroeconomic stability (UN DESA, 2016). Dyllick and Hockerts (2002) states that a widespread acceptance of the three dimensions as interconnected and mutually dependent has existed among businesses, politicians and NGOs since the 90s. A study of sustainability, consistent with the UN definition of sustainable development, should therefore include all three dimensions. As a response to the definition, Elkington (1997, as cited in Jørgensen & Pedersen, 2018, p. 155) has developed the triple bottom line, where performance is to be measured based on these three dimensions.

2.1.2 The Sustainability Problem, Technological Enablers and New Preferences

Jørgensen and Pedersen (2018, p. 5) present three drivers of sustainability, where the first is the sustainability problem. The massive sustainability problem, described as the capacity of the earth being challenged, has led to an urge for increased corporate sustainability (Nidumolu, Prahalad, & Rangaswami, 2009; Rockström et al., 2009; Jørgensen & Pedersen,

2018, p. 5). The sustainability problem will also affect the business environment, and therein the conditions for the economic activities (Rockström et al., 2009; Pachauri & Meyer, 2014). Butler (2014, p. 167) highlights the vulnerability of even strong economies, where international supply chains through ports and airports are disrupted by extreme weather. Another example is the increased scarcity of resources due to climate change and overconsumption, which drives up prices and supplier risks (Evans, 2011).

The second driver for sustainability is the opportunities from digitalisation and technology. The fourth industrial revolution enables leaner and more efficient business practices, as well as new value creation possibilities, through the fusion of digital, physical and biological spheres (Schwab, 2016). This allows for more sustainable businesses, with renewed business models and practices. Highly relevant for the shipping industry is the technology development regarding the propulsion system of ships (Stopford, 2020). Where most ships use fossil fuels today, Stopford (2020) foresees the development of propulsion systems generating energy from ammonia or hydrogen. During the first half of the 2020s, Stopford (2020) portrays a technological wave that will involve re-engineering of diesel engines to improve efficiency. A second wave is predicted to last throughout the decade, and will include the development of hybrid and gas-driven engines (Stopford, 2020). A third wave, starting in the mid-2020s, is predicted to develop zero-carbon propulsion systems based on battery technology, possibly replacing the whole diesel fleet (Stopford, 2020).

Thirdly, as the stakeholders are changing their preferences and demands, companies need to follow (Skarmeas & Leonidou, 2013; Hofmann, Busse, Bode, & Henke, 2014; Jørgensen & Pedersen, 2018, p. 9). Hofmann et al. (2014) argue that sustainability represents a potential problem if the stakeholder demands are not fulfilled. According to Hofmann et al. (2014), the problem arises if stakeholders' expectations are not met, and their reaction directly or indirectly provokes harm. An example of this might be partners or customers that perceive the organisation as illegitimate (Hofmann et al., 2014). Skarmeas and Leonidou (2013) find that the motivation behind sustainability implementation is crucial, as it will be exposed and affect the company. Motives driven by stakeholder demands or the company's egoism will increase scepticism, which for instance could lead to an unfavourable reputation that is challenging to reverse, as negative information will weigh heavier than positive information (Skarmeas & Leonidou, 2013). Therefore, it is important to live up to the increased demands of sustainability and transparency (Skarmeas & Leonidou, 2013; Jørgensen & Pedersen, 2018, p. 9). Jørgensen and Pedersen (2018, p. 14) highlights an upside of the changed

preferences and lifestyles, with the opportunity for success through new types of value creation.

2.1.3 Aligning Sustainability and Profitability

Several researchers argue that it is still possible to be profitable without being sustainable, and that it will be possible for several years to come (Jørgensen & Pedersen, 2018, p. 37). Despite this possibility, several researchers discuss the potential economic growth of sustainability activities, also known as the business case for sustainability (e.g. Friedman, 1970; Schaltegger et al., 2012; Schaltegger & Lüdeke-Freund, 2013; Jørgensen & Pedersen, 2015; 2018). Furthermore, researchers state that a potential, or even a critically important, competitive advantage is represented in the ability to navigate through the new environmental demands from stakeholders (e.g. Kiron et al., 2012; Hofmann et al., 2014). Schaltegger et al. (2012) convene the literary discussion and conclude that the current perspective recognises the existence of a link between economic gain and social- and environmental activities, without agreeing on its characteristics. Jørgensen and Pedersen (2018, p. 194) point at the inconclusive literary body of sustainability and profitability alignment. The two studies argue that activities for sustainability represent a potential rather than a guarantee of profitability, while Jørgensen and Pedersen (2018, p. 195) rephrase the prompt of the debate from whether sustainability pays, to "through which mechanisms sustainability efforts may lead to improved business performance".

Jørgensen and Pedersen (2018, p. 32) summarise the debate of the business case for sustainability, and divide the potential sources of economic growth into two approaches based on a division of negative externalities. The externalities of a company are the effects of their activities that are not included in their own calculations, where the negative externalities reflect their negative impact on society and the environment (Jørgensen & Pedersen, 2018, p. 32). To take advantage of the potential for profitable sustainability, companies should improve their external impact and attend to the right externalities through management, development and innovation (Schaltegger et al., 2012; Jørgensen & Pedersen, 2015). On one hand, organisations should take responsibility for their own negative externalities. This corresponds with the common belief that some sustainability issues are the responsibility of individual organisations (Freeman, 2010, as cited in Jørgensen & Pedersen, 2018, p. 28). In accordance with this common belief, Jørgensen and Pedersen (2018, p. 37) argue that the most profitable business practices could be the sustainable ones, as it is

becoming increasingly difficult to hide irresponsible practices. They also refer to studies where sustainable companies are found to be more profitable in the long run (Jørgensen and Pedersen, 2018, p. 38). In research it was found that profitable, and simultaneously sustainable, companies usually have a board of directors responsible for sustainability strategy and -results (Jørgensen & Pedersen, 2018, p. 38). Other factors that seemed to be present were sustainability performance linked to financial incentives, and both financial and non-financial measures included in control systems and reporting (Jørgensen & Pedersen, 2018, p. 38). On the other hand, other organisations' negative externalities can be exploited by providing solutions to the sustainability problem, which researchers argue is one of the biggest potential sources of profitability (Jenkins, 2009; Nidumolu et al., 2009; Porter & Kramer, 2011). Jørgensen and Pedersen (2018, p. 28) highlight the unique position of businesses in this situation, seeing how they are designed to identify opportunities in existing problems and turn them into profitable solutions.

In their recap on existing literature, Aragon-Correa et al. (2017) find that most researchers point to a positive relationship between sustainability and profitability. Still, they highlight that this is an equivocal and contingent relationship. Jørgensen and Pedersen (2018, p. 138) explain that the alignment of sustainability and profitability requires that actions for sustainability directly or indirectly imply increased revenue or reduced costs. An example is how an improved reputation can lead to increased revenue (Jørgensen & Pedersen, 2018, p. 129). Gjøsæter et al. (2019) highlight the challenge of combining new sustainable business strategies with the traditional focus of financial return. According to Aragon-Correa et al. (2017), many executives find the lack of short-term financial improvements after sustainability implementation problematic. Epstein et al. (2015) argue in a similar manner that there is an inconsistency between short-term earnings and long-term benefits. Epstein et al. (2015) claim that the pressure for short-term earnings through incentive systems will lead to a prioritisation of financial goals. This is due to the nature of many sustainability initiatives bringing long-term benefits (Aragon-Correa et al., 2017). Based on their arguments, Epstein et al. (2015) find it hard to imagine that social or environmental responsibility will be given precedence over financial performance in a situation where there is a conflict of interests. Similarly, Aragon-Correa et al. (2017) state that it can be a challenge to clearly communicate the financial benefits of sustainability throughout an organisation, as the benefits might be indirect and long-term. Laughland and Bansal (2011, as cited in Aragon-Correa et al., 2017) provide evidence that a lack of communication with

stakeholders is one of the reasons companies struggle to become more sustainable. In addition, Aragon-Correa et al. (2017) highlight the need to "afford" to invest for sustainability, which is a consideration that goes beyond the positive effect the investments might lead to. Even though sustainability initiatives may result in long-term financial gains, Epstein et al. (2015) argue that the different initiatives' need for resources might be conflicting, and that the sustainability initiatives are unlikely to be prioritised as short-term financial considerations outweigh long-term financial benefits.

All in all, there is a potential to align sustainability and profitability, for instance through the organisation's, or other organisations', externalities (Schaltegger et al., 2012; Hofmann et al., 2014; Jørgensen & Pedersen, 2018, p. 32). Some researchers even argue that sustainable businesses will be the most profitable in the long-run (Eccles, Ioannou, & Serafeim, 2014; Gulbrandsen et al., 2015; Jørgensen & Pedersen, 2018, p. 37). Despite the growth of the literary body concerning the alignment of sustainability and profitability, the journey towards sustainability is likely to end up an unfinished struggle for most organisations (Epstein et al., 2015; Aragon-Correa et al., 2017; Jørgensen & Pedersen, 2018, p. 4 & 174). Seeing how executives are not affected by sustainability in their decision-making, even though the theme is considered materially important, these issues can be classified as a conflict (Aragon-Correa et al., 2017).

2.2 Management Control Systems as a Balanced Package

The theoretical foundation of our discussion of MCS, will be the LoC-framework. The historical path that led to it, and the framework itself, will be described in section 2.1.1. At the core of the framework is the balance of its four levers, which will be elaborated on in section 2.1.2. Lastly, section 2.1.3 will summarise the relevant critique of the framework.

2.2.1 The Levers of Control Framework

Behind the Levers of Control framework lies years of empirical studies and theoretical development (Martyn et al., 2016). Based on the typology of Miles and Snow (1978, as cited in Martyn et al., 2016), Simons (1987) found a strong relationship between strategy and the use of MCS in his analysis. Using the results from his 1987 study as a foundation, Simons (1990) studied managers' use of different MCS based on their perception of strategic uncertainty in a dual case study. This led to the distinction between the diagnostic and the

interactive control system, which he later confirmed in a multiple case study (Simons, 1990; 1991). The complete framework emerged after having conducted a larger case study based on interviews, where all the participating organisations used formal MCS to reach their strategic agenda (Simons, 1994). These studies led to his book from 1995 describing the LoC-framework.

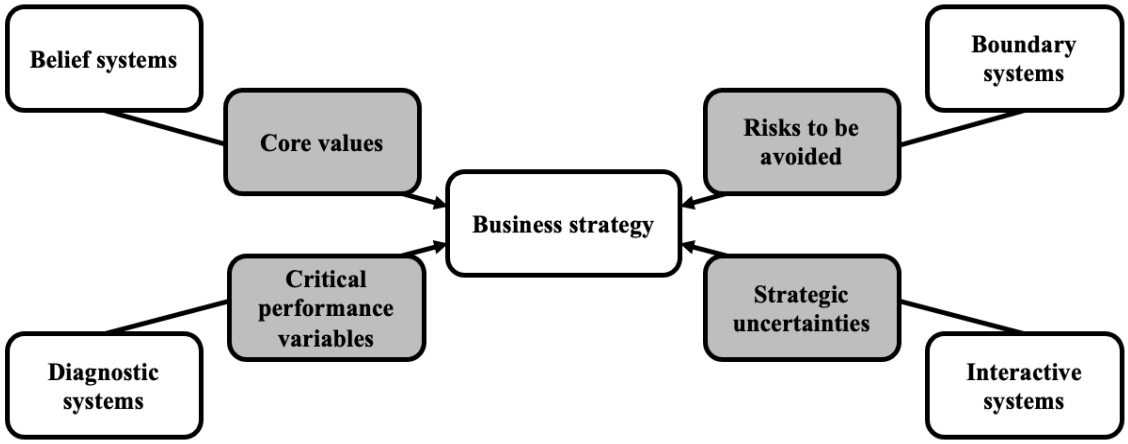

Figure 1: Based on Simons' LoC framework (1995, p. 7)

As Figure 1 illustrates, Simons (1995a, p. 6) divides his framework into three levels: business strategy, key constructs, and levers of control. The thought is that the levers will control the key constructs that need to be taken into account in order to follow the organisation's strategy. The key constructs can be separated into *core values, risks to be avoided, critical performance variables, and strategic uncertainties*. Each key construct is controlled by its own lever; the core values are controlled in belief systems, risks in boundary systems, critical performance variables in diagnostic control systems, and strategic uncertainties in interactive control systems (Simons, 1995a).

The formal belief system inspires and motivates employees to explore and create through appropriate actions (Widener, 2007). The lever consists of explicit organisational statements, for instance purpose- and mission statements, that articulate and strengthen the key construct of *core values* (Simons, 1995a, p. 34; Laguir, Laguir, & Tchemeni, 2019). In his later work, Simons (2010) explains the guiding role of the core values as a tool to instruct which interests to prioritise in situations of conflict.

Simons (1995a, p. 57) describes the boundary system with its rules and constraints as the yang to the warm and positive yin of the belief system. The boundary system provides definitions and parameters that communicate minimum standards or classify activities as

acceptable or off-limits to ensure that risks can be avoided effectively (Widener, 2007; Laguir et al., 2019). The lever can be visualised as a drawn box surrounding potential opportunities, where those with undesired levels of risk lie outside of the line (Simons, 2000, as cited in Martyn et al., 2016).

The diagnostic control system seeks to motivate employees to align their behaviour and perform in accordance with the organisation's objectives (Widener, 2007). Constraints are provided through the lever's formal practices, for instance measurement and monitoring of outcomes and guidance of employee behaviour (Simons, 2000, as cited in Martyn et al., 2016; Laguir et al., 2019). The critical performance variables can be evaluated in terms of financial and nonfinancial objectives, and can thus be used as a benchmark against target objectives and competitors (Ittner & Larcker, 2003; Widener, 2007). The lever holds predefined goals, incentive systems, variance reports and employee feedback (Simons, 2000, as cited in Martyn et al., 2016). The information provided allows the managers to focus on underlying drivers that can help realise the business strategy (Widener, 2007).

The formal processes of the interactive control system enable innovation and learning between managers and subordinates through face-to-face meetings and active dialogue (Simons, 1995a, pp. 86-87; Widener, 2007). Decision-making, reasoning, and action plans are challenged and debated between top managers and subordinates, resulting in a richer understanding of potential opportunities and an improved strategic prioritisation (Martyn et al., 2016; Laguir et al., 2019). The forward-looking approach of the interactive control system seeks to identify and gather information about potential emerging strategies and strategic uncertainties in the dynamic business environment (Simons, 1995a, pp. 86-87; Widener, 2007; Laguir et al., 2019). Bisbe, Batista-Foguet, and Chenhall (2007) argue that successful adaptation over time is tightly connected to an understanding of strategic uncertainties, like competitive dynamics and internal competencies.

The diagnostic control system is paired with the interactive control system since the same tools can be used in both systems, albeit in different ways (Simons, 1995a, pp. 109-110). In the diagnostic control system, the tools are employed mechanically and traditionally, while in the interactive control system they are employed with an organic and learning-oriented approach (Ferreira & Otley, 2009). According to Widener (2007), the managers choose which tools they would like to use interactively, and which tools they would like to use

diagnostically. For instance, both performance management and budget processes can be used interactively and diagnostically (Widener, 2007).

2.2.2 The important balance of the four levers

The balance of the four levers is essential in the framework, where the pairs of levers pull in opposite directions and each lever protects a different priority (Simons, 2000, as cited in Martyn et al., 2016). Simons (1995a, p. 152) argues that the four levers need to have a holistic and integrated balance, to achieve effective control of business strategy. This is because the levers are only powerful when their forces create a "dynamic tension between opportunistic innovation and predictable goal achievement" (Simons, 1995a, p. 153), not as individual tools. Furthermore, Simons (1995a) highlights the simultaneous need for efficiency and innovation, which requires high degrees of both controlling and enabling systems at the same time. When dynamic tension is generated, Simons (1995a, p. 153) claims that the organisation will experience positive growth since both long- and short-term goals will be reached. When balanced, a company can develop innovative solutions within the boundaries of the company's interests (Simons, 1995a, p. 10; Martyn et al., 2016). Simons (1995a, p. 152) claims that the balance between the four levers can be customised to the strategic context and life cycle phase of a company to ensure that the levers emphasise the crucial priorities of the company.

An imbalance between the four levers can lead to undesirable consequences. Simons (1995b) argues for the essential balance between the pair of belief and boundary systems, and presents a visual explanation of the important breaks in a fast car. In a car driving with a speed limit of 20 km/hour, the excellence of the breaks is not as important as in a formula 1 car. Here, the lack of excellent breaks can lead to the death of the driver. In the same way, Simons (1995b) states that a faster moving organisation, with strong and motivating belief systems, needs excellent boundary systems to keep the organisation on track. The combination of the two levers enables employee autonomy and innovation opportunities within predefined borders (Widener, 2007). Contrastingly, Mundy (2010) argues for the opposite pitfall, where rigid boundaries can prevent the discovery of better solutions. Mundy (2010) also highlights the balance of the other pair of levers; the diagnostic constraints and the interactive motivators. An example of a pitfall in this regard is overemphasised interactive processes, which can lead to the generation of continuous change and an unstable

organisation (Mundy, 2010). On the other hand, too much focus on diagnostic systems can inhibit innovation and creativity (Mundy, 2010).

Widener (2007) and Mundy (2010) argue for the interrelated package of MCS, where each of the levers influence each other in a positive or negative manner. The belief system positively affects the three others. The interactive system is both influencing and is influenced by the boundary and diagnostic systems. For instance, the systems of constraint enable efficiency in the interactive system by clearly marking off-limit areas and directing the efforts towards goals to reach. Furthermore, management of operational risk can be controlled both through measurements and targets in the diagnostic system, and in the interactive system through opportunity seeking (Widener, 2007). Through their explanation of these interdependencies, Widener (2007) and Mundy (2010) emphasise the importance of balance between all four levers in the design of a MCS.

2.2.3 Critique of the LoC-framework

In their research, Ferreira and Otley (2009) provide an overview of the critique of the LoC-framework. The first element is the lack of sufficient attention on socio-ideological and informal controls (Collier, 2005; Ferreira & Otley, 2009). The socio-ideological controls are defined by Ditillo (2004) as tools that define the ideals of the organisation and then persuade the people of the organisation to adopt them. The informal system can be explained as culture, socialisation, and norms that can have a significant strengthening effect on the formal systems (Collier, 2005; Laguir et al., 2019). Even though informal controls are less visible and intentional, several researchers argue for their importance and effectiveness (e.g. Collier, 2005; Laguir et al., 2019). Both Martyn et al. (2016) and Langfield-Smith (1997) acknowledge the lack of informal systems in the LoC-framework, but instead they discuss the implicit considerations of the informal controls. The need for a more explicit consideration is contested in the body of MCS research, as Martyn et al. (2016) present the need for further research on the usefulness of the framework in the examination of informal controls. Despite the literary debate of explicit inclusion, we assume that the informal controls are implicitly included in the framework.

Furthermore, Ferreira and Otley (2009) criticise Simons (1995a) for his sole focus on top management and large companies. Malmi and Brown (2008) highlight Simons' (1995) explicit limitation to managers' use in his definition of MCS. As Simons (1995a, p. 5)

defines MCS as “the formal, information-based routines and procedures managers use to maintain or alter patterns in organisational activities”, one can argue that the focus on managers is confirmed. Nevertheless, the LoC-framework has been used as the basis of several studies at middle management levels, for example the studies of Frow, Marginson, and Ogden (2010) and Marginson and Bui (2009). Due to the sole focus on top management, Martyn et al. (2016) debate the relevance of the LoC-framework, as business changes towards increased empowerment at middle management levels. Furthermore, Martyn et al. (2016) present counter arguments for the critique that the LoC-framework has a sole focus on large companies, as later research based on the LoC-framework have included small and medium enterprises (e.g. Granlund & Taipaleenmäki, 2005; Janke, Mahlendorf, & Weber, 2014). Therefore, it seems like the intentional focus on large companies is not a practical limitation of the framework. Ferreira and Otley (2009) also highlight that the framework can be used on not-for-profit organisations, which increases the width of applicability compared to other frameworks. All in all, the applicability of the framework is wide, even though it is limited by its focus on top management.

As another argument, Ferreira and Otley (2009) highlight the diffuse definitions of the included concepts, which leave room for subjective interpretation. The ambiguous definition of the interactive control system comes as a sixth argument of critique in their study, as the system can be understood both as a tool for opportunity seeking and as the interactive use of control (Ferreira & Otley, 2009). In this relation, tools of control, for instance balanced scorecard and budgets, can be categorised under several levers of control (Abernethy & Brownell, 1999; Tuomela, 2005; Ferreira & Otley, 2009). Ferreira (2002, as cited in Ferreira & Otley, 2009) explains that the manner in which the tool is employed is what makes it diagnostic or interactive. Still, this can lead to confusion and subjective interpretations of the LoC-framework. According to Martyn et al. (2016), the high variance in the interpretation of the interactive control system in research indicates that the concept is too vague. Still, the respondents from the study of Ferreira (2002, as cited in Ferreira and Otley, 2009) claim that the interactive system is easy to understand and to place in relevant business areas, which questions the idea that the framework is vague.

Several researchers argue that by referencing the mutual and complementary balance between the four levers, the framework does indeed provide a holistic approach to MCS (Widener, 2007; Ferreira & Otley, 2009; Mundy, 2010). Ferreira and Otley (2009) argue that the holistic approach is the nature of the LoC-framework, since Simons (1995a) stresses that

it is only relevant as a balance between all levers, and not as separate tools. Ferreira and Otley (2009) also highlight the ease in which other frameworks complement it, as the levers of the LoC-framework can include a wide range of management tools. Furthermore, Ferreira and Otley (2009) argue for the usefulness of the LoC-framework in describing case-based research. As the framework provides a way of classifying large amounts of data without barriers to observing other relevant aspects, it can provide a method of understanding and describing a wide range of organisational MCS. Based on these strengths and the counter arguments to several of the weaknesses, the LoC-framework is considered to be strong and sustainable, and relevant for this study.

