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Master Thesis

Preliminary thesis report

Sustainability and Management Control Systems: Exploring the patterns in Norwegian firms

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Sustainability and Management Control Systems: Exploring the patterns in Norwegian firms

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Keywords: *management control systems, sustainability strategy, sustainability control systems, sustainable development.*

1. Introduction

This section sets the context for the thesis. It explains the background to our research, starting with an overview of the problem area and then narrowing down to a research question. The section ends with a discussion of potential contributions to current knowledge of the thesis topic.

1.1. Problem area

The implementation of sustainability strategies is a problem area proposed for the master thesis. During the last decades, the concept of sustainability has become of paramount importance (Kolk & van Tulder, 2010; Labuschagne et al., 2005; Miller et al., 2013). Increased public attention on environmental and social issues such as pollution, water scarcity, poverty, inequality led to the development and spread of global and local regulations (Howes et al., 2017). In 1987 the Brundtland commission expressed concerns regarding sustainable development and was the first to define it as *“meeting the needs of the present without compromising the ability of future generations to meet their own needs”* (WCED, 1987). However, the following years indicated unsatisfactory progress towards sustainable development (Howes et al., 2017), and in 2015 United Nations committed to a new universal Agenda 2030, which urgent implementation according to UN *“will require an even stronger global partnership, complemented by multi-stakeholder partnerships to mobilize and share knowledge, expertise, technology and financial resources”* (United Nations, 2015). Private sector, part of this global partnership, is called upon to contribute to solving sustainable development challenges (United Nations, 2015).

Pressured by stakeholders, businesses are increasingly required to commit to and report on sustainability performances. The number of companies that have voluntarily incorporated sustainability reporting in annual financial statements has increased considerably (Kolk, 2004). However, the businesses' approach to sustainable development as responsibility to society, *“whereby responsibility is defined as a need to eliminate negative effects of business”* (Baumgartner, 2014),

is no longer enough. Sustainable Development Goals (SDGs) appeal to businesses to go beyond corporate social responsibility, use creativity and innovations to create value for the common good (United Nations, 2015). As such, companies started to develop and embed sustainability strategies into their operation activities, reshaping their business models, value and supply chains based on new principles like circular economy (e.g., Philips, 2020; Nordisk, 2020; Mud Jeans, 2020).

The problem of sustainable development is global and involves multi-stakeholders. From the perspective of companies' activities in the field of sustainability, the following main stakeholders are defined:

1. Society in general or a local community that can potentially profit from improved environmental quality, reduced health risks, decreased poverty, etc.
2. Shareholders. Shifting to sustainable strategies, firms can outperform counterparts and increase profits in the long run.
3. Employees might benefit from increased job satisfaction working in the company committed to social good and investments in sustainability.
4. Customers benefit by being offered a quality product, or service, that was developed upon the principles of sustainability, which in turn benefits the organization by allowing it to be perceived as an environmentally conscious entity.

1.2. Problem definition

In the existing literature on accounting and control, management control is generally viewed as a tool to achieve short and long term goals (e.g., Chenhall & Chapman, 2005; Gond et al., 2012). Anthony (1965) defines management control as *“the process by which managers ensure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives”*. Simons (1995) suggests that management control systems (MCS) are essential for strategy renewal and execution. Thus, when companies shift their strategies towards sustainability, it is reasonable to expect a corresponding change in MCS design, specifically the embeddedness of social and environmental issues.

However, despite the growing number of academic literature on management control for sustainability, the potential of MCS to embrace sustainability issues is yet under-researched (Crutzen & Herzig, 2013; Gond et al., 2012; Lueg & Radlach, 2016).

Crutzen and Herzig (2013) argue that most research focuses on identifying specific aspects of management controls, but do not adopt a broader approach to MCS. According to their findings, few papers combine formal and informal controls and study interplay between these elements of MCS for sustainability. While Lueg and Radlach (2016) find the diversity of controls for sustainability, the authors also stress the lack of study on MCS as a holistic system to support organizations in their efforts to achieve sustainability objectives. The knowledge on the interplay of sustainability management controls and conventional management practices also appears to be limited (Crutzen & Herzig, 2013; Gond et al., 2012; Lueg & Radlach, 2016). In addition, several researchers stress the dominance of environmental issues of sustainability in the research (Crutzen & Herzig, 2013; Durden, 2008; Lueg & Radlach, 2016; Morsing & Oswald, 2009).

