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Navigating Through Changing Waters:

- The Implementation of Sustainability Performance Measurement in the Norwegian Shipping Industry

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Sammendrag

Utgangspunktet for denne masteroppgaven var problemstillingen ”*Hvordan implementeres idéen om prestasjonsmåling av bærekraftighet i den norske shippingindustrien?*”. Ut ifra denne utviklet jeg tre forskningsspørsmål: (1) *Hvordan måles bærekraftighetsprestasjoner i den norske shippingindustrien?*; (2) *Hvilke mekanismer homogeniserer disse praksisene?*; og (3) *Hvilke mekanismer heterogeniserer disse praksisene?* For å svare på disse spørsmålene utviklet jeg en referanseramme bestående av tre elementer: (1) konseptet prestasjonsmåling av bærekraftighet; (2) ny-institusjonell teori; og (3) skandinavisk institusjonell teori. Som metodologisk framgangsmåte valgte jeg å utforme oppgaven som en caseundersøkelse med flere analyseenheter. Når det gjelder datainnsamlingsmetoder benyttet jeg meg av dybdeintervju og dokumentstudier som framgangsmåter.

Basert på funnene mine kom jeg fram til at idéen om prestasjonsmåling av bærekraftighet i realiteten ikke kunne sies å være én idé. I stedet var det snakk om flere abstrakte idéer som hadde vokst fram basert på de aspektene som det ble særlig fokusert på i den norske shippingindustrien. Dette fokuset var på mange måter likt på tvers av framgangsmåtene, men selv om praksisene fokuserte på mange av de samme aspektene, ble de likevel målt ulikt. På grunnlag av dette konkluderte jeg med at idéen om prestasjonsmåling av bærekraftighet i den norske shippingindustrien blir implementert som en følge av både homogeniserende og heterogeniserende krefter. Homogeniserende krefter har her enn viss innvirkning på *hva* som blir målt, mens de heterogeniserende kreftene påvirker *hvordan* bærekraftighetsprestasjoner måles.

Abstract

This thesis looks at how sustainability performance measurement is implemented in practice. As such, it is a response to the suggested need to do more research on *how* companies engage in sustainability associated activities rather than *why*. The context of my research is the Norwegian shipping industry. What makes this a particularly interesting context is the fact that the industry is currently going through change. Not only are they in the middle of a low-conjuncture, they are also increasingly required to adhere to standards associated with sustainability. Connected to this developed the following problem statement: How is the idea of sustainability performance measurement implemented in the Norwegian shipping industry.

In order to address this question I developed three research questions: (1) *How is performance towards sustainability measured in practice?*; (2) *What are the homogenizing mechanisms behind these practices?*; (3) *What are the heterogenizing mechanisms behind these practices?* With the purpose of answering these questions, I developed a frame of reference consisting of three elements: (1) *the concept of sustainability performance measurement*; (2) *the new institutional theory*; and (3) *the Scandinavian institutional theory*. The methodological approach I chose was to design the thesis as a case study with embedded units of analysis, while the empirical data was collected through interviews and documents.

My main findings were that rather than implementing *the* idea of sustainability performance measurement, several ideas have been implemented. Second, on the one hand, these ideas have emerged as a consequence of homogenization of the sustainability agenda in the shipping industry. On the other, due to the fact that this has not involved specific measurement approaches, ideas associated with sustainability performance measurement has remained abstract. Third, this has led to the practices showing some similarities, while at the same time being different. This difference is also due to the ideas being translated according to the local context. Based on this, ideas associated with sustainability performance measurement are translated both into and onto action. To conclude, sustainability performance measurement is implemented in the Norwegian shipping industry through the translation of abstract ideas associated with sustainability according to homogenized priorities and local circumstances. Thus, this thesis adds to the research in terms of how sustainability is measured in practice and how this implementation process takes place.

Abbreviations

CO ₂	Carbon dioxide
DNVGL	Det Norske Veritas and Germanischer Lloyd
EC	European Commission
EEDI	Energy Efficiency Design Index
EEOI	Energy Efficiency Operating Indicator
EMIP	Energy Management In Practice
EP	Energy Profile
ETS	Emission Trading System
EU	European Union
HRS	Hours
ISM	International Safety Management
ISO	International Organization for Standardization
G	Gram
GRI	Global Reporting Initiative
IMO	International Maritime Organization
KG	Kilograms
KWH	Kilowatt-hour
LTIF	Lost Time Injury Frequency
MBM	Market Based Measure
MRV	Monitoring, Reporting, Verification
MT	Metric Ton
MTKM	Metric Ton Kilometers
NHO	Næringslivets Hovedorganisasjon
NO _x	Nitrogen Oxide
NSA	Norwegian Shipowner's Association

NFK	De Nasjonale Forskningsetiske Komiteene
NSD	Norsk Senter for forskningsdata
OHSAS	Occupational Health and Safety Assessment Series
OCIMF	Oil Companies International Marine Forum
PM	Particle Matter
PSV	Platform Supply Vessel
SEEMP	Ship Energy Efficiency Management Plan
SO _x	Sulohur Oxide
TBL	Triple Bottom Line
TRCF	Total Recordable Case Frequency
UN	United Nations
WCED	World Commission on Environment and Development
WG5	The Working Group on Environmental Friendly Shipping
WH	Watt-hours

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Chapter 1 - Introduction

Some might say that sustainability is *the* topic of our generation. Others might point out that the whole premise of sustainability is that it transcends generations. Nonetheless, as it deals with questions related to our existence and in many ways challenge assumptions on which our societies are based on, it is a topic of great significance. How should we conduct ourselves in order to ensure quality of life for both the current and future generations? Although existential questions always have preoccupied mankind, this question, and others like it, seemingly became especially relevant towards the end of the 1900s. In works such as *Silent Spring* (Carson, 2002), *Limits to Growth* (Meadows, Meadows, Randers, & Behrens, 1972), *Small is Beautiful* (Schumacher, 1973), to name a few, the authors problematize the priorities in modern society. Although provocative at the time, concerns over the path that society appeared to be on became more widespread. With the publication of *Our Common Future* (WCED) in 1987, sustainability made a major breakthrough into the political arena. Since then, several initiatives, such as the UN's Earth Summit, Kyoto Protocol and more recently, The Paris Agreement, have emerged. All of which, more or less, legitimized the issue of sustainability and the need for a type of "*development that meets the need of the present generation without compromising the ability of future generations to meet their own needs*" (WCED, 1987, p. 41). The ambiguity and vagueness of how sustainability, or sustainable development, is presented above "*has resulted in a wide variety of definitions and interpretation that are skewed towards institutional and group prerogatives rather than compounding the essence of the concept*" (Mebratu, 1998, p. 493). On the one hand, it has resulted in an ongoing discussion about what the concept actually implies. On the other, the ambiguity offers room for creativity, inspiring researchers as well as practitioners to look for different solutions towards sustainability, whatever the concept might constitute (Sneddon, Howarth, & Norgaard, 2006).

Approaching the context of this thesis, the business world, a great deal of research has been focused on *why* companies engage in activities associated with sustainability. Related to this, Brockhaus, Fawcett, Knemeyer, and Fawcett (2017) presents and categorizes motivational factors that are frequently mentioned in relevant literature; enhance image, acquire resources, maximize efficiency, and/or because it is the right thing to do. Consequently, Searcy (2012) points out that research efforts have moved towards inquiring *how*, rather than *why*,

companies are engaging in sustainability practices. There are obviously numerous ways in which companies can engage in sustainability and we could for example talk about strategies, projects, investment, marketing and so on. For a broader insight the reader should be aware of the extensive literature review provided by Searcy (2012). However, as this thesis is written within the field of management control it is more suitable to present research associated to this area. This could for example be related to sustainability accounting, where Lambertson (2005) provides valuable insights in the development of different approaches. Some of the earlier methods are attributed to Gray and Bebbington (1993) who presented the methods of sustainable cost, natural capital inventory accounting, and input-output analysis. Lambertson also refers to triple bottom line accounting based on Elkington (1999), which has since become more widespread. The triple bottom line is also connected to sustainability reporting, and perhaps most notably the GRI. In this regard, Brown, De Jong, and Lessidrenska (2009) describe the evolution of the framework since its early start. Another interesting contribution to sustainability reporting is the contribution made by Burritt and Schaltegger (2010). Here the authors distinguish between two different approaches to sustainability reporting. First, the inside-out approach, which is based on the motivations and interests of management, and second, the outside-in approach, which is based on the informational needs of external stakeholders. Sustainability reporting also has a presence in the study by Nitkin and Brooks (1998), but they also focus on auditing of reports. Here the characteristics of the auditing process are related to the level of sophistication when it comes to company's sustainability monitoring and reporting. Initially, the auditing is described as an internal process, while more sophisticated companies also look for assurance both internally and externally.

Regardless of how companies engage in sustainability, *“a key component of any corporate sustainability initiative will be the development of a corporate sustainability performance measurement system”* (Searcy, 2012, p. 240). In his literature review, Searcy presents several contributions to the literature on measuring performance towards sustainability. Some are limited to specific areas related to sustainability, such as the environmental (Olsthoorn et.al., 2001, in Searcy 2012) or social aspects (Wood, 2010, in Searcy 2012). Others offer insights when it comes to measuring sustainability as a whole (Beloff, Tanzil, & Lines, 2004; Schwarz, Beloff, & Beaver, 2002; Székely & Knirsch, 2005; Tanzil & Beloff, 2006, in Searcy 2012). However, Searcy calls for the need for more contributions in the literature related to

sustainability performance measurement *systems*. More specifically when it comes to the design, implementation and evolution of such systems. Here a sustainability performance measurement system can be defined as “*a system of indicators that provides a corporation with information needed to help in the short and long-term management, controlling, planning, and performance of the economic, environmental, and social activities undertaken by the corporation*” (Searcy, 2012, p. 240). A distinguishing characteristic is that the system necessitates an integrated perspective on sustainability. In contrast to performance measurement systems that focus on for example social and/or environmental aspects, a sustainability performance measurement system must include all aspects. The initial motivation behind this thesis was to make a contribution to the literature on sustainability performance measurement systems. However, this soon proved to be a problematic objective to pursue. First of all, there is a limited amount of potential cases where a system exists according to the definition and description provided above. Second, it proved difficult to gain access in promising cases. Consequently, although the topic of this thesis focuses on sustainability performance measurement, it does not demand the existence of systems that treats sustainability as a whole. Instead, it focuses on performance measurement *associated* with sustainability. More specifically, the thesis is focused on how companies measure their sustainability performance as a whole, or some of its associated aspects, such as social, economic, and/or environmental. As such, my motivation is to contribute to the research stream connected to how companies engage in sustainability. More specifically, how performance towards sustainability is measured.