2.3 Integration of sustainability in Management Control Systems

One of the studies that have developed Simons' (1995a) framework is the study of Gond et al. (2012). This extension includes a new management control system directed for sustainability (SCS), and its integration with the traditional MCS. The MCS and SCS are based on the four levers, explicitly on the diagnostic and interactive systems, and implicitly on the belief and boundary systems. The integration between MCS and SCS will be described in section 2.3.1. Gond et al. (2012) also include the effect on the triple bottom line as one of the measures of the configurations. This effect related to the new dimension of integration will be presented in 2.3.2. Lastly, this section elaborates on the critique of the framework in 2.3.3.

2.3.1 Configurations and the Dimension of Integration

Gond et al. (2012) present eight different configurations in their framework, illustrated in Table 1 below. These configurations model the relationships between control systems and strategic processes (Gond et al., 2012). Battaglia, Passetti, Bianchi, and Frey (2016) explain that "these configurations indicate different modes of managing, monitoring and controlling sustainability, as well as their importance in relation to internal decision-making and external accountability and relationships with stakeholders" (p. 215). It is important to note that the framework is focused on describing various methods rather than presenting an ideal.

Configuring uses and integration of control systems.		Uses of control systems			
		Diagnostic use of MCS		Interactive use of MCS	
		Diagnostic use of SCS	Interactive use of SCS	Diagnostic use of SCS	Interactive use of SCS
Level of control systems' integration	Low *Decoupling*	Configuration A **Dormant decoupled strategy** TBL: Low	Configuration B **Strategy emergence through sustainability** TBL: Medium	Configuration C **Compliance-driven sustainability strategy** TBL: Medium	Configuration D **Schizoid sustainability strategy** TBL: High (short-term)
	High *Tight coupling*	Configuration E **Dormant integrated strategy** TBL: Low	Configuration F **Sustainability-driven organizational strategy** TBL: Medium	Configuration G **Peripheral sustainability integration** TBL: Medium	Configuration H **Integrated sustainability strategy** TBL: High (long-term)
SCS, sustainability control systems; MCS, management control systems; TBL, triple bottom line					

Table 1: Based on the framework of Gond et al (2012)

The integration between the two control systems is a process that covers technical, organisational, and cognitive aspects (Gond et al., 2012). *Technical* integration is by and large a methodological integration of the two systems, where internal sustainability management activities are included in the traditional activities of the MCS (Gond et al., 2012). An organisation with a lack of technical integration will not be able to realise the potential methodological synergies of their SCS and MCS in terms of efficient allocation of time and resources. *Organisational* integration is based on the premise that management control is not something an organisation *has*, but something its people *do* (Gond et al., 2012). Battaglia et al. (2016) describe it as referring to how a company organises for sustainability through their actors and processes. Organisational integration assumes that only the formal structures and roles that facilitate discussion about sustainability will contribute to successful management and measurement of sustainability issues (Battaglia et al., 2016). Hence, an organisation must incorporate sustainability into their formal framework (Battaglia et al., 2016). *Cognitive* integration refers to how the employees of an organisation view sustainability in the context of the control system (Gond et al., 2012). Additionally, it includes how these different mindsets and points of view can interact to

create opportunities through sharing knowledge and overcoming cognitive boundaries due to a lack of mutual understanding (Gond et al., 2012). Gond et al. (2012) and Battaglia et al. (2016) stress the need for an overlap in the understanding of sustainability across managerial positions, to be able to reach complete integration between MCS and SCS. In addition, Hoffman and Bazerman (2007) state that this overlap in understanding is crucial to eliminate unsustainable practices.

The *level of integration* dimension that the configurations are classified by is an aggregation of the three forms of integration (Gond et al., 2012). As such, it is possible that the presence of one form of integration can compensate for another form missing (Gond et al., 2012). This can be exemplified by how collective cognition among the users of the MCS and SCS can compensate for the lack of technical integration by ensuring a free flow of information (Gond et al., 2012). In addition, if one form of integration is strong, it could have the fortunate result of strengthening the couplings of the other two (Gond et al., 2012). This is exemplified by how a strong technical integration could result in higher organisational integration by introducing new shared practices, which in turn could strengthen the cognitive integration through the sharing of knowledge (Bechky, 2003, as cited in Gond et al., 2012, p. 210).

2.3.2 Integration and Triple Bottom Line

The resulting unique configurations have varying levels of stability, frequency, and successful triple bottom lines (Gond et al., 2012), as is evident from Table 1. In regards to the research question, the success of the triple bottom line is essential. Gond et al. (2012) argue that how well sustainability is integrated into strategy is a result of how the organisation has employed the tools they have at hand. As an example, they claim that there is no guarantee that strong integration is the best option. On one hand, Gond et al. (2012) illustrate that a strong integration can have negative effects, such as excessive economic rationalisation or over-bureaucratisation of sustainability initiatives. On the other hand, strong integration can increase creativity and consciousness around the topic. Thus, it's not a given that a configuration with strong integration will lead to the best three-dimensional result in the long-term, according to Gond et al. (2012).

Even though Gond et al. (2012) do not explicitly describe the effect of integration on the success of the triple bottom line, the framework provides an implicit description when

comparing pairs of configurations where integration is the differentiator. Both Configuration A and Configuration E are unlikely to be successful in regards to the triple bottom line. Hence, the vertical movement from the less integrated Configuration A to the more integrated Configuration E does not lead to an improvement. Likewise, the vertical movement from the less integrated Configuration B to the more integrated Configuration F does not improve the ability to reach a successful triple bottom line, as both configurations have modest success in this area. The movement from Configuration C to Configuration G tells a similar tale of no improvement on the triple bottom line. The last vertical movement from Configuration D to Configuration H does not increase the chance of a successful triple bottom line, but changes the time span from short-term success in Configuration D to long-term success in Configuration H. In summary, based on the vertical relationships of the configurations, Gond et al. (2012) do not point out a strong direct relationship between triple bottom line performance and integration of MCS and SCS.

Still, Battaglia et al. (2016) argue that integration of sustainability in the strategy of the organisation can lead to benefits such as a reduced use of natural resources, healthier workspaces, and an improvement in the awareness of how the organisation might impact the environmental and social dimensions. Hence, the triple bottom line could be improved as a result of integration. De Villiers, Rouse and Kerr. (2016) highlight several advantages of integration, illustrated by the three-dimensional integration of the MCS tool *balanced scorecard* (BSC). The internal communication and operationalisation of defined ideals in terms of sustainability, and a formalised responsibility of the factors within all three dimensions are benefits achieved through improved integration (de Villiers et al., 2016).

2.3.3 Critique of the framework

A critique of the framework of Gond et al. (2012) is whether it adds any practical value. Gond et al. (2012) highlight that their framework is a classification, and that success is achievable regardless of the type of configuration. The level of success is dependent on an organisation's ability to take advantage of the opportunities given by their configuration (Gond et al., 2012). Thus, one could claim that such a classification is useful as a tool for describing and comparing organisations, both within and across sectors. This value is similar to the value of the LoC-framework, hence one can assume that the framework might face similar critique. In this regard, Ferreira and Otley (2009) have argued for the relevance of these kinds of frameworks. Hence, the same conclusion has been reached here as with the

critique of Simons (1995a). The framework has value as a language to help describe and analyse organisations.

Another critique towards Gond et al. (2012) is that they only focus on two of the four levers in Simons (1995a) framework. Several researchers argue for the need to employ the framework as a whole due to the importance of the balance between the levers, where neglection of two of the levers could lead to an incomplete picture of an organisation (Widener, 2007; Mundy, 2010). Gond et al. (2012) inadvertently answer this critique in their own study by making it clear that:

> Focus upon two levers of control from Simons' (1995) LoC-framework should not be interpreted as the neglect of the other two levers. [...] belief and boundary systems surround the use of interactive and diagnostic controls and therefore cannot be considered as separate from them. (Gond et al., 2012, p. 207)

This argument has theoretical backing seeing how interactive-belief systems are in place to capacitate the actors of the organisation, while the boundary-diagnostic systems restrain them (Gond et al., 2012). In general, the belief and boundary systems are more demanding to analyse formally than their partners, but are nevertheless useful to flesh out and analyse the findings. Hence, all four levers are explicitly or implicitly employed, and the framework of Gond et al. (2012) can be said to provide a complete picture of an organisation.

Although these critiques are important to address, they do not take away from the significance and value of the framework. Accordingly, Gond et al.'s (2012) framework has been deemed a fitting model for the analysis of Grieg Star.

2.4 Summary of Literature

Based on the existing literature we have developed a model to describe the mutual influence between management control systems and the conflict management of sustainability and profitability. This model can be considered to be the conceptual basis of our research question, rather than a theoretical framework to be tested.

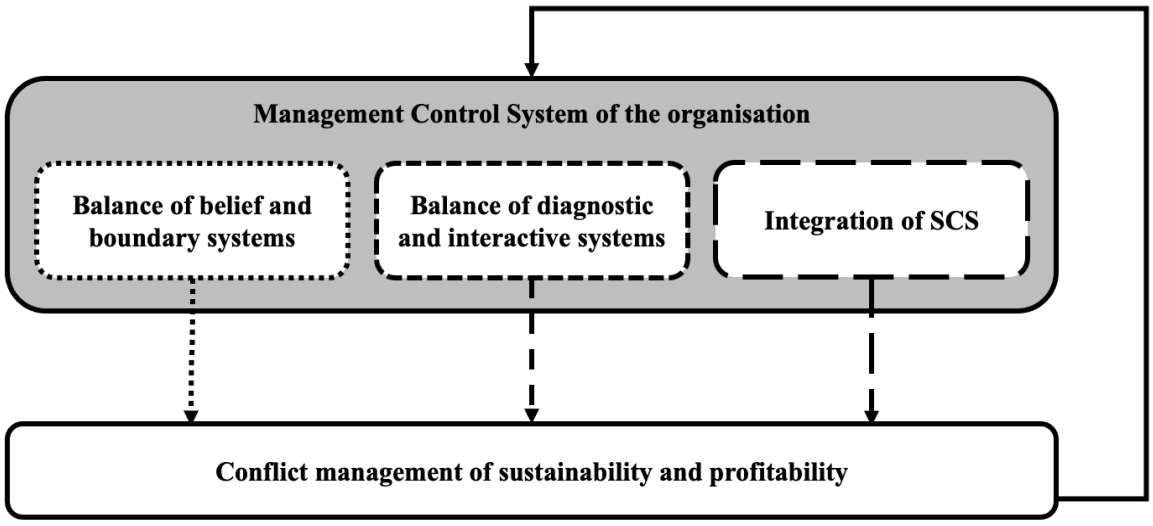

Figure 2: The conceptual basis of the research question

Through the research question, we seek to investigate what elements of the MCS are influencing the management of conflicts between sustainability and profitability. This influence is represented by the arrows emanating from the three boxes within the MCS and arriving at the box *Conflict management of sustainability and profitability*. Based on the frameworks of Simons (1995a) and Gond et al. (2012), we extracted three elements to illustrate the MCS of an organisation: the balance of belief and boundary systems, the balance of diagnostic and interactive systems, and the integration of SCS. The study will discuss if and how elements within these factors influence the management of conflicts between sustainability and profits. Therefore, the boxes: *the balance of belief and boundary systems*, *the balance of diagnostic and interactive systems*, and *the integration of SCS* will be adapted to the factors that are found to be relevant for the management of conflicts, based on the findings of the study. In accordance with literature, the balance of the two pairs of levers is crucial for the LoC-framework, and will therefore be included as boxes in the theoretical framework of this study.

In addition, the research question includes the question of how the MCS of an organisation is influenced by the management of conflicts between sustainability and profits. This link is illustrated with the arrow from the box *Conflict management of sustainability and profitability* turning back to *the MCS of an organisation*. Any influencing factors discovered in the results of the study will be added to the framework as a source of influence on the MCS.

3. Methodology

In the third chapter we will explain the reasoning behind our methodological choices for answering the research question. In section 3.1 the research design of the study will be explained, before moving on to section 3.2 where the data collection process will be described. Section 3.3. will elaborate on how the data was analysed. Section 3.4 discusses the quality of the study, and section 3.5 looks at the ethical considerations relevant for this study. The limitations of the study will be elaborated on in section 3.6. Finally, the methodological choices will be summarized in section 3.7.

3.1 Research Design

In this section we will discuss our choices regarding the research design of the study, in particular the research approach, purpose, method, strategy, and time horizon.

3.1.1 Research Approach

Of the three approaches to research, the inductive one is deemed the most appropriate for this study. The research approaches can be thought of as a continuum with the inductive approach of theory building on one end, the deductive approach of theory testing on the other, and the abductive approach somewhere in the middle (Saunders, Lewis, & Thornhill, 2019, pp. 152 & 155). Based on theory, the deductive approach researches whether the gathered data can validate extant frameworks or other concepts (Saunders et al., 2019, p. 152). The process of a deductive study is to define hypotheses based on theory, and accept or deny these hypotheses through empirical testing (Ghauri, Grønheug, & Stange, 2020, p. 19). The inductive approach is focused on generating new theory and expanding existing ones; hence, the collected data is the foundation from which themes and patterns are identified and conceptual frameworks are created (Saunders et al., 2019, p. 153). Just as common in literature is the abductive approach, placed between the inductive and deductive approach on the continuum (Saunders et al., 2019, p. 156). An abductive study is flexible in terms of movement between theory and data, in contrast to an inductive or deductive study (Saunders et al., 2019, p. 155). After looking at the established practice, Saunders et al. (2019, p. 156) state that it is difficult, or even impossible, to conduct a purely inductive or deductive study. Hence, most research projects include at least some elements of abduction in practice.

This study will be based on an inductive approach to explore the two-way influence between MCS and the conflict between sustainability and profitability. The goal is to use the insights from the collected data to develop a conceptual framework that will explain any discovered links. The concept of MCS has been studied for years, and the literary body of sustainability versus profitability has developed tremendously over the last decade. Nonetheless, there is still a lack of research on the interrelation of the two areas, resulting in a call for research and theory building (Jørgensen & Pedersen, 2018, p. 194; Rötzel et al., 2018; Gjøsæter et al., 2019; Narayanan & Boyce, 2019). Furthermore, Ghosh et al. (2019) request more research within different institutional contexts. In this relation, the context for maritime organisations in regards to national and international regulations is found to be relevant. Beyond being in compliance with the minimum regulations enforced by the IMO, the maritime organisations have not met the increased stakeholder demands for environmentally friendly organisations until recently (Jørgensen & Pedersen, 2018, p. 213). Therefore, the inductive approach is deemed appropriate for this research project. Nonetheless, this study uses some elements of the abductive approach as we uncover and describe the organisational and managerial situation of Grieg Star based on the existing frameworks of Simons (1995a) and Gond et al. (2012).

3.1.2 The Purpose of the Research Design

The nature of the research project will determine the purpose of the research design. For this study, an exploratory purpose was deemed to be the most appropriate. According to Saunders et al. (2019, p. 186), a project can be exploratory, explanatory, descriptive, or evaluative. The exploratory purpose seeks to enhance the understanding of a topic of interest through open questions and a flexible research process (Saunders et al., 2019, p. 187). This purpose is appropriate when the research problem is poorly understood (Ghauri et al., 2020, p. 63). The purpose of an explanatory study is to establish causal relationships through the examination of a problem or a situation (Saunders et al., 2019, p. 188). A descriptive study has the purpose of describing events, persons, or situations in an accurate manner (Saunders et al., 2019, p. 187), where the research problem is structured and well understood (Ghauri et al., 2020, p. 64). Lastly, the evaluative studies seek to assess the effectiveness of something, for instance an organisation or an organisational tool (Saunders et al., 2019, p. 188). Often an evaluative study includes a comparison between alternatives or towards existing theory (Saunders et al., 2019, p. 188).

Since there is little extant literature on the precise topic of this research project, an exploratory study is useful to illuminate and clarify the nature of the phenomenon (Saunders et al., 2019, p. 187). Furthermore, the formulation of the research questions reflects an explorative nature, as the questions seek to explore *how* management control systems and priorities between sustainability and profitability influence each other. Exploratory research is also highly adaptable to change, meaning that the results of new data may change the direction of the study towards the new insights (Saunders et al., 2019, p. 187). The exploratory is therefore deemed appropriate as the inductive study can change direction during the writing process, for instance due to surprising findings.

3.1.3 Research Method

For the research method, this study uses qualitative data in favour of quantitative data or mixed methods. According to Ghauri et al. (2020, p. 96), the two methods are distinguished by their use of measurements. Whereas quantitative studies use numeric methods such as graphics and statistics to examine relationships between variables, qualitative studies are characterised by non-numeric meanings derived from images and words through a variety of techniques of data collection and analysis (Saunders et al., 2019, pp. 178-179). The two approaches to research methodology can be seen as two ends of a continuum, where mixed methods in between combine techniques from both qualitative and quantitative methods (Saunders et al., 2019, p. 182). In addition to the possible combination of the two, Ghauri et al. (2020, pp. 97-98) highlight the possibility to quantify qualitative data, and conclude that the method is never either quantitative or qualitative, but the techniques can be.

When a problem is unstructured and the research is modest, qualitative research is most appropriate as it enables rich understanding and insights (Ghauri et al., 2020, p. 129). Saunders et al. (2019, pp. 155 & 179) also recommend the qualitative method in inductive studies to shed light on the research question from different perspectives and develop a theoretical contribution. Furthermore, this method will be beneficial in regard to the explorative purpose of this study as it enables in-depth exploration of meanings and perceptions from participants in different roles within Grieg Star.

3.1.4 Research Strategy

In terms of the research strategy, this study is a single case study of the organisation Grieg Star. We originally had another organisation as our case, but they withdrew from our

partnership in mid-October when they froze their cooperation with TERRAVERA. Luckily, we were able to partner up with Grieg Star only a few days later, which turned out to be a more appropriate organisation for the purposes of our study.

The research strategy is defined as the plan of action to answer the research question, and is tightly linked to the research question and the methodological choices of the research approach, purpose and method (Saunders et al., 2019, p. 189). Furthermore, we have to take practical considerations of time and resources available into account when deciding on our research strategy (Saunders et al., 2019, p. 190). As the research question seeks to explore a phenomenon within a gap in the literary body, there is a need for in-depth insights to conduct an inductive and exploratory study. Based on these methodological choices, Saunders et al. (2019, p. 187) suggest case studies and literary studies as they enable in-depth understanding that can answer why, what and how. Yin (2018, p. 32) also argues for the use of case studies when the research question is a question of *how*, like ours. All in all, we find a case study to be a good fit with our methodological choices.

Within the research strategy of case studies, there is a distinction between single and multiple case studies, where the single case study is used in our research project. This distinction concerns the question of whether the study bases its research on one or more cases (Yin, 2018, p. 84). The single case study is by definition the best option when studying the extreme, unusual, critical or revelatory cases (Yin, 2018, p. 91). Grieg Star has been awarded with a sustainability prize in competition with other companies based in Bergen, Norway. This implies that the organisation is seen as a role model, and thereof a critical case of interest. Saunders et al. (2019, p. 198) also highlight the single case study as appropriate when the case enables research of a phenomenon few have considered before. As argued in the introduction, the phenomenon of the research question is fairly unconsidered in literature, which implies a good fit with the single case study strategy (Jørgensen & Pedersen, 2018, p. 194; Rötzel et al., 2018; Gjøsæter et al., 2019; Narayanan & Boyce, 2019). This is another argument for a single case study being appropriate in this research project.

A single case study will most likely have a smaller sample of subjects than a multiple case study. According to Saunders et al. (2019, p. 155), this will be beneficial when conducting an inductive study where the reasoning is particularly concerned with the context. This is due to the case study strategy including a wider contextual understanding through qualitative data from multiple sources. One can discuss whether single case studies are less robust, as

multiple case studies generally provide more compelling evidence (Herriott & Firestone, 1983, as cited by Yin, 2018, p. 91). Still, multiple case studies usually require significantly more resources and time than single case studies, which we do not have due to the limited time span of four months. All in all, the single case study design seems to be the most appropriate in this study.

Another distinction within the relevant research strategy is between an embedded and a holistic design, where we have chosen the latter. The embedded case study design chooses a subdivision or another grouping of the chosen case, while the holistic case study design studies the organisation as a whole (Yin, 2018, pp. 87-88). In this case study it is relevant to discuss the understanding of the MCS across hierarchical levels and divisions. The research question is not concerned about mutual consensus within contrasting subunits, which an embedded design will lead to. On the contrary, the research question seeks to elaborate on how the organisation as a whole manages conflicts of profitability and sustainability. Therefore, the natural choice for this study is a holistic case study of Grieg Star, where the data is sampled from the whole company rather than a grouping. Even though Grieg Star is a part of the parent company the Grieg Group, a study of the whole subsidiary of Grieg Star is found to meet the requirements of a holistic study.

3.1.5 Time Horizon

For this study, a longitudinal time horizon was chosen. A longitudinal time horizon represents a “diary” perspective, where research of events over time is included (Saunders et al., 2019, p. 212). This is in contrast to the “snapshot” perspective of the cross-sectional time horizon, where a phenomenon is studied at a particular point in time (Saunders et al., 2019, p. 212).

Since the research question of this study is based on the mutual influence between two concepts, the study is examining a phenomenon where events over time have a significant role. The influence comes to play in change and development, or the lack thereof. In studies of change and development, Saunders et al. (2019, p. 212) recommend the longitudinal time horizon. Saunders et al. (2019, p. 807) define a longitudinal study to be a “study of a particular phenomenon (or phenomena) over an extended period of time”. Therefore, the time constraints of a thesis might be a problem when conducting a longitudinal study, where the intention is to collect data over a longer period of time. Still, Saunders et al. (2019, pp.

212 & 352) refer to secondary data as an enabler to conduct longitudinal studies when the research project has time constraints. As long as enough and comparable data over time is available, a study that includes secondary data can be classified as a longitudinal study (Saunders et al., 2019, p. 352). Since the time frame of this study was four months, secondary data from 2008 to 2019 was incorporated in the data collection process to enable a longitudinal time horizon beyond the limits of our time frame.

3.2 Data Collection

Our primary data is collected from interviews, and our secondary data consists of annual reports and relevant websites. Research data can be classified as primary data, collected for the purpose of the actual study, or secondary data, collected initially for another purpose (Saunders et al., 2019, p. 338). Natural sources of data in a case study are interviews, focus groups, observations, and other supplementary qualitative data, like documents and reports (Saunders et al., 2019, p. 198). In chapter 3.2.1, we will elaborate on our choice of primary data and how this was collected. As a way of gaining insight into the maritime sector, we have also gathered primary data based on a separate selection. This will be described in section 3.2.2. The use of secondary data, supplementary qualitative data, will be described in section 3.2.3.