Since the practice of management control for sustainability remains under-researched today (Arjaliès & Mundy, 2013; Crutzen & Herzig, 2013; Crutzen et al., 2017), this paper aims to empirically explore management controls to support sustainability within an organization. Drawing on data collected from questionnaires using the Malmi and Brown's (2008) framework, this paper explores empirically the extent to which large Norwegian listed companies have developed a package of formal and informal management control mechanisms to facilitate sustainability. As a result of our research, we aim to get a better understanding of the use and design of MCS for sustainability and draw conclusions about the strengths and weaknesses of modern corporate practice in Norway, taking into account the available knowledge on the topic under study. The research question we aim to answer is "*How large Norwegian listed firms use MCS to manage sustainability strategies?*".

1.3. Contribution to present knowledge

The paper makes several contributions to the literature. First, it addresses recent calls in the literature for broader exploration of corporate practices (Arjaliès &

Mundy, 2013; Crutzen & Herzig, 2013; Crutzen et al., 2017). This exploratory study fills this research gap by exploring and discussing sustainability management controls as a package in multiple large Norwegian firms. Second, the current study contributes to the literature by providing further insights into the use of the Malmi and Brown's (2008) frameworks as an analytical tool for understanding the sustainability management processes (Crutzen & Herzig, 2013; Crutzen et al., 2017). Finally, the study enriches the current research by exploring corporate practices in Norway, the geographic region which has not been researched to date. This may potentially provide information to further research on contextual factors that drive the design and use of MCS for sustainability.

2. Conceptual background

This section provides a theoretical background for the research question. It begins by defining the relationship between strategy and MCS and presenting the main MCS frameworks. Then the section summarises the current knowledge of the use and design of MCS for sustainability. To align literature review with the purposes of our research, only papers that study MCS as a holistic system were choices for the literature review.

2.1. MCS and Strategy

Strategy is defined as “a pattern that emerges from a stream of decisions” providing a “long-term direction of an organisation” (Ghosh et al., 2019; Johnson et al., 2017; Mintzberg, 1978). Chenhall (2005) explains that there are two dimensions of strategy research that are either the “content” or “process in shaping” strategy. Content approach focuses on the outcome from the strategic formation process that is seen intentionally through the “formal and national” decision of managers whereby strategy formulation and implementation is seen to follow a linear and logic process (Chenhall & Chapman, 2005). While, the process approach focuses on the procedures that form strategies and their implementation (Chenhall & Chapman, 2005; Ghosh et al., 2019). Research has shown interest in the relationship of MCS and strategy, especially in investing in the roles of MCS in supporting and influencing strategic processes and implementation within an organization (Ferreira & Otley, 2009; Langfield-Smith,

1997; Simons, 1995). The body of literature will focus on process strategy and management controls as means to shape and implement strategy (Kober et al., 2003).

Management control is defined as “*the process by which managers ensure that resources are obtained and used effectively and efficiently in the accomplishment of the organization’s objectives*” (Anthony, 1965). Anthony (1965) clarifies the nature of management control as a tool for managers, a people-orientated process whereby managers are centerlines ensuring strategies are implemented to attain goals, simultaneously influencing and evaluating performance. This approach contrasted and separated from the ideas of strategic planning, which involved setting goals and objectives of the long term organization; and operating control, involving immediate tasks being carried out (Anthony et al., 1989; Berry et al., 2019; Crutzen et al., 2017; Langfield-Smith, 1997; Otley, 1995)

Otley (1995) appraised the value of the traditional approach to management control which broadened the context within developing the study of behavioural aspects of management accounting and control. However Anthony’s (1965) definition is arguably limited to an accounting-based framework and neglect of non-financial performance measures. Broader definitions have been extended in literature research such as Merchant and Simons (1995) who include a broader view of agency theory and psychology, and Simons (1995) further contributing more to the strategic aspects of control. Additionally Merchant and Otley (2006) examined that strategic controls should extend the accounting forms of control and indicated that MCS should focus on clarifying 3 main problems: Goal alignment, adaptability and integration (Bedford et al., 2016). Goal alignment refers “to the desire for predictable and efficient achievement of firm objectives”, adaptability relates “to the capacity of the firm to respond to variations in the external environment and to flexibly adjust to novel and innovative behaviours” and integration refers to “coordination among different parts of the firm accomplish collective tasks” (Ghosh et al., 2019; Simons, 1995).