So far, it has been established that the topic of this thesis is sustainability performance measurement. The next step is to establish the context of the study. In the early stages of this thesis, before much else, shipping was an industry that most of my ideas gravitated towards. One of the reasons for this was a fascination of the role that shipping has had, and still has, in an internationalizing world. Covering around 90 per cent of the world’s transportation needs (NSA, 2015), it is difficult to imagine how the scale of international trade would be possible if it were not for this industry. Furthermore, shipping is also interesting for a Norwegian researcher due to the long history this industry has had in the country. In spite of being a relatively small country with a modest population, 5-10 per cent of the world’s commercial tonnage has been transported by Norwegian shipping over the last 150 years (NSA, 2014b).

During this time, the industry, both in Norway and internationally, has changed. Perhaps the most substantial change in recent time has been the reduction in oil-prices, which has had significant effect on the shipping industry. Although far from all Norwegian shipping companies are directly related to the oil industry, few have been able to escape the ripple effects that the low conjuncture has had in the global economy. Another challenge, and perhaps most relevant for the topic of this thesis, is that the industry is facing increasing demands to take sustainability into consideration. Connected to the Paris Agreement this is especially related to the emission of greenhouse gasses. Although the shipping industry's contribution to the global CO₂ emission did not represent more than 2.7 per cent in 2013, the International Maritime Organization are currently in the process of creating regulations towards reducing emissions (NSA, 2013). This includes a focus on emissions of sulphur oxides (SO_x) and nitrogen oxides (NO_x).

1.1) Towards the Problem Statement

Based on the above, shipping appears as an interesting context for the focus and objective of this thesis. It is an industry which is currently facing several challenges and seemingly going through change as a consequence of this. This offers an exciting starting point for doing research. According to Czarniawska and Sevón (1996), organizations going through change serves as better research objects than stable, or static, organizations. The following problem statement has been developed for this thesis:

How is the idea of sustainability performance measurement implemented in the Norwegian shipping industry?

In order to address this problem statement, the following research questions have been developed:

- 1) How is performance towards sustainability measured in practice?
- 2) What are the homogenizing mechanisms behind these practices?
- 3) What are the heterogenizing mechanisms behind these practices?

As such, it would be hard to argue that the thesis is a response to Searcy's call for additional research on sustainability performance measurement systems. On the other hand, it does contribute towards research that focuses on how sustainability is practiced by companies in the form of sustainability performance measurement. Seeing as "*sustainability initiatives must be tailored to suit local circumstances*" (Searcy, 2012, p. 240) this could potentially offer new insights on the topic related to the context of the study. This should also be seen as the main objective behind the thesis.

1.2) The Structure of the Thesis

The rest of the thesis has been structured in the following way. In Chapter 2, I will present the concept and theories that are included in my frame of reference. More specifically, I will discuss the concept of sustainability performance measurement, as well as the new institutional theory and the Scandinavian institutional theory. In Chapter 3, I will reflect on the methodological choices that were made. Here the focus will be on the design of the research, the methods that were applied, and the quality of the research. In Chapter 4, I will present the case of the thesis. In Chapter 5, I will present my empirical findings, before analyzing them in Chapter 6.

Chapter 2 - Theory

The objective of this chapter is to develop a frame of reference through which I will analyze and eventually address the research questions and the problem statement. First, the concept of sustainability performance measurement is presented. Here the meaning of sustainability and performance measurement is discussed before I explore different approaches as to how performance towards sustainability can be measured in practice. This is especially relevant to the first research question, *how is performance towards sustainability measured in practice?* Second, the new institutional theory will be presented. The appropriateness of this theory is particularly relevant to the second research question, *what are the homogenizing mechanisms behind these practices?* The third perspective included in the frame of reference is the Scandinavian Institutional Theory. As this theory includes some of the elements from the new institutional theory, it can also be applied when addressing the second research question. However, while the explanatory power of the new institutional theory has its strengths connected to the homogenizing mechanisms, the Scandinavian school argues for the importance of heterogenizing mechanisms in organizational change. Thus, the Scandinavian institutional theory can provide valuable insights when it comes to the third research question, *what are the heterogenizing mechanisms behind these practices?*

2.1) Sustainability Performance Measurement

It has been said that “*what you measure is what you get*” (Kaplan & Norton, 1992, p. 71). In other words, by measuring sustainability you will get sustainability. Unfortunately, it is a little bit more complicated than that. One of the questions that need to be addressed is, *what is sustainability?* As already mentioned, we do not seem to be able to agree on a widely accepted definition of sustainability. Consequently, *what we measure* and *what we get* will vary according to the meaning that is ascribed to the concept. Therefore, it seems necessary to present different perspectives on the meaning of sustainability before talking about measurement of performance towards it.

2.1.1) Strong and Weak Sustainability

Rather than being merely a conceptual disagreement, it could be argued that the discussion around the meaning of sustainability has its source in different epistemological and

methodological perspectives (Sneddon et al., 2006). It is intuitive that a realist and a social constructivist would look at sustainability differently. However, in order to demonstrate different meanings of the concept, it could be useful to raise the focus to the ontological perspective. Related to this, Ingebrigtsen and Jakobsen (2007) argues that sustainability can be characterized as weak or strong depending on whether the mechanical or the organic worldview is applied. In their discussion, society is divided into three sectors: economy, nature and culture. The essence of the mechanical worldview is that the totality is constituted by the sum of its parts. Here, sustainability is achievable by keeping the sum of the parts (economy, nature and culture) at a constant level over an indefinite period. A prerequisite for this perspective is the belief that factors from all three sectors are convertible into a single measure of value. Consequently, sustainability in practice is maintaining a constant sum of value in society. As capital from the three sectors is convertible into a common value, it is further assumed that they exist in a substitutable relationship (Erickson & Gowdy, 2000). Therefore, in weak sustainability, value-decline in one sector is unproblematic as long as there occurs a corresponding value-increase in another. In effect this means that *“the World can (...) get along without natural resources, so exhaustion is just an event, not a catastrophe”* (Solow, 1974, p. 11). Strong sustainability, on the other hand, argues that the different forms of capital to a great extent are complimentary rather than substitutable (Ingebrigtsen & Jakobsen, 2007). In this system, or organic, way of thinking, the whole is not characterized by the sum of its parts, but rather by the quality of its relations. As the quality of relations depends on complimentary forms of capital it follows that a respective amount of each form of capital must be maintained over a longer period of time. In this view, a capital increase in one sector cannot compensate for the decrease in others as it has degrading effects on the system, and its relations, as a whole.

Judging by the presentation above, sustainability might appear as a dichotomous concept. However, as already pointed out, there exist countless different perspectives and definitions. Rather than being a problem, this might actually be a positive thing. According to Sneddon et al. (2006, p. 264) the solution for the challenges we are facing might be to *“adopt pluralistic and transdisciplinary approaches (...) to the analysis of sustainability dilemmas”*. This view is supported by the idea of sustainability as an emerging concept based on discourse about desirable futures. Here it is claimed that there is a *“need for integration of different*

perspectives, and the recognition that sustainability is a process, not an end-state” (Robinson, 2004, p. 381). By relying on pluralistic thinking the concept of sustainability will be in a continuous development of becoming, rather than turning into an ideology. In this sense, sustainability can be seen as part of a utopia which can function as a frame of reference to our current assumptions and solutions (Jakobsen, 2017). This is all well and great, but how do you include a continuous developing concept in your frame of reference? In response to this it could be argued that it is not imperative to establish its exact meaning. Rather than discussing the characteristics of *what we get*, it seems more important to keep in mind that *what we measure* is subject to a wide array of definitions.

2.1.2) Performance Measurement

Throughout the discussion above it could appear that performance measurement is something that is given, a constant, and that the real challenge is to establish *what* we are measuring. After all, what is performance measurement more than just what the name of the concept implies: measurement of performance? In spite of its apparent simplicity, the concept of performance measurement is something that is rarely ascribed explicit definitions (Neely, Gregory, & Platts, 1995). A reason for this could be that the meaning depends on the context and whether we are talking about performance measurement as indicators, a process, or a system, where

- *Performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action.*
- *A performance measure can be defined as a metric used to quantify the efficiency/or effectiveness of an action.*
- *A performance measurement system can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions* (Neely et al., 1995, pp. 80-81).

Thus, so far, we have established that what we are measuring, sustainability, depends on a wide array of definitions, and when we are talking about measurement of performance

towards it, what ever *it* may be, it could be as an indicator, process, system or a combination of the three. In other words, so far my attempt to develop a frame of reference stays true to the ancient Chinese saying, “*the more you talk of it, the less you understand*” (Lao-tzu, 1992, p. 5). However, as I pointed out in the introduction, we are interested in *how* sustainability performance is measured in practice. Indeed, according to Otley, establishing how to measure performance is perhaps the “*the most fundamental and the most difficult (question) to answer*” (1995, p. 49). From the characterization above, regardless of whether we are referring to it as a process, metric or a system, performance measurement involves quantification. However, quantifying sustainability is only possible if you apply the perspective of weak sustainability. As we remember, in this view the relationship between economy, nature and culture are seen to be substitutable and it is possible to convert capital from the respective sectors into a single measure of value. In strong sustainability, on the other hand, quantification of for example nature and culture is seen as problematic as it is not possible to convert capital from the respective sectors into a common measure of value. Thus, the question of *how* we measure sustainability seems to be inescapable from the question of *what* we mean by sustainability. With the existence of many different definitions of what sustainability is, it is only natural that there also exist several approaches as to how performance towards it is measured. In the following parts I will present some of these.

2.1.2.1) Sustainable Cost

One of the methods that have been suggested is the sustainable cost approach. Perhaps the most characteristic feature of this approach is that it is based on the concept of capital maintenance. However, rather than talking about capital maintenance in the financial sense, this approach argues for the maintenance of natural capital. This means that “*sustainable organisation is one which leaves the biosphere at the end of the accounting period no worse off than it was at the beginning of the accounting period*” (R. Gray, 1994, p. 33). The indicators used in this approach involve calculating the cost of returning the natural system to its original state and the profit of the organization. Sustainability is then measured by deducting the costs from the profits. Performance is here quantified in the sense of being either sustainable or unsustainable. However, there are some challenges when it comes to applying sustainable cost to measure the performance of the company. First of all, how is the company supposed to measure and calculate all their external costs? The different parts of

nature consist of complex interrelationships. How are companies supposed to succeed in a task daunting even to the scientific community? Second, as Gray points out “*any use of ‘critical natural capital’ will, by definition, have to be included at infinite cost because it is irreplaceable*” (1994, p. 35). Lastly, although the approach recognizes the arguments from the perspective of strong sustainability when it comes to natural capital maintenance, it seems to ignore the other aspects of sustainability, economy and culture.