3.2.1 Primary data: Semi-structured interviews of employees

The main source of qualitative primary data for this study is 7 interviews with 5 employees working at different hierarchical levels in Grieg Star. Yin (2018, p. 161) claims that interviews are one of the most important sources of evidence in case studies. The interviewees will be chosen based on the principles of heterogeneous sampling. This method of sampling enables selective election of a sufficiently diverse group of actors for the chosen topic, which makes it highly relevant for a single case study (Saunders et al., 2019, p. 321). Based on our chosen sampling technique, we requested five interviewees from different departments and hierarchical levels in the organisation. The sample cannot be considered representative for Grieg Star, which we will elaborate on in section 3.6, but according to Patton (2015, as cited in Saunders et al., 2019) a small heterogeneous sample could be a strength as the patterns that are revealed are likely to represent key themes in the organisation.

Table 2 below provides an overview of the participants and their general position in Grieg Star. Furthermore, the table includes the date and length of the interviews, and illustrates how each interview will be referred to throughout the study.

Interview	Date	Length (min)	Participant	Position
1	30.10.2020	35:25	1	Manager
2	03.11.2020	53:51	2	Manager
3	04.11.2020	33:33	3	Employee
4	04.11.2020	51:17	4	Employee
5	06.11.2020	49:53	5	Employee
Round 2				
6	12.11.2020	32:36	2 (known as 2.2)	Manager
7	13.11.2020	33:28	4 (known as 4.2)	Employee

Table 2: Overview of the interviewees

For this study, the type of interview considered appropriate is a semi-structured interview. In contrast to the unstructured method, which has no predetermined questions or themes, a rough interview guide will be used as a starting point for the semi-structured interviews (Qu & Dumay, 2011). The interview guide is provided in Appendix 1. Saunders et al. (2019, pp. 155, 179 & 186) argue for the appropriateness of the semi-structured interview for an inductive and exploratory study, as it enables the researchers to shed light on the research question from different perspectives and develop a theoretical contribution. Still, the interview guide will not be based on standardised questions. In contrast, the interview guide for a structured interview should be read in the exact same manner and order from interview to interview (Saunders et al., 2019 pp. 437 & 445). Saunders et al. (2019, p. 444) argue that this provides the flexibility needed to understand complex themes like attitudes and decisions.

The interview guide is divided into different themes related to the problem formulation and the research questions. The thematic categories will ensure the collection of the data needed to enable discussion and to draw conclusions to the research questions (Qu & Dumay, 2011). The questions in the interview guide will therefore be open and make use of the question words *what*, *how*, and *why* to encourage extensive answers (Saunders et al., 2019 p. 459). Furthermore, semi-structured interviews allow follow-up questions, discussions and

explanations whenever a new relevant theme appears or is in need of clarification (Saunders et al., 2019, s. 459). Hence, the thematic divisions include prompts to further or close the discussion of relevant topics in the interview (Saunders et al., 2019, s. 438).

Qu and Dumay (2011) explain the importance of introducing questions that are open and not directly related to the research question, to "kick start" the interview. According to Rabionet (2011), the introductions between interviewer and interviewee are critical for establishing rapport, which in turn will lead to more truthful and reflected answers. Qu and Dumay (2011) complement this with the claim that the interviewee should feel relaxed and ready to talk freely, not intimidated or nervous, before the interview starts. This can be accomplished through introductory questions together with a presentation of the interviewers and the project (Qu & Dumay, 2011). Therefore, we have included a first category of questions in the interview guide, the "warm-up". The category intends to start the interview by establishing a relation between the interviewee and the interviewer, in a professional and friendly manner.

In line with the inductive approach, it could be interesting to change the interview guide in accordance with the development of the study from interview to interview. According to Berry and Otley (2007), the very nature of case-based research is the openness to change during the research period. In this study, there were two major changes in the interview guide. Before we had to change the case for the study, we conducted one interview. In this interview we found that the language and terms were too theoretical and not understood by the participants. Another issue with the first interview guide was the use of the word *conflict*. This was perceived as a negatively loaded word, which proceeded to make the questions leading. According to Qu and Dumay (2011) leading questions should be avoided. Hence, we changed the interview guide to make use of the word *prioritisation* to be as neutral as possible. The second change was that we needed new questions for the second round of interviews. We wanted to deepen our understanding, and therefore needed new questions based on the information provided in the first round. The interview guide from the second round of interviews is provided in Appendix 2.

With the Covid-19 pandemic raging during our research period, we did not have the option to conduct the interviews physically. Therefore, we conducted our interviews digitally using Microsoft Teams and Google Meet. Jenner and Myers (2019) conclude that the procedure of digital interviews does not weaken the quality compared to in-person interviews. This

conclusion stems from the ability of digital interviews to keep the benefits from in-person interviews, such as: the sharing of personal and potentially 'politically incorrect' answers, the efficiency of the method, and the duration and execution of the interviews. Based on this discussion, we find the use of digital platforms for the interviews to be a good solution for our study.

Audio recordings, research notes, and being two researchers were beneficial for the interview process. Audio recordings present the opportunity to transcribe the interviews afterwards, and as such make the analysis process easier. According to Rabionet (2011) and her review of literature, recording audio is favoured over all other note-taking methods in a semi-structured interview. It will be essential to ensure great audio quality with good recording tools (Rabionet, 2011) to ensure an accurate transcription. The permissions for recording the audio will be collected in the form of a consent form in advance of each interview. In addition to audio recordings, we took notes during the interview. These notes provide a back-up in case there is a problem with the recordings, and they helped devise follow-up questions during the interview (Saunders et al., 2019, s. 461). One of the researchers followed the interview guide and the related prompts, while the other made notes and asked follow-up questions when necessary.

3.2.2 Primary data: semi-structured expert interview

In addition to the interviews of the employees in the case organisation, we conducted an interview with an expert from NTNU. This interview was conducted in the same manner, as a digital semi-structured interview with a similar interview guide. This source of primary data was needed to gain understanding of the technical aspects and the sustainable opportunities of the maritime sector. True to the nature of the inductive approach, the study can take unforeseen directions, and in the end we were not in need of in-depth technological knowledge in the discussion. Still, the interview provided relevant information and foundational knowledge about the maritime sector, which was helpful for our understanding since we are not experts within this field.

3.2.3 Secondary data: annual reports and the organisations' websites

Secondary data, like sustainability reports and governance documents, are useful to gain a deeper understanding of the MCS in Grieg Star in a cost- and time efficient way (Saunders et

al., 2019, s. 351). To be able to conduct a longitudinal study in our limited time frame of four months, secondary data that was collected over a longer period of time is needed. The documents that were analysed include the annual reports of Grieg Star from 2008 to 2019, as these were the ones we had access to. In addition, we examined the annual reports of the parent company, the Grieg Group where our access was limited to the years of 2014 to 2019. The annual reports have been used to understand the development of the company and their approach to sustainability over time. Lastly, the websites of Grieg Star and the Grieg Group have provided insight through information sites and articles.

3.3 Data Analysis

The technique chosen to analyse the collected data is Thematic Analysis. Saunders et al. (2019, pp. 652 & 660) claim that this technique can be used in all research approaches, due to it being both systematic and flexible (Saunders et al., 2019, pp. 652 & 660). With regards to the inductive approach of this study, Thematic Analysis is beneficial as the themes are derived from the data rather than theory. This provides an opportunity for directional change during the research and the opportunity to build conceptual frameworks based on the data (Saunders et al., 2019, p. 652).

The first step of the Thematic Analysis is to become familiar with the data through transcription of the verbal data of the interviews (Saunders et al., 2019, pp. 638 & 644). Each interview was transcribed as soon as possible after its completion to ensure it was fresh in memory and to avoid a build-up of transcription work (Saunders et al., 2019, p. 645). To reduce this time-consuming process, we used the voice-recognition software program Trint as a starting point for the transcription. Since it is challenging to ensure that the transcription is accurate even with the use of the software (Saunders et al., 2019, p. 645), we stayed true to the interviewees' wording to the best of our ability. Still, to enhance the readability of the transcripts we cleaned our data by excluding repeated words like "we, we, we"; filler words like "um", "you know", and "right"; and corrected grammatical errors (Burnard, 1994). One of the ways to ensure that the transcription is accurate is to send the completed transcripts to the interviewees (Saunders et al., 2019, p. 646). We deemed this to be too time-consuming for our study, as the spoken wording presumably would lead to the desire of the participants to correct grammar and use of language (Saunders et al., 2019, p. 646). Instead, we sent a separate sheet to each participant with their respective quotes, where the participants were

provided with the chance to approve the quotes in use. This approval from the participants helped us ensure the accuracy of the data collected in the study.

The second step is to code the data, which means to categorise units of data, for instance a word, a sentence or a paragraph (Saunders et al., 2019, p. 653). This step transforms the transcribed interviews into a manageable form of data for further analysis (Saunders et al., 2019, p. 656). Following the inductive approach, we coded all the data in a detailed manner as all data is potentially interesting, while the research question helped narrow the focus (Saunders et al., 2019, p. 653). The terms used for the codes were derived from the data, with new codes being developed whenever needed. Moreover, we kept all initial codes as their importance might be of relevance at a later stage (Saunders et al., 2019, p. 655). The continuous development of new codes required a re-coding after the first round of coding was finished (Saunders et al., 2019, p. 655). To streamline the coding process we used Delve, which is a type of computer-assisted qualitative data analysis software (CAQDAS) (Saunders et al., 2019, p. 656).

Even though the search for themes and relationships is to some extent done in the initial coding, this is considered a third step of the Thematic Analysis (Saunders et al., 2019, p. 656). After a long list of codes has been produced, the third step is to create a shortened list of themes in line with the research question (Saunders et al., 2019, p. 657). Each theme covers an important aspect of the research question, and consists of one or more related codes (Saunders et al., 2019, p. 657). The resulting primary and associated secondary themes were: *Triple bottom line* with the *environmental*, *social*, and *financial* dimensions; *balancing tools* with the *belief*, *boundary*, *diagnostic,* and *interactive* systems; and *change* with *external stakeholders* and *technology*.

With these established themes, the last step of the Thematic Analysis is to reach a well-structured dataset by evaluating, rereading, and reorganising the codes based on the themes (Saunders et al., 2019, p. 658). In this step the themes can be combined or split, and some relationships might be reconsidered (Saunders et al., 2019, p. 658). The process resulted in 6 main themes: Balancing, Belief system, Boundary system, Diagnostic system, Interactive system, Partnerships.

3.4 Research Quality

To ensure quality in the methodological choices of a research study it must be evaluated. For qualitative studies, Pratt, Kapland, and Whittington (2019) argue that quality in the form of reliability and validity cannot be evaluated in the same way as for quantitative studies. Traditionally, the focus has been on showing that the study can achieve similar results when the research is tested. Whether the same statements can be perfectly reproduced by another researcher has no direct value for an inductive and qualitative case study where the quality is based on the study's unique strengths and insights (Pratt et al., 2019). The evaluation of qualitative research should instead be based on the truth of the study, and the possibility to defend the author's claims based on the collected data (Pratt et al., 2019). According to Yin (2018, p. 78), there are four tests that must be conducted when evaluating a case study. These are construct validity, internal validity, external validity, and reliability. Internal validity is not relevant when evaluating an exploratory study (Yin, 2018, p. 78) and will therefore not be discussed further.

3.4.1 Construct validity

According to Yin (2018, p. 78), construct validity is about correctly operationalising the concepts being studied. This potential weakness is something we were aware of from the beginning. The recommended tactics are to use multiple sources of evidence and to have the participants review a draft of the paper (Yin, 2018, p. 80). These multiple sources include interviews with participants from different areas of the organisation who hold different levels of authority. In addition, we used secondary data such as annual reports from both Grieg Star and the Grieg Group, and their respective webpages. We therefore feel that we have a sufficient variety of sources of evidence. To fulfil the second step, we first sent the participants the quotes of theirs that we would like to use, and later sent them the whole first draft.

Due to the unfortunate situation with our first case study, we had the chance to test our interview guide and modify it to ensure that the respondents understood the questions correctly. This helped us to operationalize the theoretical concepts into clear questions for the participants.

3.4.2 External validity

External validity looks into how generalisable the findings from the study are to other relevant contexts (Saunders et al., 2019, p. 803). Due to the nature of a single case study, this research project will not be statistically generalisable for a larger population (Saunders et al., 2019, p. 450). Lincoln and Guba (1985, p. 219) argue that for these studies, one should instead use concepts such as transferability and confirmability to ensure external validity.

Confirmability is based on whether there are any similarities to other contexts, to make it possible to compare results against other studies (Lincoln & Guba, 1985, p. 316). A presentation of detailed descriptions of our methodology and process of analysis have been used to achieve this. In addition, a research notebook has been employed to gather our thoughts after the interviews. Hence, the results of the research article are illustrated rather than stated, and comparison is made possible.

Transferability is the possibility to verify the data through process descriptions, without the researcher's own verification (Lincoln & Guba, 1985, p. 319). Again, a scrutiny of the research is central, with elements like triangulation and research notes being essential tools (Lincoln & Guba, 1985, p. 319). Triangulation refers to using different data sources, methods, and researchers. This type of triangulation has been used in this paper as described in 3.4.1.

3.4.3 Reliability

Yin (2018, p. 83) explains that reliability is ensured when a study can be repeated with the same results. Saunders et al. (2019, p. 815) elaborate by explaining how to achieve this, such as through transparency in how sense was made from the raw data. Therefore, the study will provide the interview quotes that represent the raw data of the study, together with our interpretation of the quotes, in Chapter 5. The cleaned versions of the quotes have been approved by the participants through a review of their quotes and the full draft. This way of illustrating the chain of evidence provides the needed transparency, and therefore ensures the reliability to some extent. Despite any efforts to ensure reliability, it is notoriously difficult to replicate a qualitative case study. Lincoln and Guba (1985, p. 219) argue that instead of looking at reliability for qualitative studies, one should look at dependability. Dependability is secured by acknowledging factors such as instability and potential changes (Lincoln & Guba, 1985, p. 317). Lincoln and Guba (1985, p. 305) highlight concrete tools like

triangulation, which is used as described in 3.4.1. In addition, by giving a thorough account of our methodological choices and analytical processes, we have given future researchers the ability to test the dependability and reliability of this study.

3.5 Ethical considerations

Saunders et al. (2019, p. 252) define research ethics as choices and behaviours in research that are fitting for their context, with special consideration to the research object and other people that could be affected by the outcome of the research. In this relation, Saunders et al. (2019, pp. 257-259) present a set of ethical principles that need to be upheld in research studies of all approaches. In the context of the methodological choices discussed in this chapter, the principles of Saunders et al. (2019, pp. 257-259) lay the foundation of the ethical considerations of this study.

The first principle states that a voluntary and informed consent, that can be withdrawn at any time, should be given in written form from all participants (Qu & Dumay, 2011; Saunders et al., 2019, p. 258). The researchers should ensure that the participation is not coerced, and that the participants have knowledge of the intended outcomes, the interview process, and the researchers' roles (Qu & Dumay, 2011). Saunders et al. (2019, p. 465) also mention that it is crucial to respect the time invested by the organisation so that every employee can decide whether or not they are willing to spend the time that is needed on this project. To comply with this principle, the presented consent form in Appendix 3 was sent to all participants, including information about the project, the expected time needed for each interview and other practical information. The voluntary participation and the right to withdraw is clearly presented in the consent form, along with the contact information of the researchers. A signed consent form from the participants was collected before each interview.

According to Saunders et al. (2019, p. 258), privacy and anonymity of participants are important ethical principles. The need for confidentiality is particularly important when interviewing employees about their work life (Qu & Dumay, 2011). Therefore, the anonymity and privacy of the participants will be ensured through anonymised names, as each interview will be referred to by a specific number, and anonymised position titles – the interviewees will only roughly be divided in "higher" and "lower" positions, as "managers" or "employees". Information about confidentiality and anonymity was also included in the

consent form, and the participants could choose whether their position in the company was to be stated in the study. This also complies with the principle of Saunders et al. (2019, p. 258) of avoidance of harm, in terms of violating assurances. In this relation, the digital interviews are found beneficial, as neither external nor internal actors are unintentionally informed about the interviews, and the anonymity of the participants is preserved. When storing data, file names should ensure confidentiality (Saunders et al., 2019, p. 646). Therefore, the audio recorded interviews, transcribed files, and coded data only contained identifications by the participant number, referred to in Table 2. The process of ensuring confidentiality should be in compliance with legislation (Saunders et al., 2019, p. 258). Hence, the project was reported to NDS, Norsk senter for forskningsdata. Furthermore, the data was collected and stored with tools from the Norwegian School of Economics, and not private devices, to ensure safe storage of data.

Finally, the accuracy should be upheld to ensure responsible data analysis and reporting (Saunders et al., 2019, pp. 275-278). In this relation integrity, fairness, and an open-mind are mentioned as crucial principles to employ as researchers (Saunders et al., 2019, pp. 257-258). In this case, audio recordings are a great tool as they make sure that all the information gets analysed, not just those points that caught our attention during the interviews, or what was anticipated of the findings. The combination of computer-assisted transcription and manual editing will furthermore ensure that the accuracy is upheld to a great extent from interview to analysis. Another important point is that the interviewees will get the chance to read through the study, especially the parts where their own contributions have been discussed, to assure that they have been interpreted correctly. This ethical principle is also highlighted by Qu and Dumay (2011), who state that the opportunity to read the research output should be provided to all participants. The participants are informed about this opportunity in the consent form, and their quotes and a complete draft of the study was sent to all participants before publication.

3.6 Limitations

Due to this study being a master thesis conducted over the course of one semester, there are certain limitations that follow such a short project time. The first limitation is connected to our methodological choice to conduct a single case study. Studies such as these are beneficial in the sense that they provide in-depth knowledge and are well-suited for

exploratory research. However, they are quite time-consuming and are harder to generalise to other organisations and contexts. A longer time frame might have allowed us to do a multiple case study to increase the generalisability of the insights. Additionally, we only had access to five participants, where two of them gave a follow-up interview. Although they represented several levels in the hierarchy and were part of different departments, their views and experiences are unlikely to be representative for the whole of Grieg Star.

Secondly, we chose to conduct the interviews in English to eliminate the step of translating the interviews, which easily could have led to misrepresentation of the participants. We were aware of the risk that some participants might not be comfortable with the English language, and that this potentially could lead to more incomplete or shallow answers. However, we found the benefits of conducting the interviews in English to greatly outweigh the limitations of it. After having conducted all the interviews, it was clear that some participants would have preferred to speak Norwegian. Still, the interviewees became more relaxed during the first few questions, and the conversation flowed easily.

3.7 Summary of Methodological Choices

The methodological choices of this study are summarised in Table 3, based on the argumentation from Chapter 3.

Dimension	**Methodological choices**
Research Approach	Inductive
Research Purpose	Explorative
Research Method	Qualitative
Research Strategy	Single Case study
Time Horizon	Longitudinal
Data Collection	
• Primary	Semi-structured interviews
• Secondary	Annual reports and webpages
Data Analysis	Thematic

Table 3: Summary of methodological choices

4. Empirical Background: Grieg Star

In chapter 4, we will present Grieg Star as the empirical background for this study. Section 4.1 will elaborate on the empirical context, while the organisation will be described in section 4.2. In section 4.3, the organisation's position with regards to sustainability will be elaborated on.

4.1 The Maritime Sector and Norway's Relevance

The maritime sector represents a huge potential area for the reduction of global emissions, as the sector accounts for 2% of the CO2 emission related to global energy (Tattini & Teter, 2020). However, the roadmap towards sustainability has been unclear with regards to how emission reductions can be realised, where its non-inclusion in the Paris Agreement has been perceived as a sign of unwillingness or inability to act by environmental groups (Psaraftis, 2019). It was only in 2018 that the IMO introduced the goal of halving the total emissions of the sector before 2030, based on the total emissions from 2008 (Norsk klimastiftelse, 2020, p. 4). IMO is the UN's specialised agency with the responsibility of developing regulations that ensure safety and responsible conduct in the shipping industry worldwide (Lim, n.d.). To realise a shift of this scale, the organisations need to commit to lofty goals, and organise themselves in a way that magnifies these changes. Consequently, this sector is increasingly interesting to look at from a research point of view.

Compared to other shipping nations, Norway has high ambitions for sustainability in the sector, for example through Norsk klimastiftelse's arguments for zero emissions by 2050 (Norsk klimastiftelse, 2020, p. 4). Considering that Norway is the seventh largest shipping nation in the world, and the Bergen region accounts for 40% of the Norwegian fleet, this location is of international relevance (Maritime Bergen, n.d.; Regjeringen.no, 2018). Hence, Norwegian shipping and the location of Bergen is interesting from a research perspective as well.

4.2 Grieg Star

Grieg Star is a maritime corporation and an operator within ship owning and ship management (Grieg Star, 2020a). The company is a part of the Grieg Group, which was founded in 1884 by Joachim Grieg (Grieg Star, n.d.b). The Grieg Group is a family-owned corporation, where 75% of the ownership is divided among five family members, and the remaining 25% is owned by the Grieg Foundation (Grieg Star, 2020a). The Grieg Group is present in three areas of business: shipping and logistics, seafood, and investments.

Star Shipping was established in 1961, with operations within the trade of wood pulp and paper, and later also within conventional bulk and other industries requiring specialised ships (Grieg Star, n.d.b). In 2001, the fourth generation of the Grieg family took over the Grieg Group (Grieg Star, n.d.b). When Grieg Star was reorganised in 2008, Camilla Grieg became the CEO and Elisabeth Grieg took over as Chair of the Board (Grieg Star, n.d.b). The largest change came in 2017 when Grieg Star and Gearbulk entered into a joint venture to create the new pool G2 Ocean, which became the world's largest deep-sea breakbulk carrier (Grieg Star, 2019a). Grieg Star controls approximately 40 of the 130 open hatch and dry bulk vessels operated by G2 Ocean (Grieg Star, 2019a). In 2019, Camilla Grieg replaced Elisabeth Grieg as Chair of the Board, and Matthew Duke took over as CEO of Grieg Star (Grieg Star, n.d.b).