Berry et al. (2019) review that the investigation for a broader definition is needed to understand the integrative nature of the three mentioned components. Some of

the control packages and developments derived are characterised by a diversity of methods such as the balanced scorecard, Simons’ levers of control, Ouchi’s framework, Marchan object of control framework and Malmi and Brown (Berry et al., 2019; Kaplan & Norton, 1996; Malmi & Brown, 2008; Ouchi, 1979). Based on the review of this literature, management control systems encompass both informal and formal controls whereby managers guarantee the decisions and actions of employees are consistent with the firm's objectives and strategies (Crutzen et al., 2017; Ferreira & Otley, 2009). Formal controls include explicitly and tangible controls that are informative based and “explicitly packages of structure, routines, procedures and processes” that aid in navigating managers to ensure organizational goals are achieved (Crutzen et al., 2017). Informal controls are non-explicit, non written but exist in the domain of values, beliefs and traditions, benchmarking the attitudes and behaviors of employees (Ouchi, 1979; Simons, 1995).

2.2. Management Control Frameworks

This research examines the entire MCS rather than single controls mobilised by firms with sustainability strategies. To define a scope and research design, a review of existing literature on the main MCS framework is performed. Haustien et al. (2014) provides an overview of frameworks characteristics using Hutzschenreuter’s (2009) framework. Our research refers to this overview to choose a framework relevant for study of the research question.

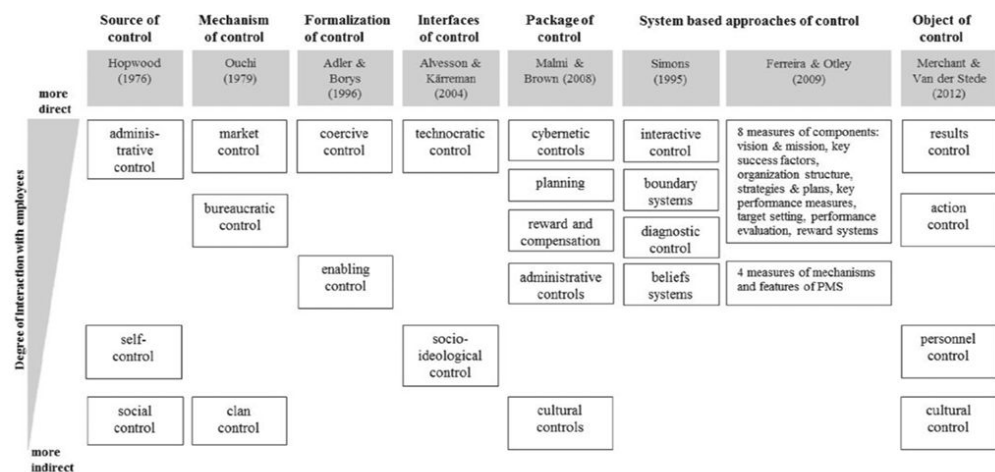


Figure 1: Overview of MCS framework (Haustein et al., 2014) p. 348

From the emergence of the definition of MCS, it has been criticized overtime for being “too narrow” since it is regarded as “calculative and accounting based practices” (Chenhall & Chapman, 2005). Arguably not regarding operational and strategic control in different technological environments, neglecting the dynamic role of MCS in formulating and evolving strategies which was not considered by Anthony (1965). These complex emerging factors were a consequence of lack of scope, resulting in a more growing and broader framework being developed to stimulate the MCS research (Strauß & Zecher, 2013).