2.1.2.2) Natural Capital Inventory Accounting

Another suggested method is natural capital inventory accounting. Similar to the sustainable cost approach, natural capital inventory is based on capital maintenance. The main concern is “*identifying, recording, monitoring and then reporting, probably in non-financial quantities, the different categories of natural capital and their depletion and (or enhancement*” (R. Gray, 1994, p. 33). Sustainability performance is here measured through change in different natural capital stocks as the indicators. Natural capital inventory accounting faces some of the same challenges as sustainable cost, such as questions related to estimating the cost, in this case value, of natural capital. As can be seen from the definition above, the approach does not necessarily require nature to be converted into monetary value. However, “*whether natural inventory accounts could meaningfully reflect nature’s interconnectedness and enormous diversity is extremely doubtful*” (Lamberton, 2005, p. 10) even if pluralistic values are applied. Furthermore, can sustainability be limited to nature?

2.1.2.3) The Triple Bottom Line

Although sustainable cost and natural capital inventory accounting offer ways in which performance can be measured, they do so through a limited set of indicators. When it comes to the design of what can be called sustainability performance measurement systems, however, there is a tendency to develop a large amount of indicators (Searcy, 2012). Perhaps the most widely applied in this regard is the framework presented by the Global Reporting Initiative (GRI). Similar to sustainable cost and natural capital inventory accounting, GRI was initially focused on environmental aspects (Brown et al., 2009). However, within the release of the first guidelines the scope was expanded to also include social and economic aspect, in accordance with the triple bottom line concept (TBL).

The triple bottom line was a term that was popularized through John Elkington's *Cannibals with Forks* (1997). The term is an extension of the traditional approach where the focus was solely on economic values. The triple bottom line focuses on environmental and social values added (or destroyed) in addition to focusing on economic values added (Elkington, 2004). In this view, business practices are sustainable if they contribute towards economic prosperity, environmental quality and social justice. In order for this to happen, business must change its approach and thinking in seven dimensions: markets, values, transparency, life-cycle technology, partnerships, time, and corporate governance. Based on a systems perspective, Elkington assumes that sustainability exists in an interdependent relationship between the three components of economy, society, and environment.

Based on the triple bottom line approach to sustainability, GRI has developed a wide array of indicators which are supposed to assist companies when it comes to measuring and reporting their “*economic, environmental and social performance or impacts of an organization related to its material aspects.*” (GRI, 2013, p. 47). What the different categories covers can be seen below:

- *The Economic Category illustrates the flow of capital among different stakeholders, and the main economic impacts of the organization throughout society* (GRI, 2013, p. 48).

- *The Environmental Category covers impacts related to inputs (such as energy and water) and outputs (such as emissions, effluents and waste). In addition, it covers biodiversity, transport, and product and service-related impacts, as well as environmental compliance and expenditures* (GRI, 2013, p. 52).

- *The Social Category includes the sub-Categories: Labor Practices and Decent Work, Human Rights, Society, Product Responsibility* (GRI, 2013, p. 64).

Although the GRI claims to be “*universally applicable to all organizations, large and small, across the world*” (GRI, 2013, p. 3), some researchers argue that indicators have to be

designed according to the context in which the company operates (Searcy, 2012). This is also expressed by Goel and Cragg (2005) who points out the tension between general guidelines and context-specific needs. Furthermore, as the GRI is based on the TBL they receive much of the same criticism. More specifically it has been argued “*that the TBL and the GRI are insufficient conditions for organizations contributing to the sustaining of the Earth’s ecology*” and that “*paradoxically, they may reinforce business-as-usual and greater levels of unsustainability.*” (Milne & Gray, 2013, p. 13). However, assessing GRI’s indicators’ appropriateness as means to a sustainable end becomes a difficult task seeing as the guidelines provide no explicit definition of sustainability (Moneva, Archel, & Correa, 2006). In spite of the criticism, GRI remains the most widely accepted approach for companies looking to measure their performance towards sustainability. Thus, we have a paradox where the meaning of sustainability in theory seems to be impossible to arrive at, while the triple bottom line approach seems to be increasingly implemented in practice. Connected to this, the objective of the next subchapters is to develop a frame of reference from which we can analyze how sustainability performance measurement is implemented in the Norwegian shipping industry.

2.2) New Institutional Theory

One theory that offers a perspective on this can be found in the institutional theory, which has its variations depending on the area of study in which it is used. In this thesis institutional theories of organizations will be applied. In an early view, Max Weber presented organizational institutionalism as a process resulting from competition in the marketplace and among states, the need for control and demands for equal legal protection. However, in the new institutional theory it is argued that structures in organization are established and changed for other reasons than demands on efficiency or from competition (DiMaggio & Powell, 1983). What these reasons are will be explored in the remainder of this subchapter.

2.2.1) Institutions, rules and myths

When it comes to the explanation of what is meant by *institutional*, Zucker refers to a definition consisting of two elements. Here it is argued that something institutional is “(a) *A rule-like, social fact quality of an organized pattern of action (exterior), and (b) an*

embedding in formal structures, such as formal aspects of organizations that are not tied to particular actors or situations (nonpersonal/objective).” (Zucker, 1987, p. 444). By this definition it is apparent that, as in legitimacy theory, institutional theory assumes that companies are nested in a broader context. Vital for their existence, companies must adhere to the expectations that exist in their environment. From the definition above these expectations take the shape as rule-like social facts.

In a different perspective, *institutional* is presented as practices and procedures that society has rationalized as means suitable towards a greater end (Meyer & Rowan, 1977). Referred to as *myths*, Meyer and Rowan argue that what is considered to be institutional is a result of three different processes. First, as the quality of the relationships in societal networks increases, a larger number of myths will be generated. Second, when the context is organized collectively, myths will to a greater extent be internalized by companies. Third, myths can be generated as a result of influence from the interests of powerful organizations. Once rationalized as suitable, these rule-like social facts, or myths, function as frames of reference on which the practices and procedures of companies are assessed. Deviations between the organization and what is considered to be institutional is in institutional theory considered to be a legitimate threat for the further existence of the organization in question.

2.2.2) Organizational Fields

As a result of this, organizations experience pressure to become institutionalized. Zucker (1987) points out that in the view of Meyer and Rowan (1977) this pressure has its source in the broader social environment and cannot be reduced to what is considered institutional in the organizations' immediate surroundings. Zucker further points out that this narrower view is present in DiMaggio and Powell (1983) presentation of *organizational fields* as the main source of institutional pressure. DiMaggio and Powell present organizational fields as a group of organizations that are connected, while also sharing structural similarities. With the term *connectedness* organizations in a field have a transactional relationship. These transactions can both be formal, in the shape of contracts or through professional associations, and informal, exemplified as personnel flows. By structural similarities, or equivalence, it is meant that organizations have a similar position in a network. When organizations similarly

are connected to other organizations they will be considered to be a part of an organizational field. According to DiMaggio and Powell (1983) organizational fields have a tendency to become homogenized. This means that organizations in the same field, rather than demonstrating variety, continuously become more similar through institutionalization. Prior to this, the organizational field must go through a structuration process consisting of four parts: (1) interactions within the organizational field increases; (2) interorganizational patterns and structures becomes more clearly defined; (3) an increase in the need for information processing; and (4) organizations become mutually aware of their each other as existing in a field.

2.2.3) Isomorphism

Once the structuration of organizational fields has taken place, the members will start to resemble each other through the process of *isomorphism*. This process is guided through coercive, mimetic and normative mechanisms (DiMaggio & Powell, 1983). The coercive mechanism occurs as a result of pressure from other organizations. As they in this case to a great extent depend on these organizations for their survival they initiate a change process towards isomorphism. The mimetic mechanism occurs when an organization experience a great deal of uncertainty. In the face of challenges and ambiguity isomorphism is brought forward by the process of organizations copying the solutions of other organizations in the field. The normative mechanism is a result of what DiMaggio and Powell (1983) express as *professionalization*. This can be suggested to be tendencies of occupations themselves becoming institutionalized. Through formal education and interaction with each other, people of similar occupation are guided by, or develop, rules or myths about what it constitutes to practice different occupations.

Although not referring to these mechanisms, Meyer and Rowan (1977) argue that isomorphism potentially can have significant consequences for organizations. As a result of isomorphism, organizations will incorporate myths, communicate adherence through external assessment criteria, and reduce instability by adhering to the myths. Through this change, organizations increasingly will be considered legitimate and thus secure their further existence. However, also crucial for the existence of the organization is their performance.

Although the organization that initiated the change most likely was motivated by a wish to improve performance, “*as an innovation spreads, a threshold is reached beyond which adoption provides legitimacy rather than improves performance.*” (DiMaggio & Powell, 1983, p. 148). This refers to the arguments made by Meyer and Rowan (1977) who claims that the process of internalizing myths frequently is in conflict with efficiency measures. In other words, companies in this situation are faced with a dilemma of prioritizing efficiency or legitimacy. Meyer and Rowan presents two solutions to this problem. First, organizations can decouple their formal structures from their actual activities. This means that although they change their formal structure to reflect a change towards the adherence of myths, the actual practice of organizations will not, or to a limited extent, be altered. Formal structures are in this sense referred to as the blueprint for the activities linked to the goals and policies of an organization. Second, by demonstrating that everything is in order, decoupling is made possible through *the logic of good faith*. Through the practices of avoidance, discretion, and overlooking, good faith in the organization is maintained (Meyer & Rowan, 1977). By being in good faith, the organization operates as if it has internalized myths, although the activities in practice may remain the same. As internal and external inspections and evaluation might uncover the uncoupling, “*organizations minimize and ceremonialize inspection and evaluation*” (Meyer & Rowan, 1977, p. 359).