4.3 Sustainability in Grieg Star

There are several components that demonstrate the dedication of Grieg Star towards sustainability. Each of the sections elaborate on sustainability in Grieg Star, through different components. Section 4.3.1 relates to values, section 4.3.2 relates to initiatives, and section 4.3.3 relates to acknowledgements.

4.3.1 Values and the SDGs

Grieg Star shares their vision and values with the Grieg Group as a whole. Their vision is to "create lasting value through our common effort" (Grieg Star, n.d.a). The common value base for all subsidiaries in the Grieg Group is the four values that are meant to navigate employees when doing business (Grieg Group, n.d.a). The Group has four values that they want to be recognized as: *proud*, *solid*, *open*, and *committed*. First, the value of being *proud*

includes pride in the business, in a good working environment, and in contribution to the welfare of society. The second value, being *solid*, includes a long-term approach of having a strong economic foundation, high quality, and compliance with ethical principles. Examples of elements included in the value *open* are honesty, open minds, and integrity. Within the last value, *committed*, elements such as commitment to the vision and values, and an accepted responsibility for the society and environment are included. (Grieg Star, n.d.a)

The Grieg Group committed to the UN Global Compact in 2010, where Grieg Star, as the shipping company within the group, became a part of the UNGC Action Platform for Sustainable Ocean Business in 2019 (Grieg Star, 2020a). As an extension of this commitment, Grieg Star has also undertaken a number of the SDGs (Grieg Star, 2020a). These are SDG 4 *Quality Education*, SDG 5 *Gender Equality*, SDG 9 *Industry, Innovation and Infrastructure*, SDG 14 *Life Below Water*, and SDG 13 *Climate Action* (Grieg Star, n.d.c.). These goals are used as the foundation for the development of Grieg Star's strategy and their journey towards becoming a more sustainable company (Grieg Star, 2020a). The aim of SDG 4 and 5 is to ensure an educated and diverse workforce, with high quality and no discrimination. Grieg Star is involved in research initiatives to help reach SDG 9, as innovation is considered vital. In regards to SDG 13, Grieg Star is aware that the shipping industry is not sustainable, but they aim to be part of the solution to the problem. Lastly, the vision of the Grieg Group, "We shall restore the oceans", is in line with SDG 14. Therefore, there is an aim to implement initiatives such as reducing single-use plastic and improving the ballast water treatment in line with regulations. (Grieg Star, 2020a)

4.3.2 Initiatives for Sustainability

In response to the new challenges presented by climate change and the green shift, Grieg Star has introduced several initiatives already. One type of initiative was to create new companies with a specialised focus. Grieg Green, a subsidiary that works with sustainable recycling of ships and rigs, as well as Inventory of Hazardous Materials (Grieg Star, n.d.b), was established under the Grieg Star umbrella in 2010 (Grieg Star, 2020a). Already, more than 100 ships and offshore projects have been recycled at pre-approved shipyards, and more than 500 Inventories of Hazardous Materials have been issued (Grieg Star, 2020a). Grieg Edge was established in 2019 to "grasp the opportunities of decarbonisation and digitisation in a fast moving maritime world" (Grieg Star, 2020a). The company will look into potential

sustainable business opportunities adjacent to the core business of the Grieg Group (Grieg Star, 2020a).

Another type of initiative is to take part in research and development activities, both internally in Grieg Star and in collaboration with other companies. These projects are beneficial across the board, as they not only further the sustainability initiative, but also enable more efficient operations (Grieg Star, 2020a). An example of the launched partnership initiatives is the Zero Emission Energy Distribution at Sea (ZEEDS) that was introduced in 2019 (Grieg Star, 2020a). This initiative has the mission to reach zero emission shipping, where green ammonia as an environmentally friendly fuel alternative is the current focus (Nordic Innovation, n.d.).

4.3.3 Awards and Rankings

The Grieg Group and Grieg Star have received acknowledgements for their work towards sustainable shipping. First of all, the Grieg Group won the first ever Sustainability Prize in 2018 presented by the Bergen Chamber of Commerce and Industry and Fana Sparebank (Grieg Group, 2018). The jury's evaluation particularly emphasised how the Grieg Group has taken strides towards sustainability for years, and are still open to the challenges that lie ahead (Grieg Group, 2018). Secondly, Grieg Star has received acknowledgement for their work towards gender equality. The Norwegian SHE index ranks Grieg Star as number 18 out of 91, placing them among the best 20% of the companies in the index (Grieg Star, 2019b). The SHE index is based on a voluntary questionnaire about the companies' work to create a more diverse environment (Grieg Star, 2019b).

5. Results

In this section we will discuss the results of the interviews that were held. The structure of the chapter will be based on the six themes that were defined as a result of the data analysis. Therefore, section 5.1 discusses balancing, section 5.2 to 5.5 encompass the findings that are relevant for the Levers of Control framework, and section 5.6 explains the findings related to external influences. Finally, 5.7 summarises the findings and themes in a table.

5.1 Balancing

The theme of balancing is concerned with how Grieg Star handles the need for balance between the three dimensions of sustainability: profits, people and planet.

5.1.1 Finding 1

The idea of balancing the three elements of the triple bottom line seems to be widespread in Grieg Star, as the respondents all mentioned balance at some point during their interviews. The act of balancing seemed to only exist between the financial and environmental dimensions, and the financial and social dimensions. The balance between the social and environmental dimensions was not mentioned by the interviewees.

The main topic within the social element was the health and safety of the seafarers onboard the vessels. When looking at the relationship between safety and the financial aspect, most of the participants didn't seem to balance it at all. This is exemplified by a quote from Interviewee 4.2: "So from a safety perspective, even if you don't have the money, you will find money to fix that safety issue". Interviewee 2.2 also spoke passionately about this topic through quotes such as: "Safety is absolute, because it is a legislation, it is a requirement, and it is license to operate. If you don't have a safe ship, you can't operate"; and "We don't have that discussion, because if you have to spend five thousand dollars to be safe, then you spend five thousand dollars to be safe". Interviewee 2.2 nevertheless admitted that there was a balance of sorts between safety and commercial pressures:

> The main challenge is the commercial pressure versus safe operation. If you can make things happen faster, then we will make more money. That is the commercial pressure which our charterers shall impose, because we need to have that pressure.

> But we also need to have our seafarers feeling competent and trained enough to say "yes, that we can do" and "no, that we cannot do". And it's always a fine balance, and very often we see that when we have safety incidents, the reason was that they didn't stop and think. (Interviewee 2.2)

Another explanation for this lack of balance when it comes to safety is the strong correlation between safety and the bottom line, which is described by several participants. Interviewee 2.2. explained it in the following manner: “if you don't have a safe ship, it will show on your bottom line because eventually you won't be able to trade, or you collide. I don’t think you can compare those two”. Interviewee 4.2 described the strong correlation as such: “With safety, if you make a wrong decision there, in the worst case you will lose your complete asset – it will sink in the middle of the ocean. So, I think safety and finance have stronger links than sustainability and finance as of today”.

The definition of *balance* used when discussing safety and finance changes somewhat when the discussion turns to sustainability and finance. Here, the financial aspect seemed to be the reigning champion. Interviewee 4.2 said that “If you have a safety issue, that has to be fixed. If it’s a goodwill for the environment, it’s a discussion of whether it’s necessary to do or not”. Expanding on this, Interviewee 4 explained that “We have this intention that we should be a green business and we should run as green as possible. But it's always a balance between what is the cost and what are the benefits”, and “I think everyone knows that we can't just forget about the profitability” (Interviewee 4). Another employee confirmed that “you need to be able to survive to make sustainable decisions, but then you also need to make sustainable decisions in order to survive in the future” (Interviewee 5). This perception seems to be confirmed by the managers, through the quotes “of course, we need to make money, but what we can do, we will do” (Interviewee 1), and “how do we balance what is important for the future versus what is important right now” (Interviewee 2).

Most of the interviewees mentioned that any win-win situations between the environmental and financial aspects were greatly encouraged. This was particularly true when it came to measures for fuel efficiency. Interviewee 1 says “the fuels we are using are emitting CO2, so we need to spend the fuel as wisely as we can”. Likewise, Interviewee 4 mentions that “small changes that will affect the fuel bill directly, they are approved”. Interviewee 5 explains that they are encouraged to be innovative, and that “for us it has a lot to do with fuel

consumption. If we get down the fuel consumption, then we also get down the emissions to the air, to the sea, all of that".

The balance between the three elements looks to be quite skewed towards the social aspect, and particularly safety, closely followed by the financial aspect. This is exemplified by Interviewee 2.2 reiterating that "If you don't have a safe ship, you can't operate. Sustainability is still a volunteer act, depending on definition". Interviewee 4 also supports this idea through their observation that in "all-employee meetings, there is always a much higher focus on the finance part of the business, and that 'we need to do this to save money and to make sure that we survive'". Therefore the participant finds that "these green thoughts are falling between chairs and maybe don't receive the same attention". However, it looks as though this could be changing in the future. Expanding on the quote mentioned earlier, Interviewee 4 states that "safety and finance have stronger links than sustainability and finance as of today. But I think as soon as all these new technologies are getting reduced in price and it's getting more viable to use onboard, then of course there will be a strong link between finance and sustainable technologies. And then, of course, it would be much easier to choose those technologies".

This argumentation leads to the first finding: *Balancing occurs mainly between the financial and environmental dimensions. The safety aspect within the social dimension has primacy over the other dimensions.*

5.2 Belief system

Within the theme of the belief system, there are two findings addressing the perception, communication, and effect of the values and other written statements of Grieg Star.

5.2.1 Finding 2

The managers generally think that the vision has been communicated excellently and that every part of the organisation is highly aware of, and working towards, sustainability. Interviewee 1 explained that "we have defined the SDG's as the basis for the strategy, so it's up in front of everybody"; and that "the environment is high on the agenda. The environmental awareness on board our ships is good". Interviewee 1 elaborated further by claiming that: "I don't think if you ask anybody that they could list all our SDG's, but they

will say that, yes, environment matters in my daily work". Similarly, Interviewee 2 states that "[the values] are loudly communicated to the organization [...]. [They] are in our strategy documents, and in our overall company policies".

This perception changes among the employees. They agree that Grieg Star is focused on some of the SDGs and have a vision concerning sustainability, but they generally don't feel the presence of them in their daily work. Interviewee 4 explains that "people who don't work with it daily, they might not really have that high level focus on green solutions", and that "I don't think we still have, well, that engagement from everyone in the company". Furthermore, Interviewee 4 does not feel there has been a great change in the company: "So, it's maybe slightly more on the agenda, [...] we have a vision that we should be higher up, but I think in reality it's much the same as it was five years ago, on the practical level". This participant also uttered a concern that "I feel that the link between the vision and the agenda on the board level is not always aligned". Moreover, Interviewee 5 mentioned that they didn't feel the vision was communicated well enough: "if what we want to achieve by doing this is being communicated, then we have an understanding. Then we know, and then it's easier to follow".

The evidence from the mentioned quotes leads to Finding 2: *Managers and employees seem to be working with different perceptions about the importance of sustainability.*

5.2.2 Finding 3

The effect of having a clear vision and belief system that is unanimously understood and worked towards in the organisation becomes clear when comparing the attitudes towards social and environmental sustainability in Grieg Star.

As discussed in Finding 1, safety seems to triumph all other aspects in Grieg Star. This success seems to have its origin in the effective application of the belief system. The application has been successful through the use of effective communication, as explained by Interviewee 4.2:

> When I started in the company there was a lot of information from the managers that 'this is an important aspect'. And of course, if you're being informed about these every day for your first half a year in the company then you know that these are very important. (Interviewee 4.2)

In relation to the effective application of the belief system, the values connected to the social dimension are highlighted as particularly important for the company. Interviewee 1 points out that “we are a very value driven company, particularly when it comes to anti-corruption”.

Contrastingly, environmental sustainability is consistently given the lowest priority, which was also discussed in Finding 1. Likewise, this ‘failure’ might stem from an incomplete activation of the belief system. Interviewee 4.2 points out the difference between safety and sustainability: “It wasn't the same kind of information flow about these sustainability items when I started, and I don't think we are there today either for new employees”. The participant expands on the idea that there has been a lack of communication:

> Of course, they bring it up on these all-employee meetings, but that’s like three times a year or four times a year in the best case. And if you communicate those goals so seldom, you don't have the same kind of exposure to that information. (Interviewee 4.2)

Several participants mentioned the need to build a culture for sustainability, such as Interviewee 2.2: “I think it’s building culture. And that takes time”. Echoing the sentiment that change takes time, Interviewee 4 expressed that “As time passes by I'm sure that we will get there, but it's not an easy process. It will take some time, that's for sure”.

A further argument for this finding is that campaigns that are thoroughly and passionately communicated are successful. This is backed up by Interviewee 4: “there are some exceptions where we have made a strong point that this is something we're going to do. For example, this plastic reduction onboard our vessels”. All of the participants talked about the plastic reduction campaign in Grieg Star and gave examples of how well it had worked. Interviewee 1 was proud that “I think we are talking about a hundred thousand drinking bottles that we are not buying anymore”. Interviewee 2 focused on the goal that “we will remove all single-use plastic [...] and for all the other plastic, we've got to reduce it by 30 percent”. This participant also brought up the fact that “the vessels are not allowed to land plastic in countries where we are not sure that it's being recycled”.

These quotes lead to the next finding: *The drastic difference in the attitudes towards the pervaded social values and the distant environmental values illustrate the importance of effective communication of the belief system.*

5.3 Boundary system

The findings within the boundary system illustrate the importance of rules and policies in Grieg Star. The origin of the rules and policies are discussed, where influence from external stakeholders is found to be highly relevant. Furthermore, crucial policies with internal origins, illustrated through the payback time of investments, are discussed.

5.3.1 Finding 4

According to the interviews, it seems like rules and policies are directing and guiding. There seems to be a mutual understanding that the policies and rules need to be followed, and that they emphasise what is considered important for the organisation.

From the interviews it appears that internal policies guide employee actions to a large degree. For instance, in regards to purchasing policies Interviewee 3 explains that “in our quality management systems, we have a list to follow of which parts must be original, and which can be unoriginal”. Furthermore, “we have the approval system [...] and we also have a system to choose suppliers. So it's all in a system in [the purchasing] department, how to do business” (Interviewee 3). The same conviction is present in the higher levels of the organisation, where the rules are considered an emphasiser of the important values. Interviewee 1 answers how Grieg prioritises between sustainability and profitability: “we have a set of ethical values and we are very stringent about that. [...] We are a very value driven company, particularly when it comes to anti-corruption. [...] We have very strict rules against corruption”. Supporting these claims, Interviewee 3 explains that when the vessels are exposed to corruption “they can call the organisation, the top leader, and they are fully behind them, even though it makes them off-hire”.

The employees are aware of the guiding effect of the rules and policies. Interviewee 3 points out that “well, I think the values are more motivating and the frame is my work tool. I have to comply with the frame, but the values are more motivating and engaging as a person and in my work”. Since the frame of rules and regulations is absolute, the employees make sure to be in compliance with it, and are thus extensively guided by it. The importance of external rules and regulations is emphasised by Interviewee 4.2 who states that “I think the only way forward is to have worldwide rules that affect everyone”. This is reflected in the decisions of today, for instance in an example elaborated on by Interviewee 3:

> For example, if we are in a port in Brazil, and something major comes up and you have to choose between making this ship off-hire or buying something that is not environmentally friendly... I'm not sure, but most likely we will try to solve the problem there and then, and afterwards we will look for something more environmentally friendly. (Interviewee 3)

Interviewee 4 confirms that green solutions that are found too expensive and with unclear benefits are not chosen unless they have rules to comply with:

> If there's a green solution in the market, but it's five times more expensive and the benefit might be worse than the bad alternative; unfortunately, we have to go for the bad alternative until there are more rules in place that say you have to go for the green one. (Interviewee 4)

In the review of the quotes, Interviewee 4 clarified that the 'benefit' refers to the complete lifecycle of the energy carrier and equipment transforming the energy into propulsion (e.g. the engine). The bad alternative refers to today's situation with internal combustion engines and carbon based fuels.

The fourth finding can be summarised as: *Rules and policies are needed to direct employee actions towards sustainability.*

5.3.2 Finding 5

The employees in Grieg Star are to a large extent guided by rules and regulations, where most of these originate from the external regulations from the classification societies and flag states, or recommendations from IMO. As for the rules and regulations from classification societies and flag states, the interviewees highlighted the fact that the company could not operate without being approved by a classification society. From a manager level, Interviewee 2.2 explained that "you can't trade if you don't have a valid class certificate on your vessel. So it's actually license to operate". This understanding is confirmed by an employee, as Interviewee 4.2 states that "a classification society, insurance [company], and the flag state are the authorities that are actually giving the vessel authority to sail". Also, when new ships are built "they have to be present there to verify that the ship is built according to standards and regulations that are existing in the maritime sector" (Interviewee 4.2).

Several internal policies are in place to comply with these external rules and regulations. One example is the previously mentioned quote concerning safety regulations, where Interviewee 2.2 states that “safety is absolute, because it is a legislation, it is a requirement, and it is license to operate. If you don’t have a safe ship, you can’t operate”. Therefore, the internal rules and regulations have to reflect the external regulations. Another example is the sulphur content in the fuel that “has been reduced from 1st of January this year from the maximum 3.5% to maximum 0.5% for all ships” (Interviewee 1). In accordance with the regulation, Interviewee 4.2 explains what fuel sources are in use today:

> We use two fuel types today on our vessels. The first one is Very Low Sulphur Fuel Oil, VLSFO, and that has a maximum of 0.5% sulphur in the fuel. And then we use something called Marine Gas Oil, MGO, or Low Sulphur Marine Gas Oil, LSMGO. And that is fuel oil that has a maximum of 0.1% sulphur in it. (Interviewee 4.2)

Even though IMO has several recommendations for the maritime sector, “the challenge for IMO is that from a suggestion, a recommendation comes out, and until it becomes a legislation it often takes a long time” (Interviewee 2.2). Interviewee 2.2 explains that there are even some “which have been recommendations for more than 10 years”. This is “because the majority of the flag states must approve the recommendation before it can become a legislation” (Interviewee 2.2). Therefore, there is a difference between IMO legislations and rules that are strictly followed, and the recommendations that do not guide the employees in the same manner. Interviewee 4 explains that “if you think about NOx emissions to air, and SOx emissions, that is all governed by IMO rules. So in Grieg Star, we haven't done anything to make sure that we reduce those even further than the requirements”. When answering whether the IMO recommendations guide employees, Interviewee 5 responds: “Not so much, because they are quite round in the description. But again, that varies. It depends on whether there is something that's already been established for quite a long time”. Still, there are some exceptions for larger investments, for instance, the initiative of establishing Grieg Green to improve the scrapping of ships. Interviewee 2 points out that this “was not from any regulation, it was way ahead of that”.

Other policies are influenced by internal factors and have their origin from within the organisation. For instance, Interviewee 4 mentions that “now we have this initiative to

reduce plastic consumption onboard our vessels. That's not something that is governed through rules and regulations from the IMO". This standard was implemented at all levels in the organisation. Interviewee 2 highlights the implemented policies for the purchasing department: "We will remove all single-use plastic, that's another objective. So then, purchasing needs to make sure that from all the lists that all the vessels have, it's no longer possible to buy single-use plastic". Additionally, Interviewee 5 elaborates on the standard being implemented at the office as well: "And then also reducing [the use] in the office, trying to get our minds rebooted. This whole thing is about trying to be aware of plastic. And with printing; printing black and not necessarily in colour. It helps". The participant further elaborates on the process of standardising when a solution is effective:

> If the solution is making life easier for us or making a process easier, most definitely. Then it is being repeated and it's being standardised, because that's also important. Again, I can only speak for myself, but it is easier to follow implementation if it makes my everyday life easier. We try to standardise a lot in the fleet for how to solve different problems, challenges, or maintenance. And that has a huge impact on how to solve problems, because then you don't have to start from scratch every time. And when the crew go from vessel to vessel, they know that this is a standardised process and it's just company policy. (Interviewee 5)

This process is confirmed by Interviewee 3 who says that "we try to do it as a standard in the long-term, what we do for our vessels". But Interviewee 3 also highlights that "sometimes problems just occur and you have to solve them there and then".

All in all, this leads to the following summary of Finding 5: *The internal rules are changed primarily as a response to the external rules, regulations, and recommendations imposed by stakeholders, but also due to internal initiatives and effective solutions.*

5.3.3 Finding 6

In addition to the implemented external rules, there are regulations with internal origins, for instance when electing initiatives to implement. There seems to be a prevalence in Grieg Star that when it comes to larger investments, those that are win-win in terms of sustainability and financial gain take precedence over those that are win-lose in the short-term. Interviewee 4 explains it like this:

> It's easy to say nice words, but when it gets to actually having to implement something, and you see that there's a big cost behind it with no directly economical benefits from taking that path; it's much more difficult for the owners to say ‘go ahead’. (Interviewee 4)

The participant adds that “we have this intention that we should be a green business and we should run as green as possible. But it's always a balance between what is the cost and what are the benefits”. According to Interviewee 4, the payback period for an investment is “as little as one year right now. It used to be two years, but then they changed it to one year”.

Furthermore, there is more room for investing in sustainability when times are good than when they are more challenging. For instance, when the subsidiary Grieg Green was established the payback time was 5 years and not as strict as today. This was due to the fact that the necessary financial resources were available, which allowed for a policy of longer and more flexible payback time. Interviewee 2 elaborates on the difference in the process back then and today:

> I think normally for startups, it's two to five years, which is the time you need. After year five you start wondering, ‘was this smart or not’. [...] But this was during a period when the results were good, so there was room for investment. And the belief was strong, the commitment was strong. It has developed now, because we are much more efficient with ‘sprints’ and are considering things more quickly. Earlier on it was more like ‘we’ll test and see’. We didn't do all the evaluations that we could have done. Now, we have a thousand ideas and maybe two will make it. (Interviewee 2)

Interviewee 3 mentions that “we have had many tough years behind us. So if we have a project that could be postponed, if there's not enough money or income, it has to be seen in the bigger picture”. One participant describes how they at times attempt to divide the investment over several years to be able to see it through: “if our finances are not good enough, and we can't make this big investment right now, then we do it step by step. How much can we afford to do now and how much can we afford to do next year?” (Interviewee 2).