Hopwood (1976) and Ouchi (1979) based their frameworks on both formal and informal controls and were among the first two to consider socialization as a type of control within an organization (Andric & Sigurgeirsson, 2018; Haustein et al., 2014). However the differences are highlighted in the emphasis of control types, Hopwoods lies more with informal controls while Ouchi focuses on formal controls. Looking further along the axis, Alvesson and Karreman’s (2004) framework focuses on the concept of “socio- ideological control” and is argued to be focusing more on the technocratic forms of control. This also holds for Adler and Borys (1996) who focus more on nature than the systems of control (Andric & Sigurgeirsson, 2018; Haustein et al., 2014).

Simons’ (1995) system is based on levers of controls, such as interactive, diagnostic, belief and boundary control systems. It is known as a strategic management tool and a theoretical framework for understanding relationships between strategy and control (Martyn et al., 2016). However, even though both informal and formal controls are emphasised, Simons (1995) only focuses on the use rather than design of MCS and is seen as arguably direct application by managers (Haustein et al., 2014). Furthermore Ferreira and Otley (2009) explores a broader elaboration from Otley’s (1999) framework of performance measurement systems. This framework mainly focuses on formal controls and neglects social components, indicating the lack of managerial significance in organizational performance (Andric & Sigurgeirsson, 2018) .

Malmi and Brown's (2008) framework known as the "package of controls" consisting of five control types, stressing on the informal controls and "broadly mapping the tools, systems and practices managers have available to formally and informally direct employee behaviour" (Malmi & Brown, 2008). Lastly, Merchant and Van der Stede (2007) also covers both forms of controls, of which each is initiated by the management. This highlights how the framework focuses on each control system as its "own enabler of control instrument" (Haustein et al., 2014; Merchant & Otley, 2006).

2.3. MCS for Sustainability

Although there has been an increasing number of academic literature on management control for sustainability over the past decade, the potential of MCS to embrace sustainability issues is yet under-researched (Crutzen & Herzig, 2013; Gond et al., 2012; Lueg & Radlach, 2016). This section reviews empirical studies that have focused on MCS as an entire system and sustainability.

Riccaboni and Leone (2010) explore the role of MCS in implementing sustainability strategies using the case of a multinational company Procter & Gamble. Particularly, the authors examine how MCS facilitates transforming sustainability strategies into action and how MCS should be modified when a strategic shift to sustainability occurs. The findings of the study suggest that environmental and social issues can be effectively integrated into conventional MCS. Moreover, Riccaboni and Leone (2010) propose that potentially a successful way for fostering sustainability is to integrate it into existing management control tools and practices, such as strategic planning, organizational structures and performance management systems.

Arjaliès and Mundy (2013) extend the scope of Riccaboni and Leone's study (2010) and explore the role of MCS for strategic renewal applying Simons' (1995) levers of controls framework. Thus, their study investigates the two roles of MCS: sustainability strategy formation and implementation. Drawing on data gathered through questionnaires from 36 France's largest listed companies, the authors conclude that companies in their study employ levers of control through diverse MCS in order to both form and implement sustainability strategies. Arjaliès and

Mundy recognise the potential of MCS to transform organizational practices for sustainable development.

Gond et al. (2012) also use Simons' (1995) levers of control framework to theorize the integration of strategy and sustainability. The authors propose that the design of MCS, particularly, the extent to which control systems for sustainability (SCSs) are integrated into traditional MCS, will affect the triple bottom line performance. As a result the authors suggest 8 configurations that characterize the relationships between strategy-making process and control systems. For example, the last configuration "Integrated sustainability strategy" occurs when both control systems are integrated through organizational, cognitive, and technical dimensions. This configuration corresponds to the highest level of sustainability implementation. The case study-based research of Kerr et al. (2015) also highlights advantages of integration sustainability objectives into existing MCS practices, specifically the balanced scorecard (BSC). In addition, the authors theorize the relations between the strategy and MCS design using Simons' (1995) levers of control framework. For example, the authors propose that organisations with an environmental strategy of compliance are likely to use boundary systems to ensure compliance, while organizations following strategies of excellence integrate environmental issues into their interactive control systems and beliefs systems.