2.2.4) Diffusion

In essence, Neo-institutional theory suggests that organizations are subject to myths or rule-like social facts that functions as a frame of reference for the structure and activities that are considered appropriate. As the organizations depend on legitimacy in order to exist they must demonstrate that they adhere to these myths and rules. Through mechanisms driving isomorphism it is suggested that this leads to a homogenization of organizations within a field. Thus, organizations change towards stability. A fundamental assumption behind this perspective is the diffusion model. Here change is suggested to occur in an initial source of energy, such as the organization innovating towards efficiency improvement described above, before spreading throughout the organizational field. However, not only does the innovation spread, it is adopted as exact copies as the initial innovation. Due to the mechanisms of isomorphism organizations will try to prevent that the original innovation change in order to acquire or maintain stability and in that way appear legitimate. However, as internalizing

what is considered institutional is more likely to decrease, rather than increase, efficiency organizations face a conflict between legitimacy and performance. As the latter also is vital for existence, organizations might try to decouple their activities from their formal structure. As a result, although organizations resemble each other in terms of formal structure, there might exist variations in how they perform their activities in practice.

2.3 Scandinavian Institutional Theory

While the new institutional theory are focused on questions such as “*what makes organizations so similar?*” (DiMaggio & Powell, 1983, p. 147), the Scandinavian institutional theory instead might ask “*how and why do organizations change?*”. According to Scandinavian institutionalism, the answer can be found by describing organizations as a combination of stability and change. A cornerstone in this perspective is the concept of travelling ideas. Here ideas can be understood as “*images which become known in the form of pictures or sound (words can be either one or another)*” (Czarniawska & Joerges, 1996, p. 20). In essence, the concept describes how change occurs as ideas are objectified in a local organization before travelling to other organizations where they are translated to fit their specific context. Here translation can be understood as “*displacement, drift, invention, mediation, creation of a new link that did not exist before and modifies in part the two agents*” (Citation by Latour in Czarniawska & Joerges, 1996, p. 24). Due to translation the ideas are objectified differently essentially recreating new ideas which continuously circulate between local and global time and space. This is in contrast to the model of diffusion presented along with the new institutional theory in the previous subchapter. Here ideas, or innovations, are seen to spread untouched in their original form. In the model of translation, however, “*the spread in time and space of anything – claims, orders, artefacts, goods, is in the hands of people; each of these people may act in many different ways, letting the token drop, or modifying it, or deflecting it, or betraying it, or adding to it, or appropriating it*” (Citation by Latour in Czarniawska, 2008, p. 88). The following parts will present what is meant by this while describing some of the theory’s most characteristic aspects.

2.3.1) An Idea is Objectified

Prior to traveling, however, ideas have to materialize. This means that the idea not only exist as a thought in someone's head, but that they have taken the form as objects or actions (Czarniawska & Joerges, 1996). But where did the idea come from in the first place? According to Czarniawska and Joerges "*the circumstance in which an idea arose (...) are usually unknown*", at the same time "*ideas do not arrive out of the blue: one can argue (...) that all ideas circulate most of the time, at least in some places.*" (1996, p. 26). In other words, ideas should not be looked at as new born seeds suddenly setting roots in organizational minds. Instead, it could be said that they are continuously fleeting in the wind like pollen, where only a fraction will drop into fertile soil in which ideas can materialize into something more significant.

But if this is the case, how do certain ideas appear over others? In response to this, attention is seen to play a significant part when it comes to the discovery of ideas. According to Czarniawska and Joerges (1996) attention is a social product in the sense that our perception is influenced by our environment and prior experiences. Furthermore, they also suggest that ideas that are related to an exciting or dramatic problem have a greater chance of being discovered. These problems are claimed to occur as organizations experience a "*difference between a desired state and a present state.*" (Sahlin-Andersson, 1996, p. 71). In other words, ideas are more likely to be discovered when they are related to a problem that an organization is currently facing. However, in order to be selected and eventually materialize, Czarniawska (2014) claims that there must be friction between the traveling ideas and the frame of reference in which it is perceived. This friction creates the energy necessary for the movement and translation of the idea, both locally and translocally. Czarniawska and Joerges (1996, p. 24) refers to Latour who presents friction as "*displacement, drift, invention, mediation, creation of a new link that did not exist before and modifies in part the two agents*" (1994, p. 32). Stated differently, discovery does not only create a new idea, it can also simultaneously re-arrange an actor's worldview. This finally leads us back to materialization. The ideas that have "*entered the chain of translations acquire almost physical, objective attributes; in other words, they become quasi-objects, and then objects.*" (Czarniawska & Joerges, 1996, p. 32). Ideas can be objectified in several ways. One way is to turn them into what Czarniawska and Joerges calls linguistic artifacts (1996). This can for example be in the form of labels and

metaphors. They also argue that an idea can be objectified by design through images and graphics. Either way, once objectified, an idea is ready for its journey.

2.3.2) *An Idea Travels*

What does it mean that an idea travels? In order to explain this, Czarniawska and Joerges (1996) introduce the notion of local time/space, and global time/space. By local they refer to specific organizations, while global is presented as “*a hugely extended net work of localities*”, (...) “*which should really be named “translocal,” in the sense of interconnecting localized time/space*” (Czarniawska & Joerges, 1996, p. 22). The previous part described the objectification of an idea, which occurs at the local level. When an idea travels, it means that it is disembedded from localized time/space and re-embedded in various other localities. The idea has become translocalized in the sense that it has travelled from one organization to others. On the other hand, “*no idea or action is completely a copy from other organizations, as organizations pick up ideas and translate them into something that fits their own context*” (Sevón, 1996, p. 66). Scandinavian institutional theory suggests that this translation process is influenced by the mechanisms of fashion and institutionalization.

As pointed out earlier, ideas will not materialize if there is no energy causing it to move through the translation process. When it comes to the translocal journey however, “*even ideas that have materialized will not move if no one demonstrates an interest in them and does not want to translate them to their own needs.*” (Czarniawska, 2014, p. 111). Related to this is the concept of fashion, which can here be understood as an expression of modernity. As people are curious and attracted to novelties fashion becomes instrumental in the travels of ideas. By guiding our attention “*fashion introduces order and uniformity into what might seem an overwhelming variety of possibilities*” (Czarniawska & Joerges, 1996, p. 35). However, this does not mean that all organizations adhere to the same fashionable ideas. In the previous part it was argued that ideas were more likely to be discovered when connected to a problem an organization was experiencing. Sahlin-Andersson (1996) suggests that when a local organization experiences problems it is a result of them matching their situation with that of organizations with which they can identify. Attempting to achieve the same as those that are perceived successful, organizations might try to imitate their models and practices (Sevón,

1996). As I mentioned in the previous subchapter, this can be organizations that are connected directly or indirectly in what DiMaggio and Powell (1983) refers to as organizational fields. According to Czarniawska and Joerges these fields, or time-and-space-collectives, “*constantly selects and de-selects among a common repertoire of ideas plans for action which ideas and practices are adopted.*” (1996, p. 38). Consequently, we might expect organizations in the same field to become homogenous. However, as previously pointed out, due to translation, organizations will never be able to completely reproduce the idea that they are trying to reproduce. Instead, they initiate in what Sahlin-Andersson (1996) refers to an editing process. Similar to translation, editing is based on the thought of ideas, or in this case models and practices, changing their characteristics whenever it is picked up by an organization.

The discussion above illustrates one of Scandinavian institutional theory’s core characteristics: a suggested dynamic relationship between stability and change, institutions and fashion. On the one hand, fashion generates change as it brings along new ideas and practices. Some are adopted, while others are not. Those that remain, as fashions come and go, acquire institutional status (Czarniawska & Joerges, 1996). On the other hand, these institutions represent stability, in the sense that they are preferred over changing fashions. However, institutionalization also creates room for creativity and experimentation due to the economy of effort (Czarniawska & Joerges, 1996). This can potentially threaten existing institutions as new ideas are generated. Based on this reasoning, Scandinavian institutional theory claims “*that fashion give birth to institutions and institutions make room for other fashions*” (Czarniawska & Joerges, 1996, p. 39). Consequently, institutionalization and fashion can be seen as complimentary and interdependent mechanisms when it comes to the travels of ideas.

2.3.3) An Idea is Enacted

The previous parts described how an idea is objectified in local time/space, before transgressing these barriers, disembedding, and travelling translocally. Here it circulates among numerous other ideas before landing, re-embedding, in various other localities. Once again in local time/space the idea will be translated into action. Although this suggests that the

idea precedes action, this is not necessarily always the case. According to Czarniawska and Joerges an idea can be used “*either to give a name to past and present action or to initiate a new set of actions*” (1996, p. 40). In other words, when an idea is translated by the organizations it can lead to action, but it might also be used to characterize what an organization has done or is currently doing. In this case, an idea is put onto action in the sense that the organization acts first and then discovers an idea that fits. In order for an idea to be put into action however, Czarniawska and Joerges (1996) argues that it must be reinforced by images of action, and eventually plans for action before it becomes a deed. This means that organizations must be able to conceive how the idea can be put into practice while at the same time developing plans and motivation to follow through. According to Czarniawska and Joerges, “this magic moment when words become deeds is the one that truly deserves to be called materialization” (1996, p. 41).

However, this does not necessarily conclude the journey of the idea. Other organization might show interest, which potentially can turn the idea into a fashion. Organizations following fashion however, are unable to reproduce it perfectly. Instead, the idea is translated to fit their specific context which leads to several variations of the idea. In this way, fashion is constantly evolving, eventually replacing old ideas with new. The ones that remain, in spite of changing fashions, acquire institutional status which again generates new ideas that can travel. In other words, the whole process continuously repeats itself: “ideas into objects, and then into actions, and then into ideas again”. Consequently, Scandinavian institutional theory presents organizations as existing in a never-ending process of becoming, operating in the tension between heterogenizing and homogenizing forces.

2.4) Summary - Arriving at the Frame of Reference

In this chapter, the objective was to develop a frame of reference that would be applied for the analytical purpose in this thesis. Following this, I described and discussed the three elements that the frame of reference is constituted by: the concept of sustainability performance measurement, the new institutional theory and the Scandinavian institutional theory. Although I briefly argued for the relevance of my conceptual and theoretical choices, it might be useful, both for myself and the reader, to develop an illustrative model of the framework. In the

figure below, I have made an attempt to illustrate the connection between the elements within the frame of reference. Furthermore, I have also tried to illustrate how the frame of reference is connected to the problem statement and the research questions.