On that same note, it is much easier to invest in smaller projects than the larger ones. Interviewee 2 explains that:

> If a project costs $10,000 or more, then you need to bring it upwards. You need to present a good case, you need to argue, and you need to have a risk assessment carried out. As long as there is room within the budget, then we are allowed to give it a try and test it out. [...] So it really boils down to money, that there must be money. And there must be a level between the sustainability results and the return on investment. (Interviewee 2)

Interviewee 4 adds that "of course, it's also a balance between how big the investment is and how quickly you get a payback".

The policy regarding payback time is discussed by several respondents. Most participants seem to be of the opinion that financial institutions are willing to invest in the green shift and accept a longer payback time. According to Interviewee 1, financial institutions "ask us for emission factors from the ships. That's a quite recent development". Likewise, Interviewee 4.2 thinks that "a lot of financial institutions nowadays are more aware of this green shift, and they want to invest their money into greener technologies and greener vessels". Finally this argument is supported with a quote from Interviewee 4:

> If there are some finance banks or some investors that are willing to invest in green technology, I'm sure if you could then show them that we have a good case with a payback time of five years, they would probably be interested. And that would also be good for their portfolio. (Interviewee 4)

Furthermore, Interviewee 4.2 mentions that "maybe we need to have another look at the payback time on green investments rather than just having the same kind of flat rate on all various investments". Nevertheless, none of the participants mentioned anything about actually having taken any actions to test this theory.

Based on the arguments presented in the quotes, Finding 6 is that: *Predetermined payback time, dependent on the financial position, is a prerequisite for new initiatives to be implemented.*

5.4 Diagnostic system

The findings within the diagnostic system highlight the effect of quantifiable KPIs on employee behavior, and the prioritisation of KPIs in Grieg Star.

5.4.1 Finding 7

The effect of KPIs and budgets on management control is illustrated through the responses of the participants. It is apparent that the areas that receive the most attention from employees are the ones that can be quantified and easily measured. In the words of Interviewee 2: “what is being measured is being done”.

This distinction is brought up by several interviewees. Areas that are focused on include the plastic campaign: “[Plastic] has been a focus for a long time and it's still very high in focus in the purchase department” (Interviewee 3). Elaborating on this, Interviewee 2.2 explains that:

> In some areas of sustainability, you often won't see a return on a financial investment, the fact that we reduce single-plastic use doesn't show on our financial bottom line, but it does on our total bottom line. So it's a different approach, but still vital for the combined bottom line. (Interviewee 2.2)

Expanding on this, the other area within sustainability that does receive attention is the reduction of the carbon footprint as this is relatively easy to measure: “I would say all the KPIs under the environment section is probably more linked to what we could do to reduce our carbon footprint” (Interviewee 4.2). It also includes safety, with examples such as “we have objectives such as ‘no fatalities’ and ‘no injuries’” (Interviewee 2.2), and “for us as an organisation, it's very important to have no damages [...] for the crew on board” (Interviewee 3).

Still, there are some exceptions. Elements that are difficult to measure, such as the financial benefit from diversity, could indirectly affect the bottom line: “having the whole intelligence and not just the male intelligence working for your company will show on your bottom line. But it's more difficult to measure” (Interviewee 2.2). As the diversity is found to represent an indirect effect, one could argue that this explains the received attention despite the difficulty of measurement.

A stricter form of guidance, but with some autonomy intact, such as the one given by KPIs and budgets also seems to be preferred by some of the employees. Interviewee 5 says that “I prefer when it's quite strict. When I have rules and guidance and KPIs [...], when there are guidelines and they are quite clear, because then there's not so much room for

interpretation". The participant explains that the autonomy is not sacrificed: "I have a budget for the vessels, but how I use it is up to me and [...] the management on board [...]. So this is where I feel like I have a lot of freedom to do an evaluation and see what the need is". The last sentiment is echoed by Interviewee 4: "I have my budget for the vessels that I'm managing, so as long as I stay within my budget I have some room for my own decisions".

According to the argumentation, Finding 7 can be summarised as: *The quantifiable initiatives that can be measured through KPIs and budgets are the ones that guide attention in Grieg Star.*

5.4.2 Finding 8

Similar to how there is an inconsistent understanding of the importance of sustainability in the belief system (cf. Finding 2), there is also inconsistency in the understanding of the importance of the different groups of KPIs. According to the participants there are three groups of KPIs: "the first one is people, [...] the second part is the environment, [...] and the last part is money" (Interviewee 2.2). Interviewee 2 explains that "you will find environmental governance and everything else in the same document. It's not 'that document' and 'that document', they are together. And that is a major change, it's not just a financial bottom line anymore". In other words, it seems like the intention of the managers is for these three groups of KPIs to be equally important in the business.

The managers claim that the most important group of KPIs is "humans", closely followed by "OPEX" also known as Operating Expenses, and "environment": "The most important KPIs are related to personnel safety on board. Then, we have the OPEX, the operating expenses [...]. But I would say that the safety related KPIs are the most important" (Interviewee 1). Interviewee 2 says that the three groups of KPIs are equally important, but "safety is the foundation".

Contrarily, the employees claim the order of importance is "OPEX", "humans", and then "environment". According to Interviewee 4.2:

> If you look at how much attention they receive in meetings, which of these KPIs that are most important, and also how many KPIs we have in each section [...], the operational expenses, the OPEX, is probably the most important. After that is the

> safety of the seafarers and our personnel, and then the environment is probably last. (Interviewee 4.2)

The participant elaborates by clarifying that "of course, we talk about the [...] sustainability of items, but I would say that it's always a much higher focus on the safety and the financial rather than the green solutions" (Interviewee 4.2). Interviewee 3 finds that "the budget is an important measurement for how we perform", and that even though there is a large focus on sustainability "we only want to go back to black in numbers, that has been the goal for many years". According to Interviewee 5 "The KPIs are not being ranked, [...] it's all equally important. But then we have campaigns where we focus on certain things, like reducing plastic". On the other hand, the same participant also describes how they go through the KPIs each month:

> We have some KPIs for the environment that we try to keep track of, but then we are back to fuel performance again. Because that says something about the condition of the equipment on board. And then we are back to maintenance, and trying to make sure that we are in line with the maintenance that's scheduled. (Interviewee 5)

This explanation suggests that even though the intention is to give the same amount of attention to each group, the environmental KPIs are quickly overshadowed by the financial KPIs.

Nevertheless, both groups seem to agree that the initiatives that have an impact on the financial bottom line are more likely to receive attention and be followed through. An example of this is given by Interviewee 4: "we have other systems; polluting chemicals, paint, or whatever we have on board, that do not directly contribute to the bottom line. Those kinds of changes are a bit more difficult to have implemented".

All in all, these quotes indicate that Finding 8 is: *The prioritisation between the three groups of KPIs differs between managers and employees in Grieg Star.*

5.5 Interactive system

The theme interactive systems include findings regarding interactivity in the everyday work life, and the process of opportunity seeking in Grieg Star. It is found that discussions are

crucial to reach decisions, and that the invested time in opportunity seeking and initiative implementation have led to several successful changes.

5.5.1 Finding 9

The interactivity in Grieg is considered an important tool to seek out new opportunities. It is expected to continuously try to improve business, and everyone is responsible for achieving the objectives. This is confirmed as Interviewee 2 claims that “it's expected that you do. And that you've tried to figure out the smarter way, more sustainable way, and more cost efficient way”. Furthermore, Interviewee 2 states that “we all need to be jointly responsible for achieving all the objectives that we have”.

The forums for interaction, discussion and suggestions were highlighted in most interviews. For instance Interviewee 2 highlights the interaction in department meetings, where “each department has their meetings, where challenges are discussed and good ideas are allowed. So the ideas tend to pop up during those meetings”. Interviewee 5 also highlights that “we usually have a meeting once a week with the technical department and our managers, and then we sit and discuss our options”. Furthermore, Interviewee 5 highlights other meetings: “sometimes if there is a situation that is only [relevant for] one type of class of vessels, then the vessel managers for those vessels gather and discuss together with the managers”. Interviewee 3 emphasises the relevance of daily dialogue:

> It's possible to ask critical questions about things. Both within my department, and also further on to the technical department. If there is something we would like to highlight that we don't think is good enough, that is done like a dialogue. You go to the office and you ask. It's not a problem to ask these kinds of questions, whatever you need to have an answer on, and whenever you need it. (Interviewee 3)

Even though there are accessible opportunities to discuss issues and ideas, Interviewee 4.2 argues that “I don't think we still have, well, that engagement from everyone in the company”.

Interviewee 4 states that whenever an employee has a suggestion “you can just send an email with some ideas for what can be done”. Thereafter, “a small group decides what items to focus on and what items we could look further into”. This procedure has changed since the establishment of the subsidiary Grieg Green. Interviewee 4 explains that Grieg Green “was

started in a time when the shipping business was still earning lots of money. And there was more interest from the owners to look elsewhere for new opportunities than today". Hence, it seems like the financial position of Grieg Star has had a large impact on the procedure for idea generation. The solution used today is perceived differently by the interviewees. On one hand, Interviewee 4 points out that the suggestions seem to be quickly rejected these days:

> I think sometimes we too quickly discard something just because we don't see the point, without actually doing any deeper research. So maybe for some ideas or some technologies that we see an interest or a possibility in, I think we should invest slightly more time and resources to actually show that they are a good alternative. And maybe it will not be as expensive as initially thought. Maybe we need to have another look at the payback time on green investments rather than just having the same kind of flat rate on all various investments (Interviewee 4)

On the other hand, Interviewee 2 finds this new procedure to be an improvement:

> It has developed now, because we are much more efficient with 'sprints' and are considering things more quickly. Earlier on it was more like 'we'll test and see'. We didn't do all the evaluations that we could have done. Now, we have a thousand ideas and maybe two will make it. So the tools are also better. (Interviewee 2)

The argumentation leads to the following summary of Finding 9: *Discussions and opportunity seeking are integrated in the everyday life at Grieg Star, but there are different perceptions of the effectiveness of the process.*

5.5.2 Finding 10

In the daily life in Grieg Star, discussions are frequently used to make decisions, and employees consult with their managers when they are to decide. Furthermore, workshops were used by the managers when choosing the SDGs for each company within the Grieg Group.

Interviewee 5 demonstrates the use of discussions when in challenging situations:

> If there's a situation that only concerns one of my vessels, then I will try to remember whether I have heard anyone talk about this before. [...] If it's something that influences the entire fleet regardless of age and what type of vessel it is, then it's

> something that we discuss. We usually have a meeting once a week with the technical department and our managers, and then we sit and discuss our options. [...] Sometimes if there is a situation that is only [relevant for] one type of class of vessels, then the vessel managers for those vessels gather and discuss together with the managers. (interviewee 5)

Interviewee 3 also confirms the importance of discussions when it comes to sustainability issues, with the answer "it shouldn't be a problem to do that". Also when decisions need to be made quickly, there is always room for questioning the managers. Interviewee 3 explains that "if I have any questions, then I ask and have a dialogue with my boss. 'What do you think here? Should we do this?' We find the solution together".

Several interviewees mention the interactive work of implementing the SDGs in the organisation. This was a situation where the managers included the employees in discussions to find the best solution:

> We had a seminar where we discussed this. We had a dialogue around it, going back and forth between the management and employees. And I can't exactly remember how, but together we came up with what was most important for us and our organisation. (Interviewee 3)

Likewise, Interviewee 4 highlights the inclusiveness of the process:

> I think that was very well done. It was really inclusive. We had this workshop where everyone had to take part and come with ideas and thoughts. And there was a small group from Grieg Star that then took these goals further and collaborated with the other companies within the Grieg Group to see how we could do the best out of it, with joint forces. (Interviewee 4)

Hence, Finding 10 is that: *Interactive dialogue is a frequently used tool in decision-making.*

5.5.3 Finding 11

According to the interviewees, there is a high focus on the new technology in the market. Several interviewees argue for the importance of following changes in the demand from the market and customers. Interviewee 1 states that: "the next 10 years is really make or break for a lot of companies. [...] We will need the good ideas". Interviewee 4 follows up by saying

that: “of course, we’re looking to all these new technologies to see what the future will bring”. Interviewee 4 argues that the green shift is crucial as “we see that the market is changing in the future, so all our customers will demand us to be more green. And then we can’t burn the dirtiest fuel available on the market anymore”. Interviewee 4.2 illustrates how the changes in the market can lead to challenges if Grieg Star does not follow, claiming that “if everyone will start to build new green vessels in 10 years’ time to replace the existing fleet, and no one wants to use the old fleet, then you sit with an asset that really can’t be traded”. Similarly, Interviewee 1 argues that “we need to be involved in the green shift. We need to increase our knowledge about how to carbon proof our business [...] There are new emerging technologies, and new ways of thinking”.

The interviewees draw attention to several potential opportunities regarding new energy sources. Interviewee 1 highlights the improvements up until today regarding technology and regulation: “the technology on board for machinery and automation systems have improved over time”. Still, Interviewee 5 states that:

> There is so much new technology that's being developed as we speak. We have batteries, which have existed for quite a while. And then you have hydrogen, whether or not this is something you should use. Should you use ammonia? What about LNG? So there are different types. (Interviewee 5)

When it comes to batteries, Interviewee 4 comments that:

> Based on these installations that we have on board one vessel, there is quite a big difference between the theory and the physical way of how this works on board. So we don't really see the big benefit in the batteries as it has been presented in many papers. (Interviewee 4)

In the review of the quotes, the interviewee points out that this is in relation to a specific case of implementation. Still, the use of battery technology is not deemed appropriate for the market where Grieg Star operates. According to Interviewee 3, “they have electric vessels, but those are in a different trade. For vessels going worldwide, that is not an option yet”. As Interviewee 5 explains, “we are at sea anywhere from one week to a month, or a month and a half. So then you don't have the possibility to stop and recharge, because you're in the middle of the sea”. Therefore, “the technology, it's not mature for our type of ships” (Interviewee 1). Other alternatives are also discussed, but Interviewee 4 concludes that “today there are more

or less no alternatives to diesel oil or heavy fuel oil in regards to deep sea shipping". As an extension, the need for a technological shift is highlighted by Interviewee 1: "I wouldn't say there's been a big technology shift, but it needs to come, we have to start now. How can we remove the carbon from the fuel?".

As it is much more expensive to retrofit existing ships, Interviewee 4 points out the focus of scouting for opportunities for new ships:

> If you want to retrofit a green solution into a traditional vessel at a later stage, that would be much more expensive. So at least we need to focus on having as green vessels as possible. So to build vessels with a traditional two-stroke engine just running on heavy fuel oil, that would be no option for sure. [...] I think the best solution is to build a new vessel as best as possible. So we have the opportunity to change the fuel that will be used on board. Of course, if you have too much flexibility, that would be very expensive. But you need to find a balance between how much flexibility you want to invest in and then what kind of technology you think will be viable in the future. So, you shouldn't invest to include hydrogen, ammonia, heavy fuel oil, and LNG. If you take all of those four, that would be too expensive. But if you just focus on two of them, it could be possible. (Interviewee 4)

To summarise, Finding 11 is: *Grieg Star is actively investing time in opportunity seeking, primarily towards environmentally friendly technologies as the technology of today is not applicable to deep sea shipping.*

5.5.4 Finding 12

As an extension of the opportunity seeking in Grieg Star, both Interviewee 1 and 4 highlight the improved focus on technology through Grieg Edge. Interviewee 1 starts with: "so the major change this year for us as a company is that we have established new companies that are going to do only work towards the green shift", and according to Interviewee 4, "we have tried to reorganise our organisation to have more people available to focus on these new technologies and to go forward". The reorganisation includes the establishment of the company Grieg Edge which is beneficial as it does not have to carry the legacy of the whole Grieg Star:

> We have to say that we have quite a big legacy as a shipping company that's been existing for more than 100 years. And all our vessels are quite old and will remain in business for many, many years. So in some sense, you can't just scrap those today and then start from scratch. So, of course, that is a very difficult change to make because it's very expensive to do modifications. And in the market when your vessel is not paying off as they are today, there is very little incentive to actually step forward and put even more money into an asset that is already not earning money. But if you look into new business opportunities, it might be easier to look into these green technologies in e.g. Grieg Edge. You're starting with blank sheets and you have a lot of opportunities to go whatever direction you want. You don't have that legacy to include in your thoughts. (Interviewee 4)

As clarified by Interviewee 4 in the review of the quotes, Grieg Edge is a separate company within Grieg Star Group, with the sole purpose of looking into new businesses and technologies. Interviewee 2 includes the perspective of risk avoidance with the following statement:

> Based on where we are, we need to find some projects that we really believe in and that we've seen will do the extra. We must be willing to take some risks, but at the same time not risk the whole company. And that is also why we separated Grieg Edge. (Interviewee 2)

Moreover, the subsidiary Grieg Green has been a successful initiative primarily focused on the green shift. As Interviewee 2 explains, this subsidiary was a result of internal engagement from one superintendent and an interactive process with the managers:

> I had one superintendent, [...] who came to me and said 'I would really like to take a Master Degree. [...] When he had done his Master Degree he came back with an idea and the company agreed. The company was willing to invest in the idea, and then it started very slowly, based on his idea. (Interviewee 2)

Beyond these examples of green subsidiaries, there is one initiative that is mentioned by all participants, namely the plastic reduction: "we decided to stop all the plastic bottles; that was an initiative from one of the purchasers" (Interviewee 2). As the plastic reduction is mentioned by everyone, it seems to be a successful and effective implementation that the participants take pride in. Interviewee 2 further elaborates on the initiative:

> We will remove all single-use plastic, that's another objective. So then, purchasing needs to make sure that from all the lists that all the vessels have, it's no longer possible to buy single-use plastic. And for all the other plastic, we've got to reduce it by 30 percent, [...] so we buy bottles that you can wash. It's made from [sugarcane], and everybody on board gets two. (Interviewee 2)

In addition, Interviewee 2 highlights an example where an employee identified a need for change, and the change was implemented through an interactive process:

> One of the purchasers said that: 'all the seafarers are complaining again that they have a lot of scratches and itches because of the laundry powder'. [...] She started digging, and it turned out that the seafarers overused the amount of laundry powder. [...] Then we installed an automated feeder with laundry soap. It sits on the wall, so when you press 'start' the machine takes whatever soap it needs. (Interviewee 2)

When it comes to the safety aspect, it does not seem like there are any active interactive processes in place. Even though safety has a high priority in Grieg Star, as evidenced by Interviewee 2.2: "it's good, but it's never good enough. It can always get better", these processes seem to be missing.

In relation to the initiatives, Interviewee 2 concludes with the following statement: "It's about turning all the stones, and people are good at it". The quotes prove that several initiatives have been successful, therefore Finding 12 can be summarised as: *Interactive processes have led to successful initiatives, primarily towards environmental sustainability.*

5.6 Partnerships

Regarding external influences, the relationships between Grieg Star and their partners are discussed.

5.6.1 Finding 13

To reach the goals of 2050, the partnerships are highlighted as a key factor. Therefore, Grieg Star chooses suppliers and partners that have similar goals and visions. This is seen as the most efficient way to become more sustainable.

Interviewee 2 explains the important role played by partners when working to reach the SDGs. The participant also highlights the goal of partnering for the future being part of the SDG foundation goals of the Grieg Group:

> One of the foundation goals is SDG number 17 - partnering for the future. We are loud and clear that we can't do this on our own, we can't save the world by ourselves. So we will actively look for partners everywhere who will be there, either to get financing, or to be an active partner in the goals that we would like to achieve. (Interviewee 2)

Both Interviewee 2 and 3 point out that partnerships are particularly imperative for sustainable development. Interviewee 2 explains that:

> We are working on a big project named ZEEDS together with many professional and large companies, 'the Zero Emission Energy Distribution at Sea'. This collaboration is very important and shows that when we work jointly with partners we can achieve much faster, nobody can do it on their own and we all have something to bring to the table. (Interviewee 2)

Also, Interviewee 3 highlights the importance of partnerships, with the example of the membership in Incentra.

> We are also a member of Incentra. [...] There are approximately 40 members and approximately the same number of suppliers connected in this organisation. This is an organisation that makes deals on behalf of their members. They do the audit, the annual check and then also look into history, so it's a quality system for us as well. So that's very important. [...]They also had a very high focus [on sustainability]. And they are an organisation that can take this out to a lot of suppliers and make them commit. So they have a huge impact on suppliers. (Interviewee 3)

In addition to agreeing on the importance of partnerships, the participants agree that finding like-minded partners in regards to sustainability is imperative. Interviewee 3 claims that "the focus on sustainability is very high, for instance with regards to going into agreement with suppliers". With partnerships being of such importance to Grieg Star, Interviewee 2 elaborates on the aim to find long-term partners who share the same values:

> If you have challenges, you need to look for partners. You will want to look at partners who are equal to you, you don't want to take on somebody who is completely different when it comes to SDGs and other objectives. That boils back to who we are and why we are the way we are [..] so the right partners are crucial. Having partners that are coming from the same position as you are, with the same objective of being long-term and not being in it for the big money, but believing that things aren't done overnight. [...] I think finding the right partners is how to do it, but it's much easier said than done. (Interviewee 2)

Nevertheless, having engaged partners is not enough when it comes to SDG 17. Grieg Star aims to take the sustainability initiative further as they "are always pushing the demands for what [our partners] can do better in agreements" (Interviewee 3). Interviewee 3 further highlights the opportunity to demand improvements in sustainability as a benefit of long-term partnerships: "because we have had a long partnership, it's easier to ask or give demands because they are eager to stay on". Even though Interviewee 3 followed up by saying that "they have been very active themselves for this change in their company" and "mainly they have made this decision. They want to be a sustainable company". Interviewee 5 elaborates on one example where Grieg Star finds an opportunity to influence a long-term partner:

> If we get crew gear and there's plastic around them, we consider whether there is anything that we can do from our shore side. Can we then go to our vendors and say 'please reduce the amount of plastic that you have around the equipment that you supply', so we stop it before it gets to the vessel? So one thing that we can do is just to stop it before, so that we don't have to do everything on board the vessel. We try to think, 'what can we do before'. So, we try to minimise the predetermined disposals. (Interviewee 5)

Finding 13 can be summarised as: *Like-minded partners are crucial to reach the SDGs.*

5.7 Summary of Findings

The following table summarises the findings highlighted in this chapter.