Crutzen et al. (2017), similar to the study of Gond et al. (2012), explore the existence of management controls for sustainability and the extent of their integration in traditional MCS. In contrast to previous studies, Crutzen et al. apply the Malmi and Brown (2008) framework, highlighting its practice-oriented approach and suitability for examining corporate practices. Also the authors indicate the bias of previous research towards the in-depth one single case study. Thus, Crutzen et al. undertake a multiple case study of 17 large Western Europe companies to define patterns in corporate practices. The study findings suggest that organizations either deploy formal controls or informal controls to embed sustainability. As such, authors theorize that either culturally dominated or formally-established management controls are suitable for sustainability management. The current conclusion contradicts proposals of several researchers.

Riccaboni and Leone (2010) suggest that in order to really operationalize sustainability formal and informal controls are both necessary. The single case study of Durden (2008) also highlights the need of both formal and informal controls for implementing the social aspects of sustainability. Morsing and Oswald (2009) illustrate the importance of informal control systems to ensure a successful implementation of sustainable business practices in Novo Nordisk A/S.

This section concludes by presenting findings of two literature review studies: Crutzen and Herzig (2013) and Lueg and Radlach (2016). Both works agree that a growing number of researchers propose that MCS are essential to facilitate sustainability integration within organizations. However, the studies also highlight that the current knowledge about MCS to support sustainability is limited in several ways. Below knowledge gaps that are relevant for the current studies are highlighted.

First, Crutzen and Herzig (2013) emphasize that papers which they have reviewed mobilise “out-dated” management control frameworks. Specifically, the authors identify that none of the reviewed studies use the framework developed by Malmi and Brown (2008). The current literature review confirms this finding. Most of the examined papers use Simons’ (1995) levers of control framework with one exception of Crutzen et al.’ study (2017) which mobilises Malmi and Brown’s (2008) framework. Second, Crutzen and Herzig argue that most research focuses on identifying specific aspects of management controls, but do not adopt a broader approach to MCS. Thus, few papers combine formal and informal controls and study interplay between these elements of MCS. Lueg and Radlach (2016) supports this finding. While the authors find the diversity of controls for sustainability, they stress the lack of study on MCS as a package. Consistent with Crutzen and Herzig (2013), Lueg and Radlach stress the dominance of environmental issues of sustainability, rather than social ones, in the research. Finally, both literature review papers call for the study of contextual factors that determine the design and use of MCS.

3. Methodology

This section provides an overview of the research methodology employed to conduct the current study. First, the characteristics of methodology design used in prior studies are discussed. Then, the section continues by presenting the research design developed to achieve the thesis purposes. Specifically, the data collection and companies selection processes are explained. The strategy design is wrapped up with the presentation of ethical issues, followed by the discussion of the research design limitations. Finally, the section explains the choice of Malmi and Brown's (2008) framework and provides its overview.

3.1. Present knowledge and research design

The performed literature review revealed the following patterns of design methodology in prior research of MCS for sustainability. First, most studies use an in-depth single case study design (e.g., Durden, 2008; Morsing & Oswald, 2009; Riccaboni & Leone, 2010) with some exceptions (e.g., Arjaliès & Mundy, 2013; Crutzen et al., 2017). Thus, semi-structured interviews is the most popular data collection technique in the studies with the exception of Arjaliès and Mundy's paper, which uses questionnaires. The literature review paper of Crutzen and Herzig (2013) calls for survey studies in order to produce more generalisable findings. Most studies take a snapshot of existing corporate practices in a particular time (e.g., Arjaliès & Mundy, 2013, Morsing & Oswald, 2009; Riccaboni & Leone, 2010), while very few studies examine the development of sustainability MCS in the long run. Thus several researchers (e.g., Crutzen & Herzig, 2013; Gond et al., 2012) propose to take a longitudinal perspective.