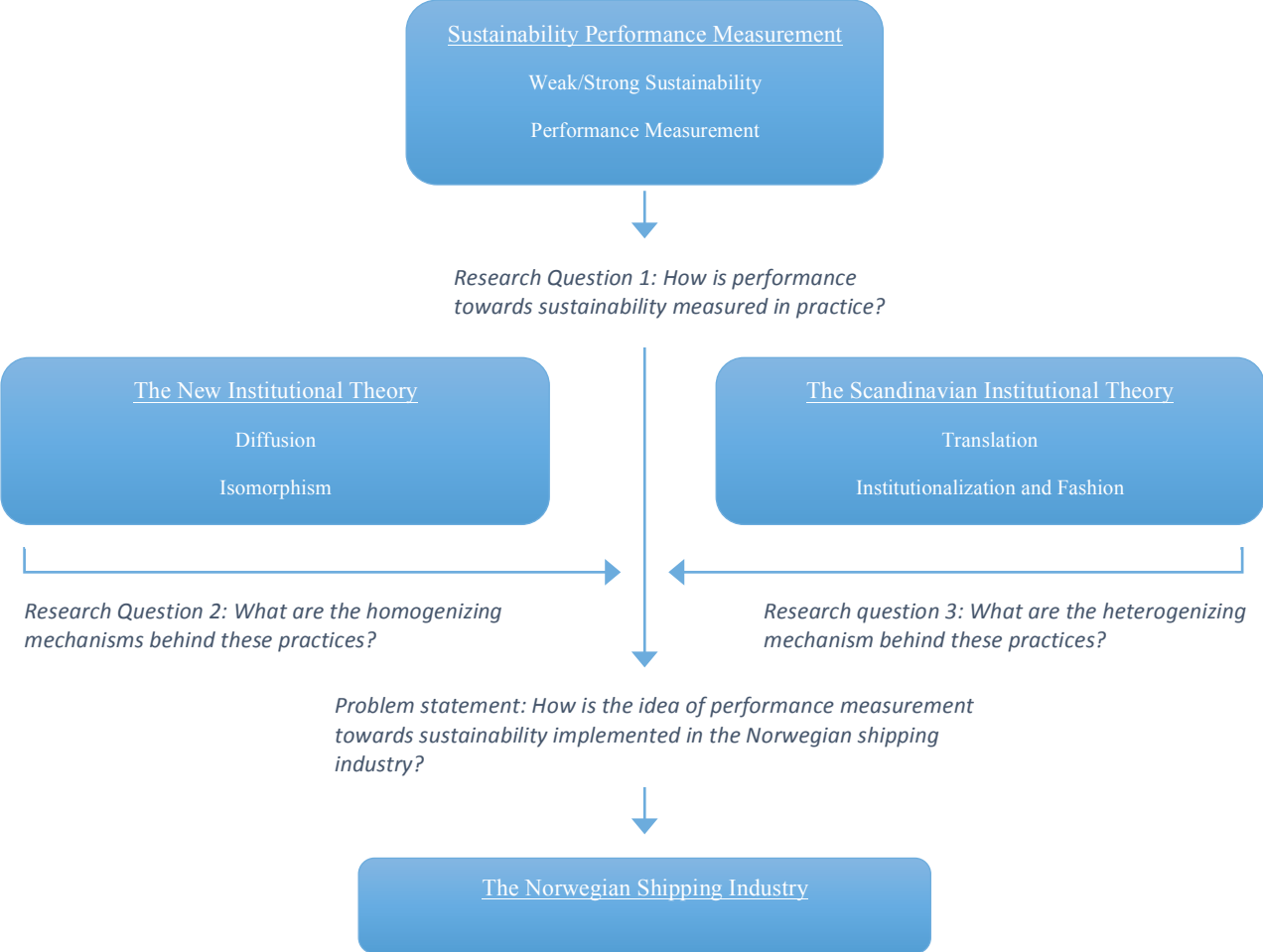


Figure 1: Making the Connections

In the first subchapter, I introduced the concept sustainability performance measurement. Here I discussed the meaning of the two elements the concept consists of: sustainability and performance measurement. Following this, I reflected on challenges associated with combining the two concepts before I presented some approaches as to how performance towards sustainability can be measured in practice. As that the fundamental purpose behind this thesis is to explore how sustainability performance measurement is done in practice, I considered it natural to include perspectives from literature in my frame of reference. Although the practices I come across Norwegian shipping industry might not be exactly the

same as any of the approaches I have presented, I expect that the general presentation that is provided in this chapter will prove useful when it comes to analyzing my findings. In the model above, you can see the connection between the concept and the research question. The vertical arrow moving from sustainability performance measurement down to the Norwegian shipping industry is meant to indicate the implementation of the concept.

However, it is also evident from the model that the implementation of the concept, or the idea, is influenced during its implementation. Connected to my second research question and the potential existence of homogenizing forces, I presented the new institutional theory in the second subchapter. Here, I focused on the meaning of institutions and organizational fields, as well as the concepts of isomorphism and diffusion. In this perspective, the implementation of sustainability performance measurement in the Norwegian shipping industry, is suggested to occur through the institutionalization of organizational fields. This is driven by the coercive, mimetic and normative mechanism, which in theory will homogenize the industry and its practices. This is facilitated by the assumptions in the diffusion model, where it is suggested that implementation can occur without the process causing any variations in the original practice. In the model you can see how the horizontal arrow moving from left to right suggest the potential influence of homogenizing forces during the implementation of sustainability performance measurement in the Norwegian shipping industry.

On the other hand, my third research question recognizes the potential existence of heterogenizing mechanisms that might influence the implementation of sustainability performance measurement in the Norwegian shipping industry. Although, the Scandinavian institutional theory recognizes the existence of homogenizing forces, it also suggests that these forces are in a dynamic relationship with heterogenizing forces. On the one hand, organizational fields are homogenizing through institutionalization. On the other, fashion constantly circulates new ideas, which both breaks down and creates institutions in its process. Furthermore, the Scandinavian school problematizes the notion of ideas diffusing into organizations. Instead, they argue that ideas are implemented through translation according to the specific needs or contextual factors of the organizations. Even if an organization imitates another with which it can identify, translation, or editing, will never

leave the implemented idea untouched without any variations. Thus, based on the Scandinavian institutional theory, the implementation of sustainability performance measurement in the Norwegian shipping industry might occur as the result of both homogenizing and heterogenizing forces. Although I might come across many of the similar practices, there should at least be slight variations upon closer scrutiny. Based on this frame of reference I will address the research questions and eventually the problem statement. However, before I do this it is necessary to develop a methodological approach connected to how I will collect the data that will be analyzed. This is the objective of the following chapter.

Chapter 3 - Methodology

This chapter describes the process that was chosen in order to answer the problem statement and achieve the objective of this thesis. More specifically, the chapter will present the decisions that were made connected to research design, data collection methods, selection of informants, and the approach related to organization and analysis of empirical data. Following this, the chapter discusses the quality of the research along with reflections on ethical aspects of the thesis.

3.1) Research Design

In many ways, the design of the research is like the recipe that you would rely on when preparing a complicated dish for the first time. It provides a description of the different steps that must be taken in order to end up with the result that you have aimed for. More specifically, the research design involves all the stages in the research process after the purpose and research question(s) have been set (Gripsrud, Olsson, & Silkoset, 2010). In other words, the design of the research depends on what we already know and what we want to find out. Based on this, Gripsrud et al. (2010) argue that the researcher can choose between an *explorative*, *descriptive* or *causal* design. Although I have a general understanding of sustainability performance measurement, I have no knowledge or experience of this concept in the context of the Norwegian shipping industry. Applying the insights from Gripsrud et al. (2010), an explorative design appears to be the most appropriate alternative. More specifically, this thesis will be designed as a case study. This approach has much in common with the problem statement in the sense that *“the case study looks in depth at one, or a small number of, organizations, events or individuals, generally over time”* (Easterby-Smith, Thorpe, & Jackson, 2012, p. 54). Furthermore, (Yin, 2013, p. 2) argues that the case design is especially relevant when *“(1) the main research questions are “how” or “why” questions; (2) a researcher has little or no control over behavioral events; and (3) the focus of study is a contemporary (...) phenomenon”*

In reality, it could be more reasonable to say that *a* case study design has been chosen, rather than *the* case study design. The reason for this is that a case study can be designed in several ways. According to Easterby-Smith et al. (2012), the characteristics of the *a* case study design

will vary according to the epistemological standpoint of the researcher. A constructionist could for example prefer the approach by Stake (1978) who argues against generalization and for the design to emerge throughout the research. A positivist, on the other hand, would perhaps be more likely rely on suggestions by Yin (2013), which to a greater extent focus on the validity and reliability of the study. At the same time, Yin acknowledges the variations that exist when it comes to case studies and does not exclusively appeal to the positivist researcher. Although his approach certainly is methodological, he offers a wide array of suggestions that can be utilized across epistemological orientations. In addition to this, he offers a detailed approach for how this can be done in practice, which is very useful for an inexperienced researcher. As a result, this thesis will be designed as a case study inspired by Yin (2013).

When designing a case study in accordance to Yin you have to make a decision along two dimensions. On the one hand, you have to consider whether you will have a single-case or a multiple-case design. On the other, you have to decide if it will contain a single-unit of analysis or a multiple-unit of analysis. Not only are these choices related to the problem statement of the research, they also depend on the theoretical frame of reference (Yin, 2013). Based on the problem statement of this thesis the Norwegian shipping industry presents itself as the case of interest. In other words, this thesis has been designed as a single-case study.

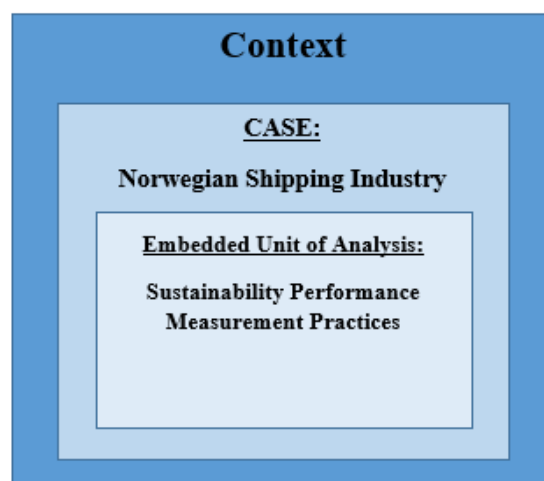


Figure 2: Research Design - Embedded Single-Case Study

The next question is whether it should be holistic, with one unit of analysis, or embedded, with multiple unit of analysis. This thesis will look at how the idea of sustainability performance measurement has been implemented in the Norwegian shipping industry. As a result, embedded in the single case study are sub-units in the form of these practices. More specifically, I will examine two industry practices, as well as two company practices.