Themes	Findings
Balance	1. Balancing occurs mainly between the financial and environmental dimensions. The safety aspect within the social dimension has primacy over the other dimensions.
Belief system	2. Managers and employees seem to be working with different perceptions about the importance of sustainability. 3. The drastic difference in the attitudes towards the pervaded social values and the distant environmental values illustrate the importance of effective communication of the belief system.
Boundary system	4. Rules and policies are needed to direct employee actions towards sustainability 5. The internal rules are changed primarily as a response to the external rules, regulations, and recommendations imposed by stakeholders, but also due to internal initiatives and effective solutions. 6. Predetermined payback time, dependent on the financial position, is a prerequisite for new initiatives to be implemented
Diagnostic system	7. The quantifiable initiatives that can be measured through KPIs and budgets are the ones that guide attention in Grieg Star. 8. The prioritisation between the three groups of KPIs differs between managers and employees in Grieg Star.
Interactive system	9. Discussions and opportunity seeking are integrated in the everyday life at Grieg Star, but there are different perceptions of the effectiveness of the process. 10. Interactive dialogue is a frequently used tool in decision-making. 11. Grieg Star is actively investing time in opportunity seeking, primarily towards environmentally friendly technologies as the technology of today is not applicable to deep sea shipping. 12. Interactive processes have led to successful initiatives, primarily towards environmental sustainability
External influences	13. Like-minded partners are crucial to reach the SDGs

Table 4: Summary of empirical findings

6. Discussion

In Chapter 6, we will discuss the findings from Chapter 5 in light of the theoretical foundation that was established in Chapter 2, where we aim to answer our primary research question. Similarly to Chapter 5, the discussion in section 6.1 to 6.6 will be structured based on the six main themes we uncovered in our thematic analysis. Within these themes we will discuss the impact they have on our sub-questions. These are: (i) *how is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability*, (ii) *how does the integration of MCS and SCS in a company impact their conflict management,* and (iii) *how are the MCS and SCS influenced by the conflict management of sustainability and profitability*. In section 6.7 we discuss the links between the themes, and present a conceptual framework based on the main findings from the discussion of each theme.

For the purposes of the discussion, we found it helpful to divide the SCS introduced by Gond et al. (2012) into two aspects, namely Environmental Control Systems (ECS) and Social Control Systems (SoCS) since these are treated differently in Grieg Star. Furthermore, we consider the belief and boundary levers to be explicit parts of Gond et al.'s (2012) framework instead of implicitly integrated like we discussed in Chapter 2. Hence, the integration between the belief and boundary systems is relevant, in addition to the integration between the diagnostic and interactive systems.

6.1 Balancing the Dimensions

When defining the Sustainable Development Goals, the idea of the three dimensions of environmental-, social-, and economic development balancing each other was key. As such, any study looking into sustainability should consider all three dimensions and how they interact with each other. According to Finding 1 the balancing in Grieg Star is mainly occurring between the financial dimension and the environmental dimension, and certain aspects of the social dimension. The safety aspect, however, is considered to be absolute in the sense that it will always have the highest priority. Hence, the main conflict in Grieg Star is balancing the financial dimension, i.e. the need to make money, with the environmental dimension and the remaining aspects of the social dimension. The struggle of balancing the dimensions, especially the traditional focus on financial return and the new influence of

sustainability, is highlighted by several researchers. The long-term nature of the benefits from sustainability further complicates this issue, with researchers like Epstein et al. (2015) finding it hard to see how the social and environmental dimensions will take precedence over the financial dimension whenever there is a conflict of interest.

6.2 Belief system

The first finding within the belief system is that managers and employees in Grieg Star have different understandings of how important sustainability is in the organisation. The second finding is that the attitudes towards safety and sustainability in the organisation are vastly different, seemingly owing to the inconsistent application and communication of the belief system.

6.2.1 How is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?

According to the Levers of Control framework, the belief system guides behaviour through inspiration and motivation embodied by for instance values, purpose- and mission statements. As an extension of the framework, Simons (2010) suggests that the belief system can function as a tool to prioritise interests in a conflict.

The dimension in which the belief system has been activated to the highest degree is the social dimension, and more precisely the safety aspect, governed by the SoCS. All the participants agreed that this was the most important aspect, according to Finding 1 and 3, and that operations could not continue if the safety of the seafarers was not secured. Safety has been the main focus of DNV GL, the classification society of which Grieg Star is a constituent, since the early 1900s (Det Norske Veritas, n.d.). According to Trauthwein (2014), this focus was maintained as late as in 2014. The values and statements concerning safety are likely to have developed gradually during the past decades, in line with the attention safety received by the classification societies. This indicates that the safety aspect has successfully pervaded the organisational culture as described in Finding 3. In addition, gender equality, another factor that falls within the SoCS, is found to be controlled by the belief system. Even though it is stated in Finding 7 that gender equality does not improve the bottom line directly, Grieg Star has taken big steps towards increasing the number of females

in all levels of their business since the implementation of the SDGs. Examples of this success include the high ranking in the SHE index (Grieg Star, 2019b) and the first female senior manager on one of the ships (Grieg Star, 2020a). As there is neither a direct effect on the bottom line, nor rules to follow as far as we are concerned, this can indicate that the belief system, through the SDG number 5 Gender Equality, has been the activating factor of this process.

On the contrary, environmental sustainability is the dimension in which the belief system is arguably applied in the weakest manner. The interviewees all talked about how sustainability was important in the organisation, and something that was being worked on, but when it actually came to prioritising sustainability in the same manner as safety, the belief system failed. As discussed in Finding 3, there is a vast difference in communication when it comes to the importance of safety versus sustainability during the first six months of an employee in Grieg Star. This is a good illustration of the difference in strength between the SoCS and ECS. The financial needs trump the sustainability needs because the initiatives are voluntary, meaning that the boundary system outperforms the belief system when it comes to sustainability. Still, an example of successful environmental initiatives influenced by the belief system is the initiative to reduce single-use plastic. The origin of this campaign is not revealed, but it can be related to SDG 14 *Life below water*, and the purpose of the Grieg Group: *We shall restore the oceans*. Therefore, the belief system might have influenced the reduction of single-use plastic. But the interviewees highlight in Finding 3 that this was communicated loudly in the organisation in relation to a campaign. Therefore, one can say that the belief system fails as long as the importance is not loudly communicated. Even though the IMO conventions regarding both safety and environment were internationally approved in the 1970s (IMO, n.d.b), Psaraftis (2019) highlights that the only influential regulation before 2015 was the Energy Efficiency Design Index from the IMO. Therefore, the necessary attention from the classification societies seems to be missing. In accordance with their strategic adaptation to the challenges of climate change in 2005, DNV GL seems to have increased their focus on sustainability in comparison with safety (DNV GL, n.d.). Hence, sustainability might be on the same path as safety was, meaning that it is part of a natural process of integration in the belief system. Still, this is expected to take a long time, as discussed in Finding 3.

For the financial aspect, governed by the MCS, the participants all seemed to share the attitude that the financial foundation of the company must be solid. This corresponds with

the value *solid*, which illustrates the strong belief system of the MCS. There seems to be an understanding across the company that they need to be in a good place financially before they can make the 'big impact' investments. However, none of the interviewees referred to the value *solid* when discussing the importance of a solid financial foundation. Therefore, this is most likely not the doing of the belief system, but rather the need to make money as a business and the recent experience of going through tough years.

6.2.2 How does the integration of MCS and SCS in a company impact their conflict management?

There seems to be a clear separation between the SDGs and the four core values open, solid, proud, and committed. The SDGs are in a separated formal system, and employed as the organisation's foundation and stretch goals (Grieg Star, 2019a). Since the SDGs govern both social and environmental sustainability (SoCS and ECS), these two belief systems can be considered technically and organisationally integrated. Examples from Finding 2 and Finding 13 show that the SDGs are referred to as one unit by all the interviewees. Still, as the quotes illustrated in Finding 3, the understanding of the importance of safety in comparison with environmental sustainability differs. This illustrates a lack of cognitive integration of SoCS and ECS.

As SoCS and ECS is governed by the SDGs and the four values govern the traditional MCS; one could argue that the belief system is not integrated on the technical level between the SCS (SoCS and ECS) and the MCS. In contrast to the use of the SDGs as foundational and stretch goals, the core values are intended to reflect the employees and the culture of the whole Grieg Group (Grieg Group, n.d.b.). This indicates that the dimensions are not organisationally integrated either. However, the four values do include statements such as "We accept responsibility for society and the environment", "We aim at transparency in our organisation on organisational and ethical issues", "We contribute to the welfare of our society, nationally and internationally", and "We show concern, and take care of each other and our environment" (Grieg Group, n.d.b). These statements reflect the main idea of the SDGs, and one could therefore argue that the two belief systems are integrated to a certain extent on the technical and organisational forms of integration through the four core values. Nevertheless, it seems like the SoCS and ECS are mainly governed through the SDGs. Hence, it can be concluded that the technical and organisational integration is not absent, but can be considered weak. In addition, the participants almost always distinguished the

different sets of values when discussing them, talking about “our values” and then the SDGs as a separate entity that has been introduced in the organisation. Accordingly, the cognitive form of integration does not seem to be present for all three systems.

The SoCS and ECS seem to have technical and organisational, but not cognitive integration. As the technical and organisational integration between the SCS and MCS is found weak, the lack of cognitive integration is not outweighed by them. Hence, the belief system is not integrated between the MCS and the SCS, while the integration of SoCS and ECS is only organisational and technical.

6.2.3 How are the MCS and SCS influenced by the conflict management of sustainability and profitability?

Grieg Star is continuously working on their belief system, with the latest project being a development from the SDGs to an ESG system, and the formulation of a new strategy based on the SDGs (2020a). It seems apparent that the ambition of the company is to ensure that safety and sustainability will be of equal importance in the near future. Hence, they are actively working towards ensuring that there will be no ambiguity in their response whenever a conflict between sustainability and profitability does appear. The move from a strategy based on the SDGs towards an ESG system seems to stem from outside influences, as the CEO of Grieg Star states that:

> Like so many other companies, we struggle with the right way to report on our progress when it comes to sustainability. The Norwegian Shipowners Association published their guidelines regarding ESG-reporting earlier this year. We salute this initiative, as it makes it easier for small companies to navigate the jungle of possible reporting initiatives. (Grieg Star, 2020a).

The year 2019 marked the first year that Grieg Star included ESG reporting in their annual report, leading to the belief that the move towards an ESG system is based on outside influences rather than on a potential impact of conflict management on the belief system. There has not been uncovered any evidence that the change in the belief system is influenced by the internal conflict management of sustainability and profitability.

6.2.4 Main finding

Values are only guiding when they pervade the organisation. The SoCS and ECS are technically and organisationally integrated in the belief system, but they are not integrated with the MCS. The changes in the belief system seem to be implemented as a result of outside influences, and they do not appear to be influenced by the conflict management.

6.3 Boundary system

The first finding within the theme of the boundary system is that rules and policies are important in the guidance of employee actions. Most of the internal rules seem to originate from external rules, regulations and recommendations. Nevertheless, there are still some that are decided within the organisation, for instance financial policies.

6.3.1 How is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?

According to the LoC-framework the boundary system guides employees to avoid risk through communicated minimum standards and acceptable activities (Simons, 1995a; Laguir et al. 2018; Widener, 2007). Based on Finding 4, it seems like the boundary lever is heavily weighted, as there is a focus on compliance with rules and regulations, employees follow policies strictly, and the employees state that they are guided by the frame of the business.

The external actors like IMO and the classification society set the rules and regulations for the social and the environmental dimensions that Grieg Star needs to follow to be allowed to sail, as found in Finding 5. It is obvious that compliance is important for the company, since there have been no incidents of fines or sanctions due to noncompliance with laws and/or regulations since 2014 (Grieg Star, n.d.c). In terms of control systems for the social dimension, Finding 4 illustrates a mutual understanding of the importance of the ethical guidelines that are not to be broken even if it will lead to off-hire, through examples such as corruption. The internal policies of Grieg seem to be in line with the demands for certifications from DNV GL (n.d.b). This anti-corruption standard illustrates how rules for social aspects seem to be absolute. Another aspect within the social dimension is safety, where the interviewees explicitly claim that the rules are absolute in Finding 5. These

examples indicate that the SoCS has a strong boundary system, which might lead to a prioritisation of the social aspects.

When it comes to the ECS, it is stated that rules might be the only way to prioritise the green alternative over financial considerations. This illustrates the strong effect of the boundary lever in Grieg, but also the lack of strict rules when it comes to the environment. The existing rules and regulations have led to a reduction of emissions, but these are not nearly large enough to reach the goal of zero emissions in 2050. To some extent, this could be a communication issue, as a manager states that pollution is to be avoided at all costs, but the rules are not clearly reflecting that statement. All in all, it seems like the boundary system of the ECS is strong, but the formulation of the policies need to be developed for the environmental dimension to be prioritised.

As shown in Finding 5, the internal rules mainly originated from external rules and regulations. However, the demand for the financial return comes from within, as a policy formed by the owners and managers. According to the annual report of Grieg Star from 2014 (Grieg Star, 2015), strategies and policies lay the foundation of financial risk management, among other aspects. This indicates that policies of the financial dimension are managed internally in the organisation. An example of financial boundaries is the required one year payback time for new investments to be implemented, as revealed in Finding 6. This short payback time could be problematic when considering that the assets Grieg Star are investing in now are going to be in operation for another 10-30 years. This could also be a challenge when implementing sustainability initiatives, where Aragon-Correa et al. (2017) and Epstein et al. (2015) highlight the lack of short-term financial returns, and the challenge of communicating the financial benefits of sustainability. Another aspect of the internal policies is the ability to invest, which fluctuates in accordance with the financial position of Grieg Star. This corresponds with the claim of Aragon-Correa et al. (2017) that this is another consideration that needs to be solved before evaluating the return on investments. Furthermore, this indicates the strength of the boundary system, as the policy of predetermined payback time needs to be met before considering the return on investments. Hence, when it comes to payback time and the ability to invest, the internal boundary system of Grieg Star supports the prioritisation of profitability over sustainability, in line with the prediction of Epstein et al. (2015).

The rules of MCS and SCS are stricter than the ones for ECS, hence the environmental regulations provide more flexibility and lenience than the others. As the boundary lever is guiding for employee behaviour, the dimensions where the rules are stricter are likely to see a higher rate of goal achievement . In that sense, it seems like the boundary systems of MCS and SCS are stronger, but they are only stricter. Nevertheless, the differentiated use of the boundary lever might mean that the environmental dimension will be neglected in favour of issues within the social or financial dimensions, even though the strengths of the dimensions are balanced.

6.3.2 How does the integration of MCS and SCS in a company impact their conflict management?

In accordance with the framework of Gond et al. (2012), there seems to be a lack of technical integration within the boundary lever. According to Finding 4, there are separate policies for internal practices, like the mentioned approval system, the system to choose suppliers, and rules considering anti-corruption. Since these are used separately, the boundary system can be classified as technically unintegrated according to the framework.

When it comes to organisational integration, the employees agree that they need to comply equally with the frames of all three dimensions. Hence, the manner in which the policies are employed is the same across the dimensions. As discussed above, the difference in the systems is a result of the difference in how strict they are. Therefore, the use of rules is equal across the different dimensions, which indicates that the boundary system is organisationally integrated between the three dimensions.

In terms of cognitive integration, there seems to be an understanding that the rules and regulations regarding all three dimensions are of equal importance. Both managers and employees claim that approval from the classification society in terms of the environmental and social rules is crucial for the organisation. Also, when it comes to the financial dimension, the importance of reaching the minimum requirements is accepted across organisational levels. Therefore, the boundary system appears to be cognitively integrated in all three dimensions.

The cognitive integration of the MCS, SoCS and ECS seems to function as a balancing factor in the prioritisation of the three dimensions. Furthermore, as the boundary system is strong and the prioritisation is balanced, at least between the more strict SoCS and MCS, it seems like the cognitive integration outweighs the other two forms of integration. Therefore, the cognitive form of integration influences the conflict management to be more balanced, effectively outweighing the lack of technical and organisational integration

6.3.3 How are the MCS and SCS influenced by the conflict management of sustainability and profitability?

According to the findings, the boundary system is highly influenced by external rules and policies. This indicates that the boundary system of Grieg is based on isomorphism, a process of homogenisation (DiMaggio & Powell, 1983). Hawley (1968, as cited in DiMaggio & Powell, 1983, p. 149) defines the concept as "a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions". DiMaggio and Powell (1983) elaborate on three dimensions of institutional isomorphism, where one of these seems particularly interesting in this context: the coercive isomorphism. The forcing constraints in this case comes from political influence and the need for legitimacy. The boundary system of Grieg seems to be in accordance with this concept, as the internal rules have evolved as a result of the external influence of institutions. Both social and environmental forcing constraints are important to comply with, as they ensure the legitimacy of Grieg Star. For instance, the internal policies regarding sulphur content in the fuel have followed the external regulations of the classification society. This was a legislation adopted by the DNV GL class, of which Grieg Star is a constituent, where the regulation came into effect from January 1, 2020 (DNV GL, n.d.a). Grieg Star is in compliance with this regulation today, as they use the fuel types VLSFO and MGO which contain low percentages of sulphur. Still, their websites show that as late as in 2019, Heavy Fuel Oil represented 81% of their energy consumption (Grieg Star, n.d.c). As Grieg Star changes their policies in line with the external change in legislation, this example illustrates the coercive isomorphism. As this is the case, it means that there needs to be changes in the regulations to change the frames of the boundary system regarding SoCS and ECS. This corresponds with Finding 4, where the employees put forward a need for worldwide regulations in order to prioritise sustainability. However, these changes are not relevant when discussing changes due to the process of conflict management between sustainability and profitability.

There have also been changes in the internal policies over the years. For instance when it comes to the financial policies, with the example of the required payback time. When Grieg Star was in a better financial position, the payback time of new investments was around 5 years. During these years, the company Grieg Green was established. Finding 6 reveals the change in this requirement in accordance with the organisation's financial position, with the current payback time being 1 year. Similarly to the isomorphism, the changes due to the financial position is not a response to the process of conflict management.

Contrastingly, according to Finding 5, the interviewees state that standards will be developed when they make the daily work easier. This will also be the case for sustainability issues. Whenever solutions make business easier a new internal policy can be established, also when it comes to rules for prioritising between sustainability and profitability. These new policies will then be a part of the boundary system. Therefore, it seems like policies might be influenced by the prioritisation between sustainability and profits through the development of new policies.

6.3.4 Main Finding

The boundary system is found to be a strong, but unintegrated, lever for the MCS, SoCS and ECS. As the boundary systems of ECS and SoCS are controlled by external regulations, there needs to be a change in these regulations if the environmental and social dimensions are to be prioritised above the financial, which is controlled through internal policies. The cognitive integration of the control systems is found to increase the balance in the conflict management, and outweigh the lack of technical and organisational integration. Based on the prioritisation between sustainability and profits, the internal policies might also be reshaped with the goals of simplifying business practices.

6.4 Diagnostic system

There are two findings that fit within the diagnostic system. The first is that the initiatives that receive the most attention are the ones that can be quantified and measured using KPIs and budgets. The second finding is that the three groups of KPIs are prioritised differently by the managers and the employees.

6.4.1 How is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?

The diagnostic system has quite a strong position within Grieg Star when it comes to guiding prioritisations, as evidenced by Finding 7. The diagnostic system employs tools such as KPIs, incentive systems, and budgets in a mechanical way to effectively guide employee behaviour (Widener, 2007). The ability to see change over time and measure the impact of initiatives is motivating for the employees, meaning that they are more likely to work actively towards reaching the targets.

The financial dimension is easily quantifiable and measurable, which lends itself well to the diagnostic dimension. One of the most important financial KPIs in Grieg Star is having a short payback time for investments. This does seem to be encouraging a form of quarterly capitalism, or short-term view of financial KPIs, which may lead to disadvantages in the long run. This is consistent with the findings of several researchers such as Aragon-Correa et al. (2017) and Epstein et al. (2015), who argue that the pressure for short-term earnings will result in the financial goals being prioritised over the sustainability ones. Hence, the financial dimension, and as a result the MCS, receives the most attention within the diagnostic system.

Within the social dimension, some aspects are relatively easy to measure, such as the number of deaths and the number of injuries, and these areas definitely receive attention. This is also likely to be an effect of legislation, making the measurement of these factors obligatory. However, things that are harder to measure, such as the effect of having a diverse workforce, do not receive as much attention unless managers actively highlight them through creating new KPIs. Without clear and measurable KPIs, these aspects are the ones where concrete action and initiative will be lacking. An example is the focus on increasing the number of female employees onboard the vessels, and especially the share of females working in the top positions. The annual report in 2008 claimed that the total distribution in Grieg Star was 48% women and 52% men, thus no further action was needed in this area (Grieg Star, 2009). It was not until 2012 that the company started recruiting female cadets, training them for future officer positions, and measuring the success of the program through renewed KPIs for gender equality (Grieg Star, 2013). Now that there are more detailed KPIs showing the areas that need improvement, a lot of attention is directed towards meeting the targets. In 2015, 11

of the 769 seafarers were women (Grieg Star, 2016), whereas in 2019, 14 out of 720 seafarers were women, with one holding a senior management position (Grieg Star, 2020a). Hence, the diagnostic system is strong enough in Grieg Star to prioritise the aspects of the social dimension, and the SoCS, that receive attention from the managers.