In regards to objects studies preferences, the reviewed research papers tend to choose large listed companies located mainly in Western Europe (Crutzen & Herzig, 2013). Several researchers propose to conduct studies for SMEs and/or consider other geographic regions (Crutzen & Herzig, 2013, Lueg & Radlach, 2016). Concerning the frameworks used, most of the examined papers use Simons' (1995) levers of control framework. Crutzen and Herzig (2013) call to mobilise recent frameworks in the research, specifically they refer to Malmi and Brown's framework (2008). Lueg and Radlach (2016) also highlights the

dominance of cybernetic and administrative controls in the research. Several studies suggest to consider both environmental and social aspects of sustainability when studying MCS (Crutzen & Herzig, 2013; Durden, 2008; Lueg & Radlach, 2016; Morsing & Oswald, 2009).

3.2. Proposed research design

A research design is the “procedures for collecting, analyzing, interpreting and reporting data in research studies” (Creswell et al., 2007). It is the overall plan for connecting the empirical research with an abstract research problem. Following the discussion in the previous section we decided to conduct exploratory qualitative research.

Acknowledged by Robson (1993) there are three possible forms of research design: exploratory, descriptive and explanatory. Exploratory research is conducted when not enough is known about a phenomenon and a problem has not been clearly defined (Saunders et al., 2019). The exploratory nature is defined due to the developments for the understanding and connections between MCS, sustainability and strategy. Conducting an exploratory research makes the data collection more flexible and adaptable to change. This is important due to the uncertainty of data collection during the COVID -19 pandemic.

There are different strategies that can be used to collect data such as quantitative, qualitative or mixed methods (Pole, 2007). The data will be collected through a mixed method, where the major part of the data is collected through questionnaires with both open and closed questions, in addition to interviews. Bell et al. (2018) argue that this method of qualitative research creates an opportunity to deeper investigate and understand the problem scope and provide descriptive details that can create a deeper understanding of the topic at hand. Interviews and questionnaires are the primary source of data. Primary data is gathered directly by researchers while secondary data is already published information such as online research and literature research. The collection of the secondary data depends on the previous mentioned theoretical framework, consequently complementing the primary data.

The choice of the qualitative component of this study involves undertaking interviews with different representatives of the company, for instance chief financial officers and questionnaires targeted to CSR managers or sustainability related roles. The reason for choosing this mode of data collection is that it is our intention to provide an overview of the management control practices of group companies rather than individual or few companies. In doing so, we aim to provide a broad picture of the role of MCS in managing sustainable strategy, as well as a comparison point for future research, a position which has been notably lacking in previous literature (Crutzen & Herzig, 2013). Additionally Mami and Brown (2008) stated the importance of ensuring quality collected data is through interviews in order to grasp a viewpoint that is not displayed behind questionnaires or surveys.

I. Primary Data

A. Questionnaires

Questionnaires would provide great insight from multiple companies to give an overview and insight to our research topic. Due to limited time and restrictions from COVID-19, an online questionnaire will be the best approach. Online questionnaires will make it easier to gather data, follow up and be flexible. The questionnaire will contain control questions such as “ name of company, number of employees and employee position” and further questions will be developed from previous research on MCS and sustainability.

B. Interviews :

Interviews provide “in-depth information pertaining to participants’ experiences and viewpoints of a particular topic” (Wilkerson et al., 2014). Interviews will be held online via zoom with a time approximation of one hour, following an interview guide. The target respondents are Chief Financial Officers and CSR managers or sustainability related roles. There are two reasons for conducting interviews. First, to clarify any issues arising from questionnaires. Second, to get perspectives of other individuals in the organizations who are not responsible for sustainability in order to align and compare the data from our questionnaire.

II. Secondary Data

Where available, secondary data was used to triangulate the findings from questionnaires and interviews. Secondary data included data from companies' websites, internal documents and reports, as well as data from rating, for example ESG rating.

III. Choice of Firms

This paper will focus on sending questionnaires to 50 Norwegian listed firms that were chosen from the ESG 100 Norwegian largest companies and also in the Oslo stock exchange(appendix 1). The reason for choosing 50 was due to time limitation. These companies are mostly in the commercial or enterprise sector which means they are mostly large operating firms. For the interviews we will make a random sampling of companies that have responded to questionnaires. The interest in choosing Norwegian firms is because of Scandinavian companies are known to lead the “sustainability” drive compared to other European Countries (Lauesen, 2016).