3.2) Methods of Data Collection

One of the most prominent characteristics when it comes to case studies is the fact that the researcher wants to gather as much information as possible about the case(s) that is being studied (Christoffersen, Johannessen, & Tufte, 2011). When collecting this information, a case study design allows the researcher to apply a wide array of different methods. The method that is most suitable to a large extent depends on the problem statement and the purpose of the research (Christoffersen et al., 2011). Earlier it was pointed out that the problem statement of this thesis is of an explorative nature. The objective is to *understand* rather than *measure* the phenomenon in the context of our study. When this is the case, Gripsrud et al. (2010) argue that qualitative methods usually are preferable. What characterizes these methods is the fact that they collect information through *language*. According to Easterby-Smith et al. (2012, p. 126) this approach enables the researcher to discover “*the views, perceptions and opinions of both individuals and groups through the language they use; the main method to achieve this is the in-debt interviews*”. As this was seen to be of a significant importance when it came to addressing the problem statement, qualitative methods, and specifically in-debt interviews, were chosen in order to collect primary data. Throughout the data collection process however, secondary data resources were also used.

3.2.1) Documentation

In order to get an overview of sustainability performance measurement in the Norwegian shipping industry a natural starting point was to examine information and reports available on the websites of the Norwegian Shipping Association and different shipping companies. In addition to general information regarding the focus on sustainability in the industry, there were also some specific examples of how it could be measured in practice. These appeared in

various forms of reports associated with sustainability, or in some cases more specifically with the environment or corporate social responsibility. Although the reports were helpful as practical examples of how performance measurement associated with sustainability could be done in practice, it did not mean that they would reveal the entire picture. Yin (2013) warns against relying too much on secondary data sources, such as documentation, as they might be biased. This could for example mean that information is published according to the impression that the publisher wants to create. In the initial stage of the data collection the various forms of documents were used to develop a basic understanding of sustainability performance measurement in the Norwegian shipping industry. What aspects did they focus on and how were they measured in practice? The insights that were gained served as a foundation on which to develop the in-debt interviews, which is the subject of the following part.

3.2.1) In-debt Interviews

According to Christoffersen et al. (2011) interviews are the most frequently applied method within qualitative data collection. The advantage of conducting interviews is the possibility to get firsthand descriptions about the phenomenon that is being studied. Furthermore, as it offers flexibility it might also enable informants to provide insights on aspects that the researcher might not have thought about. This could be particularly important in an explorative research like this thesis, where the researcher does not possess great knowledge on the area that is being studied. As interviews, to a greater extent than for example surveys, allow the informant to influence what he or she communicates, it is especially suitable when the purpose is to gain insight in the experiences and perceptions of the informant (Christoffersen et al., 2011).

However, the degree of influence that the informant will have depends on the structure of the interview. Connected to this, Easterby-Smith et al. (2012) distinguishes between three levels of structure. In a *structured* interview, the interviewer will rely on topics and questions that have been developed prior to the interview in the shape of a questionnaire. The job of the interviewer in this case is to ask the questions and write down the reply, or cross off the alternative, that is communicated. Furthermore, as the order of the questions usually is

predetermined, there is less flexibility compared to less structured interviews. In an *unstructured* interview, on the other hand, the interviewer will usually not have developed an interview guide beforehand. Although the overall topics and themes might have been set, the interview will to a greater extent resemble an informal conversation. Even though it could be argued that an unstructured interview would be appropriate for the explorative nature of this thesis, there are also certain pitfalls associated with this approach. While you may well end up collecting a great deal of information, Easterby-Smith et al. (2012) warns that a significant amount of this information could turn out to be irrelevant for your research. In the case of this thesis, that would be a significant risk due to the amount of resources involved with conducting the interviews. Furthermore, even though the thesis is of an explorative nature and the researcher did not possess extensive knowledge on the area, the information from secondary data sources provided some opportunities to structure the interviews. As a result, the structure that was chosen for the interviews was what Easterby-Smith et al. (2012) refer to as *semi-structured*. This means that interviews were developed prior to the interviews. Although they contained some specific questions related to the secondary data, they for the most part consisted on general themes that the informant was asked to elaborate on (refer to Appendix I). Throughout the interview the focus was on continuously reflecting on the information that was provided and asking follow-up questions on things that were interesting or unclear.

3.3) Selection of Informants

In the part about data collection methods it was established that primary data was collected through the use of in-debt interviews. Following this, it was necessary to consider several aspects connected to the application of the method. How many interviews did I need? How did we select informants? How were they recruited? These questions are the foundation of the following parts.

3.3.1) Sample Size

For students applying in-debt interviews in their projects, there are few questions that are more frequently asked than “*how many people do I need to interview?*” One of the reasons that this questions is raised over and over again could be due to there being no such thing as a

correct amount of informants. The number of informants that is necessary will to a great extent vary according to the problem statement and the purpose of the study (Christoffersen et al., 2011). In this thesis, the Norwegian shipping industry has been chosen as the case of the study. In order to gain as much information as possible about sustainability performance measurement in this industry it would of course be ideal with a significant amount of informants. At the same time, this would require an amount of resources way beyond those available to me, the researcher. On the one hand, you could claim that I should have foreseen this and made appropriate adjustments to the project. On the other hand, it could be argued that it is still possible to address the problem statement of the thesis even though you are not able to collect information from all the informants that might have something to say. After all, the purpose of this thesis was never to generalize the findings, but to explore the phenomena of sustainability performance measurement in practice. In this thesis, language data was collected from five informants.

3.3.2) Selection Strategy

With a smaller amount of informants, it obviously becomes even more important that those who have been included are of relevance. Whether they are relevant or not depends on their ability to provide information and insights related to the purpose of our study. Rather than random selection, which usually is the approach in quantitative research, qualitative research usually applies the concept of *strategic selection* (Christoffersen et al., 2011). Through strategic selection, the researcher first defines the target group, or the people that are relevant to the study. Following this, the next step is to select people from this group that will function as informants. When it came to selecting informants for this thesis, the target group was identified to be people within the Norwegian shipping industry. More specifically, people associated with the NSA or their member companies. Although there might be actors within the industry that are not members in the NSA, it was assumed that informants within this group would be of high relevance to the thesis. However, it was clear that not every person within the NSA or their member companies would be able to provide relevant information. Consequently, the target group became limited to the people within this group that was directly involved with practices associated with sustainability performance measurement.

Based on the above we could say that a criteria-based strategy was applied for selecting informants. Through this strategy, informants are selected based on certain criteria, or characteristics (Christoffersen et al., 2011). Once the abovementioned characteristics were applied, the list of potential informants significantly decreased. Starting off with the entire shipping industry, the potential informants were now limited to a few people involved with sustainability in the NSA and in companies that clearly practiced sustainability performance measurement. Whether the companies were practicing this or not was based on what they were publishing on their website. The danger of relying too much on information of this nature has already been pointed out. However, contacting all the members of the NSA, close to 150 companies, would have been beyond the time available. Resources were also an issue when it came to selecting potential informants from the group that satisfied the criteria. More specifically, it was decided to approach company along the south and east coast of Norway in order to make the most out of the budget available for travelling. Thus, there are also elements of the *convenience strategy* in the selection strategy that was applied. According to Christoffersen et al. (2011), this is the least favorable strategy as it can hurt the quality of the research. At the same time, as already pointed out, the selection strategy has to consider not only the problem statement and the purpose of the study, but also what is practically possible.

3.3.3) Recruiting Informants

Although it can be challenging to arrive at a target group that is relevant for your study, it can also be difficult to actually *recruit* informants for in-debt interviews. Both the NSA and the member companies are of a significant size and it soon proved difficult to reach potential informants. The approach that was applied was to call the main offices and either ask for specific employees or to be transferred to people that might be relevant for the project. Prior to the initial contact a text had been written about the topic and purpose of the thesis, which was communicated in the same way to all potential informants. After an informant had agreed to participate in an interview, a date was set and he or she received more information on e-mail. Prior to the meeting a list of themes was sent to the informants in order for them to get an impression of the things that was relevant for the thesis.

3.4) Approach to Data Reduction and Analysis

The purpose of the data collection methods that were chosen was to gather information related to the problem statement and research questions of the thesis. This resulted in a significant amount of data that would eventually be analyzed through the theoretical frame of reference. Prior to this, however, it was necessary to make the empirical data more accessible for analysis. In other words, the amount of data had to be reduced and organized in some way or another. This subchapter will elaborate on how this was done and the approach that was applied for the analysis.

3.4.1) Organizing Empirical Data

In contrast to quantitative research, there are no ultimate blueprints when it comes to organizing empirical data. However, there are some ways to organize qualitative data that are more common than others. According to Mason (2002) these are:

- Cross-sectional and categorical indexing
- Non-cross-sectional data organization
- The use of diagrams and charts

Cross-sectional and categorical indexing means that the empirical findings are organized according to categories or labels. With this approach, the entire data set is seen through the same perspective. In contrast, non-cross-sectional data organization does not involve the use of categories or labels. Instead, the researcher focuses on individual parts of the information and their respective characteristics. The last approach is more or less self-explanatory and involves organizing findings in diagrams and charts. Although these approaches offer different techniques when it comes to organizing empirical data, they are not “*mutually exclusive alternatives and in practice you are likely to want to use elements of all three.*” (Mason, 2002, p. 147). In order to organize the information that has been collected for this thesis, I initially wanted to apply the non-cross-sectional organization of my findings. The reason was that I wanted the information to be presented according to what characterized their

respective practices. However, this soon proved difficult and following a little frustration and a lot of time, I made the decision to apply the same categories across all the practices.

3.4.2) Analyzing Empirical Data

After the data has been organized, it is time to *analyze* the information that has been collected. When you are analyzing the data the objective is to make sense of the information and give it meaning. It is based on this analysis that the researcher addresses the problem statement. According to Yin (2013, p. 132), “*analyzing case study evidence is especially difficult because the techniques still have not been well defined*”. At the same time, a researcher that tries to analyze his or her findings without having developed a strategy will in the best case scenario make the process very difficult, and in the worst case arrive at incorrect conclusions. In spite of the associated difficulties, Yin points to four general strategies that can be applied in order to analyze the case study evidence:

- Relying on theoretical propositions
- Working your data from the ground up
- Developing case descriptions
- Examining rival explanations

The strategy that was chosen for this thesis was to analyze the finding by relying on theoretical propositions. More precisely, I will apply the concepts and theories that were included in the frame of reference that I presented in Chapter 2.