Like in the social dimension, there are certain areas within the environmental dimension that are easier to measure the effect of, such as SOx and CO2 emissions. Likewise, these areas receive more attention in Grieg Star compared to other aspects, such as the chemical pollution from paint and antifouling. Nevertheless, in Finding 6 the interviewees highlight the need to balance sustainability initiatives with the potential for financial gain in the implementation of change. Hence, this prioritisation can also be a result of the fact that there is a clear financial gain from optimising fuel usage, but not from choosing a more expensive antifouling for all the ships. This aligns with the argument of Jørgensen and Pedersen (2018, pp. 139) that a prerequisite for the alignment of sustainability and profitability is that sustainability initiatives need to result in direct benefits through the reduction of cost or the increase of revenue. Since the managers have not yet created KPIs on chemical pollution and other aspects of the environmental dimension, the employees are not focusing on it and the financial dimension wins these battles. Nevertheless, as Grieg Star is moving into an ESG system, more environmental issues will receive KPIs and consequently more attention. The conclusion is therefore that the diagnostic system of ECS has a strong impact on the prioritisation of the environmental dimension on the aspects that are being measured.

It is evident that the easily quantifiable and measurable activities have been prioritised by the managers, which has resulted in attention being directed mostly towards the financial dimension. Nevertheless, the areas within the social and environmental dimensions that are relatively easy to measure and the ones that have clear KPIs, such as number of deaths and injuries, CO2 emissions, and gender equality, also receive attention. Hence, the high influence of the diagnostic system effectively guides the focus of the employees towards the areas that are prioritised by the managers. Consequently, this often means that the financial dimension is prioritised, at the expense of the environmental and social dimensions.

6.4.2 How does the integration of MCS and SCS in a company impact their conflict management?

In Grieg Star they have divided the KPIs into three groups: “humans”, “environment”, and “OPEX”, mirroring the three dimensions. Even though the KPIs are all part of the same system, the clear division into groups makes it easy to focus on only one dimension and disregard the other two. Accordingly, the dimensions are technically integrated as they are part of the same system and written on the same document (cf. Finding 8). Since the interviewees discuss the KPIs as a combined tool, there is no evidence of a lack of organisational integration either.

Contrastingly, Finding 8 indicates that the dimensions are not cognitively integrated. The groups have a clear ranking despite some of the interviewees’ insistence that they do not, with the majority of available time being spent on the financial KPIs. Seeing how the cognitive element is the guiding factor for where attention is directed, the two other forms of integration will not be able to make up for the lack of cognitive integration. Hence, we argue that the MCS, ECS, and SoCS in the diagnostic system are not fully integrated in practice.

6.4.3 How are the MCS and SCS influenced by the conflict management of sustainability and profitability?

As discovered in Finding 8, the diagnostic system has expanded to include the social and environmental dimensions as well as the financial one. This is a clear indication that Grieg Star is moving in the right direction in terms of sustainability, and have been for a while. All the annual reports going back to 2008 include targets and KPIs for both the social and environmental dimensions in addition to the financial one. It has also been shown that campaigns bringing attention to certain aspects or initiatives are highly effective, cf. the plastic campaign that is currently in effect as discussed in e.g. Finding 7. The continued effort and willingness to improve in this lever indicates that the balance between the dimensions is becoming increasingly equal. Since there is currently no evidence either for or against the process of conflict management having an influence on the diagnostic lever, we are unable to conclude on this aspect.

6.4.4 Main finding

The diagnostic lever is a strong lever for all three systems (MCS, ECS, and SoCS) that will guide the attention of the employees by actualising the potential gains of the areas that receive attention from managers. At the moment, the diagnostic lever is not fully integrated in terms of the MCS, ECS, and SoCS, as there is a lack of cognitive integration. There is no evidence that implies that the diagnostic lever is being influenced by the conflict management between sustainability and profitability.

6.5 Interactive system

All four findings within the theme of the interactive system emphasise its importance in the conflict management of sustainability and profitability. Interactive tools are used in the daily business of Grieg Star, where discussions are crucial to reach decisions. Within the themes of sustainability, interactive tools have also played a major role in discovering the implementations that have made Grieg stand out, and will be crucial in searching for future environmentally friendly solutions.

6.5.1 How is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?

Interactivity is important in everyday life in Grieg Star, where discussions and questions are a natural part of decisions. Finding 9 illustrates that none of the dimensions have primacy since the interviewees stated that anything can be questioned or discussed. Therefore, there seems to be balance in the interactive lever regarding the daily discussions.

Furthermore, as shown in Finding 9, there is an expectation that employees search for new ways of doing business. For Grieg Star, this expectation has led to the successful initiative of automated laundry soap, as introduced in Finding 12. The initiative was beneficial as it resulted in less scratching due to the soap actually being rinsed from the clothes, and lower costs as the use of soap was reduced. Furthermore, a reduction in the amount of laundry and the use of soap led to lower emissions of chemicals and energy consumption (Naturvernforbundet, n.d.). This initiative can be considered a result of the interactive system within the MCS, but has provided benefits within all three dimensions.

Another example of interactive processes leading to successful initiatives is the company established in 2010, Grieg Green, with a focus on the sustainable recycling of ships (Grieg Star, n.d.b). Here, Grieg Star utilizes negative externalities from their own and others' businesses, in line with suggestions from literature (Schaltegger et al., 2012; Hofmann et al., 2014; Jørgensen & Pedersen, 2018, pp. 32). This initiative indicates a strong lever of control also within the ECS. Furthermore, the new company established in 2019, Grieg Edge, captures another aspect of the interactive system with opportunity seeking and research. This company is focused on innovations for sustainable maritime services (Grieg Star, 2020b). This means that Grieg Edge is an interactive tool itself, with their mission of opportunity seeking within the environmental dimension. The establishment of this company has therefore strengthened the interactive lever of ECS, compared to the other two dimensions. Therefore, the strong interactive system of ECS might lead to a prioritisation of environmental sustainability going forward.

There are no comments from the interviewees indicating that the interactive part of the ECS is either weaker or stronger than the others, and Finding 10 illustrates that employees believe there are no dimensional constraints to this interactivity. Therefore, the opportunity seeking is found to be available and in use in terms of the three dimensions. Still, there are no corresponding examples in regards to future opportunity seeking within the financial or social dimensions, even though Finding 12 provides evidence of an obvious desire to improve in regards to safety. Hence, there seems to exist some unintended constraints or lack of attention that steer the interactive system of opportunity seeking towards the environmental dimension. What these factors are has not been found in this study.

In summary, the daily dialogue is balanced in terms of the three dimensions, but there is a clear disproportion when it comes to opportunity seeking. Therefore, one can say that of the interactive levers of the MCS, SoCS and ECS, the one for ECS is the strongest. This is likely to influence the prioritisation of the three dimensions, where the ECS would come out on top, particularly in comparison with the social aspect.

6.5.2 How does the integration of MCS and SCS in a company impact their conflict management?

There are not many explicit discussions regarding the difference in the interactivity between the three dimensions. Still, there are several quotes under Finding 10 that indicate that all

forms of integration are present among all three dimensions. Neither the daily dialogue nor the process of new suggestions are found by the employees to exclude any dimensions. Therefore, it seems like the formal arenas for interactivity in Grieg Star are the same for all three dimensions. The similar use across dimensions and the formal structure of interactivity indicate both organisational and technical integration. Furthermore, the expectations from managers regarding opportunity seeking include improvements in terms of ingenuity, sustainability and cost efficiency. This indicates that the daily interactivity is cognitively integrated as well.

However, the picture is different for the more active opportunity seeking tools, where Grieg Edge represents the environmental dimension. It is interesting that there are no interactive initiatives highlighted with another primary focus than environmental sustainability. With one formal system which is directed at the environmental dimension, one can say that there is no technical integration when it comes to opportunity seeking. This further indicates a lack of organisational integration, as the use of this interactive method solely includes ECS. Still, according to Finding 9, the interviewees indicate that the financial perspective is tightly connected with the opportunity seeking for environmental improvements. An example illustrating this point is that even though the goal when building new ships is to reach zero emissions from their propulsion system, the interviewees highlight that there is a high cost to flexibility. The consequence of this is the development of engines that can only use two alternative fuels rather than four. This example shows that the interactive system of ECS is tightly integrated with financial realism. To some extent, this can be identified as cognitive integration between the environmental and financial dimensions. Even though the environmental opportunity seeking is constrained by the financial position of Grieg Star, this cannot be classified as a technical or organisational integration of MCS and ECS. Therefore, the interactive system concerning opportunity seeking overall indicates a lack of integration.

All in all, the interactivity seems to be clearly divided into two parts. The daily interactivity is integrated, which can lead to a balanced prioritisation of the three dimensions. For interactive tools directed at opportunity seeking more explicitly, there is a lack of integration. The ECS seems to be a priority within opportunity seeking, given that the constraints of the financial dimension are met. Hence, the interactive lever is likely to foster a prioritisation of the environmental dimension.

6.5.3 How are the MCS and SCS influenced by the conflict management of sustainability and profitability?

In accordance with the claim of Aragon-Correa et al. (2017) that the ability to invest is a prerequisite for new initiatives, Finding 9 illustrates that there has been more room for interactive initiatives in times of strong financial positions. Finding 6 and Finding 9 highlight the example of payback time, where Grieg Green was kept in operation even though there was no financial return until year five. A consequence of this might be that environmental sustainability is only strengthened in financially strong periods. However, the establishment of Grieg Edge proves the opposite, where a new company with an interactive mission was established in 2019, in a period that was described as financially challenging in Finding 6. Nevertheless, as Finding 9 discusses, there are fewer implemented initiatives these days, which indicates that the MCS and SCS are influenced by the financial capability of the company.

In addition, Jørgensen and Pedersen (2018, p. 5) claim that technology is a key driver for sustainability, where the change in the interactive system might originate as a response to the fourth industrial revolution (Schwab, 2016). The search for opportunities regarding carbon free fuels such as ammonia, hydrogen, and battery technology is also in line with the technological waves described by Stopford (2020). The fact that the current technology is limited and inapplicable to the ships of Grieg Star could increase their desire to be leading the technological development within deep sea shipping. However, the search for opportunities could also originate from an internal desire to improve the balance in their prioritisation of profitability and sustainability. If this is the case, the process of conflict management can be characterised as an influencing factor on the interactive system. Unfortunately, this study does not provide the evidence needed to conclude on the origin of change in the interactive system, and thus lacks the evidence to claim that the conflict management has an influence.

As introduced in Finding 11, the changing demands of stakeholders can be a driver for opportunity seeking in Grieg Star. This corresponds with literature as change in stakeholder demands is listed by Jørgensen and Pedersen (2018, p. 5) as one of the three drivers of sustainability, where an improved reputation is classified as an enabler of the alignment of profitability and sustainability (Jørgensen & Pedersen, 2018, p. 129). Therefore, Grieg Star might scout for changes in stakeholder demands to secure or improve their good reputation,

as this could lead to financial income through deals and partnerships. Since these changes are sought out, change in stakeholder demand is likely to influence the interactive system.

This means that the changes in the interactive system have been due to the financial position of the company, technological development, and changes in stakeholder demands. There is no evidence proving that the change is due to conflict management.

6.5.4 Main finding

Given that the financial boundaries are upheld, the focus of the interactive tools influence the prioritisation between sustainability and profitability. The lever is found to be integrated when it comes to the daily interactivity, which helps improve the balance of the three dimensions, but it is unintegrated in opportunity seeking. Changes in the interactive system seem to be influenced by technological developments, changing stakeholder demands, and the financial position of Grieg Star.

6.6 Partnerships

It is interesting that Grieg Star considers partnerships to be crucial to be able to reach their chosen SDGs. This last finding, number 13, is separate from the themes related to the LoC-framework. On one hand, selecting partners with their own goal of reaching the SDGs might lead to partnerships where both partners have high sustainability ambitions. This can further influence the prioritisation between sustainability and profits in Grieg Star, if the partners demand increased sustainability considerations and changes. On the other hand, this perception seems to influence the prioritisation between sustainability and profits, mainly as it strengthens the effect of the values. Therefore, one can state that this finding strengthens the effect of the belief system rather than adding on an additional source of influence. Finding 13 reveals that decisions regarding new partners in Grieg Star are based on mutual values. Therefore, if partners are elected based on these similarities, the values pervaded in the organisation will influence who their partners are. This means that these values will influence the prioritisation between sustainability and profitability rather than the partnerships themselves. Therefore, partnerships will no longer be considered an isolated factor of influence on the conflict management of sustainability and profitability.

Even so, partnerships might be considered a driver for sustainability in regards to the literature and the discussion of Finding 11 on the change in stakeholder demands. As partners are crucial stakeholders in Grieg Star, change in their demands might influence the conflict management of sustainability and profitability. Furthermore, an improved reputation is highlighted by Jørgensen and Pedersen (2018, p. 129) as a factor which can contribute to the alignment of profitability and sustainability. Therefore, the perceived reputation of Grieg Star among existing and potential partners can lead to the financial benefits of reduced costs or increased revenue. Similar to the conclusion in the previous paragraph, we find the dimension of stakeholder demands to be integrated in the opportunity seeking of the interactive system, and partnerships will therefore not be discussed as a separate factor in this context either.

6.7 Conceptual Framework based on Main Findings

Through our discussion of the four levers of the MCS, SoCS, and ECS, we found that the levers influence the conflict management of sustainability and profitability. How this influence can be understood in the larger picture will be examined in the following section, organised according to the three sub-questions. Finally, our findings will be illustrated as a conceptual framework.

6.7.1 How is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?

According to the empirical findings, the boundary lever has a strong influence on the conflict management of sustainability and profitability. Highly relevant for the boundary system is the influence from external rules and regulations, as maritime organisations need to be compliant in order to do business. As for the empirical case of Grieg Star, the external rules strengthen the boundary system of ECS and SoCS due to the requirement of compliance. This might lead to a prioritisation of the environmental and social dimension. The internal policies regarding the financial aspects further set the frame of the prioritisation as the demands from the owners need to be met. Therefore, as safety requirements are strict, the financial dimension sometimes needs to be a lower priority for Grieg Star to be in compliance with the external safety demands. This is not the case for the environmental dimension, primarily since the rules and regulations of the ECS are more lenient than those

of the SoCS. Hence, to prioritise the environmental dimension in the same manner, the external rules and regulations also need to be that strict. Furthermore, internal policies might be influenced due to efficient business solutions. Whenever decisions are found to be effective they are likely to be implemented as a functioning internal policy or standard. Therefore, the internal policies and the process of conflict management could be considered to have mutual influence on each other.

The diagnostic system has a high influence on the conflict management of sustainability and profitability as it effectively guides the employees' attention towards what the managers currently consider to be important. This has traditionally led to the financial dimension getting the most attention, along with the safety aspect of the social dimension, but we are seeing a slowly changing trend towards more focus being placed on the environmental and social dimensions in general. Thus, the lever is steadily becoming more evenly balanced between the MCS, SoCS, and ECS.

The belief system seems to be important in the prioritisation of sustainability and profits. Nonetheless, it is clear that the values need to be deeply integrated to have any influence on the conflict management. When comparing the three dimensions in the belief system, the SoCS is deemed to be the strongest. For Grieg Star, this might mean that the SoCS guides the employees to prioritise the social aspects when in conflict with environmental or financial aspects. Still, it is crucial that the decision first and foremost is in compliance with rules and regulations. The belief system will therefore be guiding given that the external and internal rules and policies are being followed. With the example of entering new partnerships, compliance with policies need to be ensured before the values will influence the decision.

Parallel to the influence of the belief system, the interactive tools can influence the conflict management in Grieg Star. Dialogue and advice from managers appear to be essential in decision-making, also in regards to sustainability, and might therefore influence the prioritisation between sustainability and profitability. Even though there is no interactive system that stands out in terms of discussion, the ECS is stronger than the other two in regards to opportunity seeking. This might lead to the primacy of the environmental dimension over the other dimensions in times of conflict. Still, the interactive system has the same prerequisite as the belief and diagnostic systems: the external and internal rules and regulations need to be met for all three dimensions.

According to literature, the balance between the two pairs of levers is crucial for the LoC-framework. However, the empirical evidence of this study suggests an orderly manner of prioritising the four levers of control; (i) boundary system, (ii) diagnostic system, and the parallel (iii) belief and interactive systems. Hence, the balance between the levers may not be as crucial in the prioritisation of sustainability and profitability as assumed in the beginning.

6.7.2 How does the integration of MCS and SCS in a company impact their conflict management?

In our analysis, it became apparent that the levers generally have a low to medium integration of SoCS, ECS, and MCS. In the words of Gond et al. (2012), the systems are decoupled. Still, Grieg has been awarded with a prize for environmental action and a high ranking in regards to the social aspect of gender equality. Therefore, the lack of integration has not been a hindrance for Grieg Star in achieving success in their triple bottom line. We will look into the effect of each aspect of integration to discover the influence on the prioritisation between sustainability and profits.

The belief system is found to be more integrated between the SoCS and ECS through the SDGs, than with the MCS. Even though the SoCS and ECS are fully technically and organisationally integrated, there is a great difference in their impact on conflict management. There is also technical and organisational integration with the MCS to some extent. Still, it seems like it is only the values of SoCS that are successfully pervaded in the organisation. This indicates that the lack of cognitive integration between all dimensions is the decisive factor of balancing the priorities of a triple bottom line.

In the boundary system, the integration is found to be cognitive and organisational between the three dimensions, but not technical. This is a strong lever directing the organisation with a balanced conflict management as the constraints in the MCS, ECS and SoCS are all followed in the same manner. The balance is upheld despite the lack of technical integration. This strengthens the argument for the technical integration being an inconsequential factor for improving the balance. In addition, this might imply that cognitive and organisational integration are the key forms of integration to reach a balanced prioritisation of sustainability and profits, as it is enough for the system to maintain its balance.

The diagnostic system is technically and organisationally integrated, but not cognitively. It is a strong lever, that influences the prioritisation to a large degree towards the easily

measurable targets. Due to these targets often being financial, this dimension is usually prioritised. The fact that two out of three forms of integration are present, yet there is still a clear imbalance favouring the financial dimension, dictates that these two forms of integration are inconsequential when it comes to balancing. Hence, to reach a balanced conflict management and success in a triple bottom line, the evidence from the diagnostic system indicates that there is a need for increased cognitive integration. This confirms the findings from the boundary system regarding the technical and cognitive forms of integration. The organisational form of integration, however, is not relevant in the context of the diagnostic lever.

When it comes to interactivity, the everyday dialogue is an integrated tool where the conversation leads to a balanced prioritisation between the three dimensions. While opportunity seeking is cognitively integrated between the environmental and financial dimensions, it lacks technical and organisational integration. Even so, opportunity seeking has led to successful outcomes in terms of the triple bottom line, with examples such as Grieg Green. Today, this environmentally directed subsidiary provides both environmental and financial success. This indicates that cognitive integration is the form of integration needed to successfully reach a balanced prioritisation of sustainability and profitability, which further strengthens the findings from the other levers.

In accordance with this discussion, and the empirical evidence from each of the levers, cognitive integration is the key form of integration for organisations to reach a balanced conflict management, and thereof success in terms of a triple bottom line. This finding is in line with the literature of Gond et al. (2012) and Battaglia et al. (2016), who claim there is a need for cognitive integration across the managerial positions in an organisation. Contrastingly, the empirical findings of this study suggest a need for cognitive integration across all levels in the organisation. The technological and organisational integration do not seem to have the same impact on the prioritisation between sustainability and profitability.

6.7.3 How are the MCS and SCS influenced by the conflict management of sustainability and profitability?

The changes in the belief system mainly come from external factors rather than the internal conflict management. An example of this is the recommendation of the Norwegian Shipowners Association for ESG reporting, which will influence the future of sustainability

reporting. The boundary system is also highly influenced by external factors due to the prominent isomorphism. Furthermore, the financial position is found to influence both the boundary system and the interactive system. The internal policies, for instance the demand for payback time in investments, is found to be fluctuating in relation to the financial position. This seems to be related to the interactive system, where there is more room to act when in lucrative times. Nevertheless, neither external influences nor financial position are results of the process of conflict management between sustainability and profitability.

Nevertheless, there is one element from the process of conflict management that can influence the MCS and SCS. That is the inclusion of new policies and standards as a response to effective actions being taken. The boundary system will be updated when methods, also those pertaining to conflict management, are found to be effective. Consequently, the boundary systems of MCS and SCS are influenced by conflict management through the development of the internal policies.

6.7.4 Illustration

In Chapter 2 we presented a framework to illustrate the research question based on our understanding of the study from a theoretical point of view. In this chapter, the conceptual framework has been updated to include insight from the empirical findings of Chapter 5, and the main findings of the discussion in Chapter 6. Therefore, the conceptual framework illustrates the mutual influence between the levers of control and the prioritisation between sustainability and profitability. This framework is illustrated below, and the elements are explained.

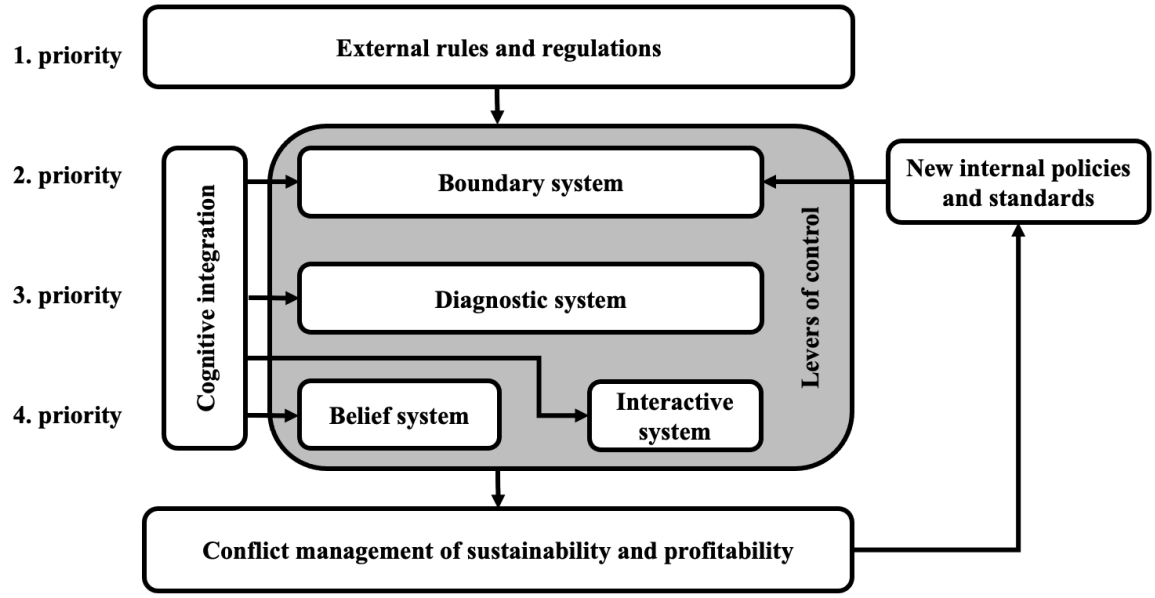

Figure 3: Conceptual framework

The research question seeks to investigate the mutual influence between the boxes of *Levers of control* and *Conflicts management of sustainability and profitability.* The combined effect of the four levers of control on the conflict management of sustainability and profitability is illustrated with the vertical arrow between the two boxes.