IV. Ethics and Limitations

Before data gathering, we will go through the ethical guidelines formulated by NESH that BI provides for students and researchers, this is important especially for questionnaires as we will need to ensure data protection and anonymity for each respondent. In addition for interviews, each participant will have to communicate their consent and approval of participation. During this process each participant will be informed of the purpose of the study and receive standardized formulated questions to ensure validity and non discriminatory interviews. There will be an explanation to each participant that they have the right for withdrawal at any time if there is any feeling of inconvenience. With the best effort to keep the research free of biases, misconduct, fraudulent and abuse practises.

There are various limitations to consider when doing qualitative research, due to time there generally is a limit of samples that can be drawn resulting in a lack of validity. Additionally, qualitative data is known for its “subjective nature” due to information interpretation and this can further strain the validity and reliability of the analysis. Arguably exploratory research is stated to not be useful in decision making at a practical level due to the fact that it results in alternative discussions

to a solution but not identifying only one solution to the existing research problem.

3.3. Malmi and Brown’s Framework

Following the sequence of the frameworks that have summarized, and having analyzed their suitability for accommodating the aim of our thesis, we have decided to use the MCS framework developed by Malmi and Brown (2008) which is considering MCS as a “package” indicating that “individual systems are designed and implemented by different actors by different points in time” (Strauß & Zecher, 2013). It includes five types of controls; from the bottom known as administrative, representing the basis of controls, following the middle which are planning, cybernetic, reward and compensation; and the cultural controls at the top as the broadest set of controls.

Cultural Controls						
Clans		Values			Symbols	
Planning		Cybernetic Controls				Reward and Compensation
Long range planning	Action planning	Budgets	Financial Measurement Systems	Non Financial Measurement Systems	Hybrid Measurement Systems	
Administrative Controls						
Governance Structure		Organisation Structure			Policies and Procedures	

Figure 2: Management control systems package (Malmi & Brown, 2008)

Malmi and Brown’s (2008) framework is more descriptive in nature, having less focus on the normative components, and more “ free pre-assumptions regarding different controls systems and their use” (Andric & Sigurgeirsson, 2018; Haustein et al., 2014). This broad approach is more in accord with our thesis because it provides an insight of understanding the roles MCS play in the process of strategies.

Malmi and Brown (2008) focuses on the significance of the integration and synchronization of the control systems and are arguably seen as mutually-reinforcing through their design and use in acting as a management control package (Andric & Sigurgeirsson, 2018). This can be beneficial to better comprehend the organizational performance and goal achieved by the packages of control which are beneficial in the explorations of sustainability-led strategies.

An additional argument is that control systems and decision making and control systems are differentiated, focusing on the junior and senior level of the organizational level. Malmi and Brown's (2008) framework has been widely utilised in management control literature with 1880 citations to date, and mostly highlighted as the preferred framework when researching the relations between management control and sustainability (Crutzen et al., 2017)

As cited from Malmi and Brown (2008) the MCS package consist of :

I. Cultural controls : is a set of norms, values and beliefs influencing employees behaviour. Consisting of components such as *value-based controls*, *clan controls* and *symbols*.

- A. *Value based controls* originated from Simons (1994) as the belief system includes values, purpose and direction that are formally communicated from management for the organization to follow.
- B. *Symbols* as defined by (Schein, 2010) as visible expressions directed at promoting culture and uniting employees.
- C. *Clan controls* developed by Ouchi (1979) are linked with cultural traditions that are established through ceremonies and traditions of the clan. These are informal ways of internalizing values to the organization.

II. Planning controls : is a goal setting function of an organization to direct effort and behaviour. It is further divided into action planning and long range planning.

III. Cybernetic controls: "a process in which a feedback loop is represented by using standards of performance, measuring system performance, comparing that performance to standards, feeding back information about unwanted variances in

the systems, and modifying the system's comportment” (Green & Welsh, 1988). It consists of budgets, financial measures, non-financial measures and hybrids. These controls are linked to target and performance.