3.5) Reflections on Quality and Ethics

In quantitative research, the quality refers to the reliability and different forms of validity of the study. In qualitative research on the other hand, it is more relevant to apply the criteria of *dependability*, *trustworthiness*, *transferability* and *confirmability* when evaluating quality (Guba & Lincoln, 1989). This is the subject of the following subchapter along with reflections on ethics.

3.5.1) Dependability

The dependability criteria in qualitative research are in many ways parallel to the reliability criteria in quantitative research. In essence, both are concerned with evaluating whether the same findings and conclusions would be reached if the research was repeated. In order to demonstrate this it is important that the researcher provides a detailed insight into how data has been collected, used and analyzed (Christoffersen et al., 2011). However, due to the nature of qualitative research it is not feasible to do this in the same manner as in quantitative research. The qualitative researcher is usually much more involved throughout the process, which leads to the information being filtered through his or her worldview. As a result, the research can be *repeated*, but not *replicated* (Yin, 2013). In order to enable someone to repeat this research, the focus has been throughout the thesis been to describe and elaborate on all the decisions that have been made along the way.

3.5.2) Trustworthiness

The trustworthiness of research refers to what extent the different approaches and findings reflect the purpose of the study and whether it is a good reflection of reality (Christoffersen et al., 2011). One of the aspects that have to be considered is whether the information that has been collected has been interpreted in the appropriate way. Transcribing the interviews made it possible to examine what the informants had said word for word. However, what they *said* is not necessarily the same as what they *meant*. Consequently, the information was at a risk of being interpreted in a way that did not reflect reality. In order to prevent this, the empirical chapter was distributed to the respective informants so that they could confirm the way that their response had been presented.

However, the main concern when it comes to the trustworthiness of this thesis is whether the appropriate method of collecting primary data has been applied. Although in-debt interviews may be useful in order to get an insight into the experience and perceptions of relevant actors, there may be situations when this is harder to achieve through language data. According to Czarniawska and Sevón this especially applies to periods of stability when “*people take their*

realities for granted” (1996, p. 1). Although it could be argued that this thesis examines change in the sense of looking at the implementation of sustainability performance measurement, it can still be challenging to gain the level of insight that we want. This is particularly relevant when Scandinavian institutional theory has been included in the theoretical frame of reference – a theory that focuses on micro-processes and the role of individuals in the process of translation. Traditionally, observation has been associated as a method that is suitable for this purpose (Easterby-Smith et al., 2012). This method enables the researcher to observe people in action and how they interact, which potentially can generate insight beyond what is possible through language data. However, in order to apply this method, you have to gain access to the context that you wish to observe. This proved to be a difficult thing in the case of this thesis as the companies, although happy to contribute, were not too keen on having an outsider observing for example meetings and reviews. Furthermore, it would have required a significant amount of resources to be able to conduct these observations as it would have demanded extensive travelling and housing costs. This was due to the fact that the selected informants were located at various different geographical locations. Nonetheless, the fact that observations were not applied as a method for data collection unfortunately hurts the quality of the research.

3.5.3) Transferability

Transferability is concerned with whether the research generates insights that can be applied in contexts other than the one that was being studied. According to Christoffersen et al. (2011), the objective of all research is to generate knowledge and understanding beyond the information that was collected. In other words, the question of transferability is an important one. At the same time, it is also a difficult one. On the one hand, I could say that the transferability of how the idea of sustainability performance measurement is implemented in the Norwegian shipping industry, might not be so easily transferable to other industries, or contexts. Here I could argue for the uniqueness of the Norwegian industry in terms of for example its history and structure. On the other hand, the Norwegian shipping industry is not an isolated entity. Indeed, as I will present in the next chapter, the Norwegian industry would never have been able to become as big as it is today if it did not have access to an international market. Thus, the Norwegian industry is only a part of much more significant global shipping industry, consisting of a network of several other national industries. In other

words, there certainly are opportunities to transfer the research itself. Only then could you truly argue whether the findings are transferable or not.

3.5.4) Confirmability

The confirmability of a research is connected to the objectivity of the results have been generated. According to Christoffersen et al. (2011), one way to judge confirmability is whether the findings can be supported by previous research. As far as I know, there does not exist any previous research that is directly comparable to mine, which makes this difficult. Thus, it might be more appropriate to evaluate the confirmability of this thesis based on the second suggestions made by Christoffersen et al. (2011). Similar to the dependability of the research, this involves providing detailed description of the entire research process. On the one hand, this enables the reader to make evaluations of the choices that was made. On the other, it allows for the findings to be confirmed by those who want to repeat the study.

3.5.5) Ethical Reflections

The focus throughout the work with this thesis has been on considering the ethical aspects of the choices that was being made. Connected to this, the general guidelines for research ethics provided by The Norwegian National Research Ethics Committees were applied. These are based on the principles of respect, good consequences, fairness and integrity (NFK, 2014). As a part of this, the project was registered at The Norwegian Centre for Research Data (NSD) in order to get verification from an external authority that the methods and handling of personal information would be done in the correct way (refer to Appendix II). This, among other things, involved a guarantee that only personal information of an indirect nature would be published and that all data material would be anonymized at project-end. Prior to the interviews, the informants received a concentrated form of this application where they were made aware of how the data would be treated and their freedom to withdraw their participation at any time. As earlier mentioned, the informants were also given a chance to see how the information from the interviews had been interpreted and presented in the empirical chapter. Before the empirical chapter, however, I will give a short presentation of the Norwegian shipping industry.

Chapter 4 - The Norwegian Shipping Industry

So far, I have been throwing around the term *the Norwegian shipping industry* as if its meaning is common knowledge among each and everyone of us. After all, it is quite obvious that the shipping industry is constituted by companies that are connected to shipping activities. However, it gets slightly more complicated if we consider the question, *what is meant by shipping activities?* Furthermore, which of these activities is the Norwegian shipping industry involved with? In this chapter, I will give a general presentation of the historical development of the Norwegian shipping industry as well as the activities that they perform.

4.1) Early history

The history of shipping in Norway goes back hundreds of years and since the middle of the 19th century they have been one of the largest actors on a global scale. In 1885, the Norwegian fleet was the third largest and employed around 60.000 people – a significant achievement considering the country's relatively small size (NSA, 2014c). On the one hand, it is perhaps natural that an industry relying on oceans emerged in a country with one of the longest coastlines in world. On the other, it was not until the liberalization and growth of the economy during the 19th century that Norway emerged as a major actor. According to Harlaftis and Theotokas (2010, p. 17)

The success of the Norwegian shipping industry during the nineteenth century is related to the “collective mobilization of resources” at the local level, i.e. the partrederi system, according to which, members of the local community provided resources for the construction and operation of a ship, becoming shareholders of the shipowning company and receiving the resulted profits.

As Norway itself far from generated enough work to be done to enable a world-leading shipping nation, the Norwegian industry expanded internationally. Due to the fact that

Norwegian shipowners offered shipping services that were relatively cost-effective they were able to capitalize on the growing international trade.

4.2) A changing industry

A reason for the growth in international trade was largely due to the industrial revolution that was occurring at the time. However, this in many ways became a double-edged sword for the Norwegian shipping industry. Not only did the industrial revolution revolutionized society's means of production, it also revolutionized its means of transportation. The Norwegian fleet, which had developed a competitive advantage in sailing, were slow to make the transition to steam (Harlaftis & Theotokas, 2010). Making this transition necessitated a significant amount of capital, which was not easily available for the minor shipowners scattered up and down the Norwegian coast. This eventually led to a decline in shipping that was sailed based, and the emergence of new companies. According to Wicken (2009, p. 44),

The shipping companies were established in urban areas, mostly around Oslo and Bergen. Many companies were not closely incorporated into local communities, but emerged from interaction between individual Norwegian entrepreneurs and large international corporations.

This eventually led to heavy investments, which soon would lead to the return of Norway as one of the largest shipping nations in the 1920s. What perhaps characterized this development the most was Norway's expansion within the segment of bulk shipping (Harlaftis & Theotokas, 2010). With heavy investment in tankers, their market share grew steadily up until the 1970's and the occurrence of the shipping crisis (NSA, 2014b). However, bulk shipping was not the only segment that the Norwegian shipping industry was involved with. According to Harlaftis and Theotokas (2010) this was also one of the reasons that the Norwegian industry remained one of the largest in the world in spite of the crisis.

4.3) A Wide Array of Activities

Connected to the development presented above, the Norwegian Shipowner's Association (NSA) has been an important facilitator. Since its establishment in 1909, the NSA has promoted the Norwegian shipping companies' interests related to areas such as politics, trade, innovation and safety (NSA, 2014b). Today, the NSA consists of close to 150 members, representing more or less all segments of the Norwegian shipping industry and its wide spectrum of activities. Here, the main segments are deep sea shipping, offshore contractors, offshore services, short sea shipping, and subsea contractors. Deep sea shipping represents activities associated with transporting internationally over greater distances. Within this group we have oil tankers, bulk carriers, vehicle carriers, chemical tankers, gas carriers and cruise traffic (NSA, 2014d). Offshore contracting, as the name implies, is connected to the offshore industry, more specifically drilling and floating production. Here they are focused on *“floating installations such as semi-submersible and jack-up rigs, accommodation platforms, drilling ships and production vessels”* (NSA, 2014d, in "offshore contractors"). Also involved with the offshore industry are offshore services. This mainly involves activities on the seabed, more specifically *“supply services and anchor handling, seismic, cable and pipe-laying”* (NSA, 2014d, in "offshore services"). As for short sea shipping, this involves transportation between ports within Norway. However, it can also involve transportation between ports within a single continent. Furthermore, short sea shipping also involves passenger ships. Finally, the offshore contracting segment involves activities underwater, such as the development and maintenance of production facilities, floating as well as fixed. However, in addition to all of the segments and activities presented above, the largest companies are often involved in a great deal of supporting activities. In other words, the Norwegian shipping industry consists of various companies that are specialized in a wide array of activities.