The *Levers of control* consists of several boxes. The box *Boundary system* illustrates that the need to be in compliance with this system can be considered a first priority in the conflict management of sustainability and profitability. Still, this system is highly influenced by *External rules and regulations,* illustrated with the box of the same name, and internal policies will again need to be in compliance with these. The prioritisation needs to be in compliance with external, and thereafter internal, rules and regulations, therefore these are placed as the first and second priority. The diagnostic system is the second strongest lever when it comes to guiding the attention and initiatives of the employees within the rules and regulations, and is thus ranked as third priority. The box of *Belief system* includes the values pervaded in the organisation, which will guide the prioritisation when in compliance with the boundary system and the diagnostic system. The interactive system will be prioritised in parallel with the belief system, illustrated by the box *Interactive system* being placed next to the box *Belief system*. When in compliance with the boundaries and diagnostic measures, the interactive system will guide decisions through discussions and opportunity seeking.

In addition, the box *New internal policies and standards* illustrates the effect of the conflict management of sustainability and profitability on the MCS, SoCS and ECS. It shows that if

the management of conflicts makes business easier, the decisions might be developed as new internal policies and standards. These new developments will then update the boundary system, and will guide the organisation in the next prioritisation of conflicts.

Beyond the levers of control, the cognitive integration of the MCS, SoCS and ECS will influence the balance in the conflict management of sustainability and profitability. This is illustrated with the box *Cognitive integration*, and the arrows from this box to the boxes referring to each lever of control. When there is a high degree of cognitive integration between the three, the prioritisation will be more balanced between the three dimensions. Therefore, the integration influences each of the levers rather than influencing the conflict management of sustainability and profitability directly.

7. Conclusion

The last chapter will finalise the study, and point out directions for future research. In regards to the research question and sub-questions, section 7.1 elaborates on the conclusions of the study. In section 7.2, directions for further research as an extension of this study will be suggested.

7.1 Answering our Research Question

Based on the increased focus on sustainability (Unruh et al., 2016; Corry & Reiner, 2020), the IMO goal of halving the emissions in the sector before 2030 (Norsk klimastiftelse, 2020, p. 4), and the debate on the financial returns of sustainability (e.g. Schaltegger et al., 2012; Epstein et al., 2015; Aragon-Correa et al., 2017; Jørgensen & Pedersen, 2018), maritime organisations need to consider the potential conflict between sustainability and profitability going forward. The debate regarding the profitability of sustainability is loud (e.g. Epstein et al., 2015; Aragon-Correa et al., 2017), and the literature regarding MCS describes a tool that enables organisations to cope with the changes towards sustainability (e.g. Schaltegger et al., 2012; Pedersen & Jørgensen, 2018, pp. 155 & 202). Even so, there is a lack of research concerning how elements of the MCS influence and are being influenced by the prioritisation between sustainability and profitability. Psarafis (2019) also highlights the managerial importance of studying how companies within the maritime sector can implement changes to develop sustainably and contribute to the goals of the IMO. Therefore, this study has attempted to answer the following research question and sub-questions:

How are the management control systems in an organisation influencing, and being influenced by, the managers' approach to solving conflicts between sustainability and profitability?

i. *How is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?*

ii. *How does the integration of MCS and SCS in a company impact their conflict management?*

iii. *How are the MCS and SCS influenced by the conflict management of sustainability and profitability?*

The sub-questions, with the purpose of highlighting the effect of essential MCS elements, will be answered in the following paragraphs. The first question asks: *how is the balance of power between the Levers of Control influencing the outcome of the conflict between sustainability and profitability?* According to Simons (1995a) the four levers need to be balanced in the MCS. However, the findings of this study provided an order of priority in Grieg Star; (i) external rules and regulations, (ii) the boundary system, (iii) the diagnostic system, and (iv) the belief system and the interactive system. This order reflects an imbalance in the power of the levers. The boundary system lays the foundation for the prioritisation between sustainability and profitability, as there is a need to be in compliance with external and internal policies, rules and regulations. Thereafter, the diagnostic system functions as a guide for the attention of the employees seeing how "what is being measured is being done" (Interviewee 2), and the lever thus strongly influences the prioritisation between sustainability and profitability. When in compliance with the boundary and diagnostic levers, there is room for influence by the belief and interactive systems. The belief system guides action through the values that are pervaded in the organisation, while the interactive system provides tools such as discussions and opportunity seeking, where decisions and new solutions can be found. As a response to our findings, organisations that seek to improve the balance in their conflict management of sustainability and profitability should be aware of the order of priority when designing guidelines for sustainability.

The second question to examine is *how does the integration of MCS and SCS in a company impact their conflict management?* The empirical evidence indicates that the cognitive integration of the control systems influence the prioritisation to a great extent, where more cognitively integrated levers lead to a more balanced prioritisation between sustainability and profitability. In an organisation with cognitively integrated levers, the prioritisation is based on an equal evaluation of each dimension. Diversely, a lack of cognitive integration might lead to a prioritisation of one dimension, without evaluating the full picture of benefits and disadvantages. Accordingly, the technical and organisational integration do not seem to influence the conflict management of sustainability and profitability in the same manner.

Third, the examination of the question *How are the MCS and SCS influenced by the conflict management of sustainability and profitability?* reveals that decisions that make business

easier could lead to the development of new internal policies and standards. This is also the case for effective solutions regarding the conflict management of sustainability and profitability. When effective solutions are developed they will be included in the boundary system. In this sense, the MCS and SCS will be influenced by the prioritisation between sustainability and profits.

Finally, the main research question is asking *How are the management control systems in an organisation influencing, and being influenced by, the managers' approach to solving conflicts between sustainability and profitability?* In accordance with the theoretical foundation and the empirical findings, the MCS of the organisation influence the prioritisation in an orderly manner. The cognitive integration of each lever can help balance the prioritisation of sustainability and profitability. In terms of the MCS and SCS being influenced by the prioritisation between sustainability and profitability, we found that effective solutions are likely to be implemented as new policies and standards that will guide future decisions when prioritising between sustainability and profitability.

7.2 Further Research

A great avenue for further research is conducting more quantitatively oriented studies where the findings from this study can be tested on a broader group of companies. Due to the nature of case studies these findings cannot be generalised, and it would therefore be beneficial to test their applicability to other organisations at a later stage. In a similar manner, studies that replicate the model in different settings to test its applicability would be beneficial.

Another suggestion for future research is to look deeper into the effect of external rules and regulations on the internal boundary system of an organisation. To effectively compare its influence, it would also be interesting to expand this research into other types of companies within the maritime sector, other sectors with similarly strict regulations, and companies in sectors with fewer regulations. Likewise, determining any potential influence on the belief system could further develop the model, as this study only briefly touches upon the influence of external recommendations. This could have a large impact on what initiatives are implemented in an organisation if it is found that a central element of decision-making for sustainability is to look to other companies or external policies and recommendations. Furthermore, the reason why environmental opportunity seeking has gained precedence in

Grieg Star has not been discovered in this study. Therefore, exploring constraints and influences in the interactive system is a potential avenue for further research.

We would also urge researchers to look into the separation of the environmental and social dimensions into two systems that are integrated, rather than only one system like in Gond et al. (2012). In other words, future research should look into whether it would be beneficial to research the environmental dimension through the ECS and the social dimension through the SoCS rather than look at both through the SCS. This could be relevant as an expansion of the framework of Gond et al. (2012) and other existing literature where the SCS is separated from the MCS. In addition, this study indicates that the cognitive integration needed in an organisation is not only relevant for managerial positions, as discussed by Gond et al. (2012) and Battaglia et al. (2016). On that account, the importance of cognitive integration in the whole organisation should be further investigated.

Moreover, future research should study the relationship between organisations and the financial institutions when it comes to investing for sustainability. In the empirical case of this study, we found that the payback period for sustainability investments is currently as little as one year. Further identifying where the demand for the short payback time originates from could give valuable insight into the relation between the financial and sustainability dimensions. Here, influence from shareholders, the board of directors, and other stakeholders could be interesting topics. In addition, it could be interesting to study how external pressure is channelled through the board and affects the corporate governance, as well as the mindset of investing sustainably. Moreover, our study does not provide enough evidence to uncover the relationship between technological development, sustainability, and profitability. Hence, it could be interesting to investigate these relationships and their potential influence on each other.

Lastly, in accordance with the nature of the inductive approach, the direction of this study evolved during the research process. Therefore, there are several avenues for research that this study intended to answer, but that have not been covered by the empirical findings. Examples include research on organisations attempting to exploit opportunities within their existing MCS and configurations as suggested by Gulbrandsen et al. (2015), and organisations balancing the use of the four levers as suggested by Mundy (2010). The question by Ghosh et al. (2019) regarding the potential primacy of some levers within the LoC-framework has been substantiated by this study. As our findings indicate that the

conflict management of sustainability is influenced by the order of the levers of control rather than the balance of the levers, it could be interesting to investigate whether this is the case in other contexts as well. Another interesting aspect is whether the order of priority simply indicates an imbalance in the organisation, or whether it is possible to simultaneously have an order of priority and maintain the balance of the levers. Hence elaborating on this phenomenon of the primacy of some levers could be a potential avenue for further research as well.

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Appendix 1

Interview guide Grieg Star, interview round 1

Questions	Follow-Up Questions
(0:05) Warm up	
Introduction of ourselves and the project.	• Name, age, where from, school and profile • Basic repetition of topic for thesis
Introduce yourself.	• What is your position and responsibility in Grieg? • How long have you been working in Grieg? • Why did you choose to work in Grieg? • Do you like working here? The tasks, the people, the culture?
(0:10) Grieg as a sustainable organisation	
Tell us about how Grieg has evolved as an organisation. How different is it now compared to when you started working here?	• Do you feel that Grieg is identical now compared to when you started working here? If it has changed, how has it changed? • When thinking of your time with Grieg, do any events stand out to you? Are there any periods where you feel the organisation has changed or changed direction? What happened?
Tell us about how the organisation has changed in regards to sustainability.	• How has sustainability been addressed in Grieg over time? • When do you feel sustainability became a part of the organisation's focus? Has it been a quick or a slow introduction?
Tell us about your connection with the UN Sustainable Development Goals.	• How do these goals affect your daily work? • Why were these goals chosen? • Why are they split into two groups (foundation goals and stretch goals)?
(0:20) Management of prioritization between sustainability and profitability	
Tell us about how Grieg prioritizes between sustainability and profitability.	
Tell us about the influence of the values, and purpose when prioritizing between sustainability and profitability in Grieg.	• Are some of the values considered more important than others? • What role do these play in your daily work?
Tell us about the function of the rules and norms in Grieg.	• What happens if you break the rules? • Are there any differences/similarities in how these rules and norms are communicated and how violation of the rules are handled, when it comes to sustainability?

Tell us about how the budgeting/accounting processes in Grieg affect the prioritization between sustainability and profitability.	• How do the goals/KPIs and other measures guide/influence your behaviour/the employees' behaviour? • How is achievement of sustainability goals rewarded compared to the financial or other non-financial goals? Explain differences or similarities with examples. What effect do these differences of measurements have on prioritization? • Is the focus of the organisation on looking backwards and analysing previous experiences to learn from them, or on looking forward and outwards to discover new potential business opportunities? • E.g. variance between budget and actual. Do you spend time analysing the variance to understand what happened, or do you immediately look at potential new trends/changes and try to leverage them to do better in the future?
Tell us about how your communication influences how you prioritize between sustainability and profitability.	• Who do you include, and through which tools, to reach a decision? I.e. suggestion box, formal reporting system, face-to-face discussions, workshops
In what situations do you have autonomy and in what situations are your superiors in charge?	• When you are to make decisions, do you have room to decide and responsibility for the decision or do you simply follow stated guidelines? • When given a task, are you guided by the goals of the organisation or the rules and constraints you have to stay within? • What gives you the feeling of autonomy? • What gives you the feeling of being controlled?
(0:40) Management of prioritization between sustainability and profitability over time	
Tell us about how the process of prioritizing between sustainability and profitability has changed over time.	• Do you feel that the prioritisations of the company are different now compared to earlier? Due to any concrete events ? • Relevant events identified earlier in the interview. • Other events?
(0:50) Development of management systems for prioritization between sustainability and profitability	
Tell us about how Grieg works to prevent conflicts of prioritization in the future.	• How do managers act when there is a conflict in prioritizing between sustainability and profitability? How do they communicate their preferred solutions, and clarify prioritizations for the future?
(0:55) Final comments	
If it was up to you, how would Grieg best handle the prioritization between sustainability and profitability?	
Are there any other elements related to the discussion you want to highlight or elaborate	

on?	
Do you have any questions for us?	

Appendix 2

Interview guide Grieg Star, interview round 2

Questions	Follow-Up Questions
(0:00) Classification societies and IMO	
Can you elaborate on classification societies and their role in Grieg?	

Based on the work of IMO, what are the recommendations and what are strict demands?	• Can you explain the concept of SEEMP and its importance for Grieg?
	  • "Ship Energy Efficiency Management Plan"
	  • What is it? What is the purpose of it? How does it work?
	• What happens if you don't reach the demands?

You talked about the ZEEDS initiative at the last interview, could you elaborate on this initiative?	• How are you engaged in this? • How do you evaluate the success of this initiative over time?
(0:10) Differing perception of values	
How are the values and SDGs communicated in the organisation?	• Who is responsible for communicating these values and goals?
What are the expectations of the managers in terms of how values and SDGs should be utilized further down in the organisation?	
How are the values and SDGs measured and followed up in the organisation over time?	
What is being done when employees are not motivated by, or find guidance in, values and SDGs?	• How do you communicate the importance of the green shift for the employees who find guidance in policies and rules rather than motivational values and SDGs?
(0:20) The values of safety compared to the values of environmental sustainability	
How have the values of safety been communicated in Grieg, compared to the communication of values for environmental sustainability?	
How have Grieg managed to successfully integrate the value of safety into the backbone of the organisation?	• How is Grieg planning to achieve those same results with sustainability?
How does Grieg handle the "balancing act" between sustainability and finance vs. the "balancing act" between safety and	• How does the willingness to wait for return on investments differ in terms of sustainability and safety

finance?	investments? • For instance, Grieg Green/Edge • How is the link between safety and financial returns perceived compared to the link between sustainability and financial returns? • How do you handle the financial sacrifices for safety in comparison to environmental sustainability? • For instance, regarding the sacrifice of off-hire when the alternative is corruption vs. non-environmentally friendly supplies? • For instance, to reduce the speed of ships

Appendix 3

Consent form (in Norwegian)

Vil du delta i forskningsprosjektet

The interdependence of management control systems and conflict resolution between sustainability and profitability.

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å undersøke hvordan en organisasjons styringssystem påvirker og blir påvirket av konflikthåndtering i bærekraftspørsmål. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Prosjektet er en masteroppgave som gjennom det nåværende semesteret skal bli utført av to studenter ved NHH. Masterstudentene følger løpet Master i Økonomi og Administrasjon med hovedprofiler i Strategi og Ledelse og Økonomisk Styring. Formålet med prosjektet er å undersøke hvordan styringssystemer i organisasjoner påvirker og påvirkes av konflikthåndtering når det kommer til bærekraft. Problemstillingen og tilhørende forskningsspørsmål er som følger.

How are the management control systems in an organisation influencing, and influenced by, their approach to solving conflicts between sustainability and profit?

1. *How is the balance of power between the levers of control influencing the outcome of the conflict between sustainability and profit?*
2. *How does the configuration of a company affect their conflict management?*
3. *How is the company preventing future conflicts of a similar nature?*

For å besvare disse spørsmålene ønsker vi å utføre en case studie hos Grieg Group, hvor organisasjonen er et forbilde inn mot bærekraft i maritim sektor. Vi ønsker å se på hvordan Grieg Group har utviklet seg over tid, frem til i dag hvor bedriften har tatt et tydelig standpunkt basert på FNs bærekraftsmål. I den forbindelse ønsker vi å identifisere

styringssystemer og integrasjon av bærekraft, og hvordan dette påvirker og blir påvirket av hvordan avveininger mellom bærekraft og profitt har kommet til uttrykk i bedriften.

Oppgaven vil bli utgitt i NHHs register og som et akademisk prosjekt i samarbeid med organisasjonen TERRAVERA. Vår kontaktperson og samarbeidspartner på vegne av TERRAVERA er Gyda Bjercke, Head of Academic Program.

Hvem er ansvarlig for forskningsprosjektet?

Norges Handelshøyskole er ansvarlig for prosjektet, hvor vår veileder er Daniel Johanson ved institutt for Regnskap, Revisjon og Rettsvitenskap. Vi samarbeider også med stiftelsen TERRAVERA, som gjennom sitt akademiske program bistår forskning innenfor bærekraft.

Hvorfor får du spørsmål om å delta?

Basert på et teoretisk utvalg, hvor vi velger ut deltakere i prosjektet basert på behovet for informasjon til oppgaven, spør vi om du ønsker å delta i prosjektet. Vi ønsker å inkludere 5-10 ansatte i ulike stillinger i Grieg Group for å få et utvalg som kan gi oss dybdeinnsikt i organisasjonen. Kontaktinformasjon har vi fått via stiftelsen TERRAVERA.

Hva innebærer det for deg å delta?

Metodene som vil brukes i datainnsamlingen er intervjuer og dokumenter. Hvis du velger å delta i prosjektet, innebærer det at du stiller på ett til to intervjuer. Første intervju vil ta deg omtrent en time, mens andre intervju vil gjerne være kortere. Dette andre intervjuet vil kun være nødvendig dersom vi har behov for oppklaringer eller mer informasjon. Du har muligheten til å velge å kun være tilgjengelig for ett intervju. Vi er åpne for intervju fysisk eller digitalt avhengig av dine ønsker og Covid-19 situasjonen. Det er ønskelig å holde intervjuet på engelsk dersom du er komfortabel med dette. Opplysningene som samles inn er ansattes oppfatning av styringssystemet, hvilket kort sagt inkluderer verdier, regler, måltall og interaktivitet. Dine svar fra intervjuet blir notert og tatt opp på lydopptak for å senere kunne transkribere data korrekt. Spørsmål som er inkludert er for eksempel følgende:

- *Tell us about your connection with the UN Sustainable Development Goals.*

- *Tell us about the influence of the values, and purpose when prioritizing between sustainability and profitability in Grieg.*

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg. For å trekke tilbake samtykket kan du ta kontakt via mail eller telefon med prosjektets ansvarlige.

Ditt personvern – oppbevaring og bruk av dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. De som vil ha tilgang til innsamlede data er:

- Ved Norges Handelshøyskole, masterstudentene som utfører prosjektet:
  Vilde McKellar Nilsen og Ingrid Helmersen Muff.

- Ved Norges Handelshøyskole, veileder: Daniel Johanson.

- Ved TERRAVERA Academic Program: Gyda Bjercke.

Tiltak som gjøres for at ingen uvedkommende skal få tilgang til dine data vil være å erstatte navn med en kode, og holde registrert navn og kontaktinformasjon på en atskilt navneliste fra øvrige data. I publikasjon vil intervjuobjektets stilling i Grieg Group være inkludert for å kunne drøfte ulike oppfatninger i organisasjonens ulike nivå. Dette vil være en faktor som vil kunne identifisere deltakere til en viss grad. Vi vil likevel forsøke å generalisere ved å bruke begrep som "et medlem av styret" og "en ansatt i regnskapsavdelingen" fremfor konkrete stillingstitler.

Hva skjer med opplysningene dine når vi avslutter prosjektet?

Opplysningene anonymiseres når prosjektet avsluttes, hvilket etter planen er 20.12.2020. Etter prosjektets slutt vil flere anonymiseringstiltak bli gjort. For det første vil

personidentifiserbare opplysninger grovt kategoriseres i generelle stillingstitler. Videre vil personopplysninger og lydopptak slettes.

Dine rettigheter

Du vil også få tilsendt oppgaven etter ferdigstillelse og vil ha mulighet til å godkjenne sitater og opplysninger. Så lenge du kan identifiseres i datamaterialet, har du utover dette rett til:

- innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- å få rettet og/slettet personopplysninger om deg,
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke. På oppdrag fra Norges Handelshøyskole har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med: *(all kontaktinformasjon har blitt fjernet fra denne versjonen)*

- Norges Handelshøyskole ved masterstudent Vilde McKellar Nilsen.
- Norges Handelshøyskole ved masterstudent Ingrid Helmersen Muff.
- Norges Handelshøyskole ved førsteamanuensis Daniel Johanson.
- TERRAVERA Academic Program ved Gyda Bjercke.
- Vårt personvernombud: NHHs personvernombud. personvernombud@nhh.no

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:

· NSD – Norsk senter for forskningsdata AS

Med vennlig hilsen

Daniel Johanson	Vilde McKellar Nilsen	Ingrid Helmersen Muff
(Forsker/veileder)	(Masterstudent)	(Masterstudent)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet *The interdependence of management control systems and conflict resolution between sustainability and profitability*, og har fått anledning til å stille spørsmål. Jeg samtykker til:

☐ å delta i intervju

☐ å potensielt delta i et annengangsintervju

☐ at intervjuet blir tatt opp på lydopptak for å sikre korrekt bruk av data

☐ at opplysninger om min stilling publiseres slik at jeg kan gjenkjennes

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet.

(Signert av prosjektdeltaker, dato)