- A. *Budgets* : are used as a comprehensive performance plan used to integrate processes and resource allocation decisions
- B. *Financial measures* : with the aid from budgets, there are systems for measuring financial performance such as return on investments.
- C. *Non financial measures* : are used to identify other drivers of performance and value drivers of an organisation
- D. *Hybrid measures* : include both financial and non financial measures such as balance Scorecards.

IV. Reward and compensation systems : can be used as an ex-ante and ex-post control mechanism directed in motivating employees and managers to increase performance in accordance with organizational goals.

V. Administrative control : is the organization of individuals and groups within the company while monitoring their behaviour and making them accountable for their actions. They are divided into governance structure, organization structure, policies and procedures.

- A. *Governance structure* : the composition structure of the board and diverse management groups in the organization
- B. *Organization structure* : outlines how certain activities such as roles, and responsibilities that are directed in order to achieve the goals of an organization.
- C. *Policies and procedures*: are rules and policies that dictate behavior and include constraints, which can also be referred to Simons’ (1995) boundary system.

3.4. Plan for thesis progression

Activity	02.21	03.21	04.21	05.21	06.21
Develop questionnaires					
Meeting with the supervisor on Preliminary Master Thesis and questionnaire					
Data collection from questionnaires					
Data collection from interviews					
Data collection from secondary data					
Drafting findings					
Meeting with the supervisor on thesis progress					
Updating literature review, methodology, analysis of findings					
Meeting with the supervisor to discuss Master Thesis draft					
Master Thesis Report delivery					

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APPENDIX 1 - ESG 100 ranking

Norsk Hydro	A+	Kongsberg Automotive	B	Fjordkraft Holding	D
Yara International	A+	Kværner	B	Norwegian Air Shuttle	D
Aker Solutions	A	Norske Skog	B	Norwegian Finans Holding	D
Borregaard	A	Norwegian Property	B	Ocean Yield	D
Entra	A	Shelf Drilling	B	Sbanken	D
Equinor	A	SpareBank 1 Nord-Norge	B	Selvaag Bolig	D
Europris	A	SpareBank 1 SMN	B	SpareBank 1 Ringerike Hadeland	D
Gjensidige Forsikring	A	Sparebanken Vest	B	SpareBank 1 Østfold Akershus	D
Grieg Seafood	A	Subsea 7	B	Sparebanken Møre	D
Mowi	A	TietoEVRY	B	Axactor	E
Orkla	A	XXL	B	B2Holding	E
Scatec Solar	A	Golden Ocean Group	B-	Bonheur	E
Telenor	A	Norway Royal Salmon	B-	Bouvet	E
Aker BP	A-	Wilh, Wilhelmsen Holding	B-	Crayon Group Holding	E
Atea	A-	Avance Gas Holding	C	DNO	E
Bakkafrost	A-	Borr Drilling	C	Medistim	E
DNB	A-	BW LPG	C	Norwegian Energy Company	E
Kongsberg Gruppen	A-	FLEX LNG	C	NTS	E
Lerøy Seafood Group	A-	Frontline	C	Olav Thon Eiendomsselskap	E
Nordic Semiconductor	A-	Hexagon Composites	C	PCI biotech	E
SalMar	A-	NRC Group	C	Protector Forsikring	E
Schibsted	A-	Odfjell Drilling	C	RAK Petroleum	E
SpareBank 1 Østlandet	A-	PGS	C	Salmones Camanchaca	E
Storebrand	A-	SATS	C	Self Storage Group	E
TGS-NOPEC Geophysical Company	A-	SpareBank 1 BV	C	Solon Eiendom	E
Veidekke	A-	Stolt-Nielsen	C	VoW (Scanship Holding)	E
Elkem	B+	Tomra Systems	C	Komplett Bank	F
SpareBank 1 SR-Bank	B+	Wallenius Wilhelmsen	C	NEL	F
Adevinta	B	Aker	D	Northern Drilling	F
AF Gruppen	B	AKVA Group	D	Otello Corporation	F
Akastor	B	Arcus	D	Pareto Bank	F
Austevoll Seafood	B	Arendals Fossekompani	D	Treasure	F
BW Offshore Limited	B	Data Respons	D		
Höegh LNG Holdings	B	Fjord1	D		

(governance Group, 2020)