4.4) Occurring Challenges

In this chapter, I have given a short presentation of the Norwegian shipping industry – its historical development as well as some challenges it has been faced with. As mentioned in the introduction, it appears that the industry, in Norway as well as globally, is in a process of change. Perhaps the most substantial change in recent time has been the reduction in oil-prices, which has had significant effect on the shipping industry. Although far from all Norwegian shipping companies are directly related to the oil industry, few have been able to escape the ripple effects that the low conjuncture has had in the global economy. Another

challenge, and perhaps most relevant for the topic of this thesis, is that the industry is facing increasing demands to take sustainability into consideration. Connected to the Paris Agreement this is especially related to the emission of greenhouse gasses. Although the shipping industry's contribution to the global CO₂ emission did not represent more than 2.7 per cent in 2013 (NSA, 2013), the International Maritime Organization are currently in the process of creating regulations towards reducing emissions. Connected to this, the Norwegian shipping industry has seemingly taken a proactive role. This was indicated by the NSA who stated that they wanted their members to be on the forefront regarding monitoring, reporting and verification (MRV), as well as ensure transparency through reporting. In the following chapter, I will present my findings connected to how this is implemented in practice. More specifically, how the idea of sustainability performance measurement is implemented in the Norwegian shipping industry.

Chapter 5 – Empirical Findings

In this chapter I will present my empirical findings. First, I will present my findings connected to the industry. Then I will present my findings connected to companies. The presentation will start with a general description of the emergence of sustainability performance measurement. Following this I will describe the measurement practice in greater detail. As there are certain aspects that are relevant throughout this chapter, I will first give a presentation of these before focusing on the respective industry and company practices.

5.1) Contextual Aspects

5.1.1) IMO and the MARPOL

The International Maritime Organization (IMO) was established by the United Nations (UN) and came into force in 1958. Since then, the organization has been devoted to the international maritime industry as a whole, adopting around 50 conventions and over 1,000 codes and recommendations. Corresponding to their slogan “*safe, secure and efficient shipping on clean oceans*” (IMO, 2013, p. 2), these are for the most part concerned with aspects connected to maritime safety, marine pollution and maritime safety. A relevant example of this is the MARPOL convention, which was adopted in 1973. The MARPOL was initially focused on preventing pollution by oil through Annex I when it came into effect in 1983. However, since then it has been extended several times and today consists of six annexes - focus areas (IMO, 2011b). Here, Annex II prevents pollution of so-called noxious substances, Annex III regulates transportation of harmful substances, Annex IV controls the discharge of sewage from ships, Annex V prevents ships from polluting by garbage, and Annex VI sets limits related to polluting emissions to air.

5.1.2) NSA and the Zero-Emission Vision

The Norwegian Shipowners’ Association (NSA) was established in 1909 and consists of 144 members connected to various activities within the shipping and offshore industry (NSA, 2015). The overall responsibility of NSA is to support the interests of its companies, both nationally and internationally. In the early days, this involved efforts to maintain the competitiveness of the industry by working against rules that only would apply in the

Norwegian context. Since then, their focus have significantly broadened and today they are involved in everything from industrial policy to the environment (NSA, 2014c). An example relevant to this thesis is their zero-emission vision “*for Norwegian shipping and offshore contracting activities to produce no environmentally harmful emissions or discharges to the air or sea*” (NSA, 2014a, p. 3). Regarding emissions to air, the NSA focus specifically on carbon dioxide (CO₂), sulfur oxides (SO_x), nitrogen oxides (NO_x) and particulate matter (PM). As for emissions to sea, the vision emphasizes oil pollution, ballast water treatment, sewage, garbage and antifouling. The zero-emission vision in many ways demonstrates NSA’s role as “*a promoter for the work towards stricter international rules for shipping and the environment*” (NSA, 2014c, 10th topic, author translation). In addition to the vision being rooted in the IMO (see Table 1 below), NSA has also adopted a proactive approach when it comes to research and development. This will be demonstrated in their involvement with practices that will be presented in the next subchapter.

Table 1: NSA’s Zero-Emission Vision and IMO Regulations

<u>NSA Zero-Emission Vision</u>	<u>IMO Regulations</u>
Oil Pollution	MARPOL - Annex I
Sewage	MARPOL - Annex IV
Garbage	MARPOL - Annex V
SO _x , NO _x , PM	MARPOL - Annex VI
Ballast Water Treatment	Ballast Water Management Convention
Fouling and Antifouling	International Convention on the Control of Harmful Anti-fouling Systems on Ships

5.1.3) WG5

The Working Group on Environmental Friendly Shipping (WG5) was established in 2009 by the five shipping companies BW Gas, Wilh. Wilhelmsen ASA, Solvang, GriegStar and Torvald Klaveness. Starting out as *“a response to NSA’s environmental vision stating ‘Zero harmful emissions to air and sea’”* (Langeland, Jønvik, Ljungberg, Toft, & Bøhmer, 2011), the thought was that the group would be a good way to exchange knowledge and cooperate. This was confirmed by a member of the WG5, who said that *“we saw that all of us were faced with the same problems (...) so why don’t we just get together so that we can share experiences? Then someone can try something that works, others can try something else that works, or don’t work, and then we’ll know”* (Informant 2). Based on this, the group defined seven themes on which they would focus: (1) Emission reduction technologies, (2) Alternative fuels, (3) Energy efficiency, (4) Waste generation and handling, (5) Discharge to sea, (6) Environmental training, and (7) Environmental monitoring and accounting. Different shipowners each got the responsibility for leading the work on a certain theme and to *“develop the groups overall knowledge, experience and potential collaborative projects”* (Amriati-Løvås, 2011, p. 22, author translation). This eventually became the starting point for the projects EMIP and FRAM, which will be the subject of the next subchapter.

5.2) Industry Practices

In this subchapter I will examine practices associated with sustainability performance measurement on an industry level. Here, the Energy Management In Practice (EMIP) project, and the FRAM project are the two most recent attempts of performance measurement related to the topic of my thesis.

5.2.1) EMIP

The EMIP (Energy Management In Practice) project was launched in 2010 by WG5 with the purpose *“to establish a common platform and ability amongst a group of shipping companies which will enable a future cooperation about the evaluation, distribution, implementation, measurement and evaluation of energy saving measures on board ships”* (Langeland et al., 2011, p. IX). In order to achieve this, EMIP was divided into five sub-projects, where

different aspects were addressed. Soon after the initial project was completed, it was followed up by the EMIP 2. Although this project shared the overall objectives of the first EMIP, it extended in terms of both participants and scope. Although EMIP emphasizes the measurement of energy efficiency, it is also relevant to the environmental aspect of sustainability. In addition to saving costs, improving energy efficiency can also help companies improve their environmental performance through for example mitigating emissions of greenhouse gasses.

5.2.1.1) The Emergence of EMIP

Following their work on the seven different themes, WG5 made the decision to prioritize reduction of greenhouse gasses by improving energy efficiency on ships. As a consequence of this, the working group initiated the EMIP with the overall aim to

(...) improve energy efficiency in each participating company through intelligent cooperation with likeminded partners, to make a coordinated contribution towards to the Norwegian Shipowners Association's environmental vision "Zero harmful emissions to air and sea" and mobilization of Norwegian shipowners for effective and structured implementation of the Maritime 21 strategy (Langeland et al., 2011, p. II).

In practice, improving energy efficiency would mean that the companies would be able to do the same amount of transport work using less fuel. As fuel is a significant cost in shipping, the participating companies obviously had an interest in identifying measures that would reduce these costs. As one informant told me, *"of the total cost of a journey, the cost of fuel will equal almost half of the costs"* (Informant 1). At the same time, by improving energy efficiency and reducing the consumption of fuel this would also lead to less emissions of CO₂. Being established as a response to NSA's zero emission vision, this was of course also in the interest of WG5. On the one hand, it could be said that EMIP emerged as a result of industries efforts to improve efficiency and in this way support the zero-emission vision by consuming less fuel. On the other, it was also a natural consequence of the fact that *"energy efficiency was something that was increasingly being focused on"* (Informant 2).

This was certainly a part of the Maritim21 strategy that was introduced in 2010 as a comprehensive effort towards research and development in the Norwegian maritime industry. Through the Ministry of Trade, Industry and Fisheries, Maritim21 was given the mandate to develop a strategy for the future of the industry. More precisely, to make Norway *“the most attractive localization for a global, knowledge based and environmentally robust maritime business”* (Maritim21, 2010, p. 2, author translation). Although the strategy itself would not be established before the end of 2016, the work started in 2010 with establishing the following potential focus areas connected to their vision: (1) Knowledge hub and infrastructure, (2) Maritime politics and framework of standards, (3) Maritime innovation and business development, (4) Efficient and environmental friendly energy utilization, (5) LNG – Distribution and use, (6) Demanding maritime operations, and (7) Transport and operation in the High North (Maritim21, 2010, p. 4, author translation). Furthermore, through Maritim21 it was also recommended to revise the existing mechanism for allocating funds for research and development. In order to achieve the proposed vision and succeed with the proposed focus areas, funds had to be *“utilized in an optimal way and be made more available for the companies”* (Maritim21, 2010, p. 20, author translation). As EMIP was an effort to improve energy efficiency and to contribute to a more environmental friendly industry they effectively also supported the 4th focus area of MARITIM21. Consequently, the project was also supported by MARITIM 21.

However, the emerging focus on energy efficiency also went far beyond the Norwegian borders. In 2011 the IMO established mandatory measures connected to operational and technical energy efficiency. The first measure was the Energy Efficiency Design Index (EEDI), which would require a minimum level of energy efficiency, depending on the type and size of the ship in question. The second measure required shipping companies to have in place a Ship Energy Efficiency Management Plan (SEEMP). While EEDI is a technical measure and targets aspects connected to the design of the ship and its engine, SEEMP is operational and is connected to how energy efficiency can be improved through different approaches to managing the ships (IMO, 2011a). The EEDI and the SEEMP followed the revision of MARPOL Annex VI that entered into force in 2010. However, the focus on energy efficiency improvement had started to emerge prior to this. In 2009 IMO suggested the

voluntary use of the Energy Efficiency Operating Indicator (EEOI) as an operational indicator for energy efficiency. In practice, the EEOI would measure efficiency in the following way (IMO, 2009, adapted by author)

$$EEOI = \frac{\text{Fuel Consumption (mt)} * \text{CO}_2 \text{ Factor}}{\text{Cargo} * \text{Distance Travelled (nm)}}$$

Here the numerator not only depends on the amount of fuel that has been consumed (in metric tons), but also the type of fuel. The reason for this is that the CO₂ factor changes according to the type of fuel (see Table 2).

Table 2: The CO₂ Factors of respective types of fuel (IMO, 2009)

<u>Type of fuel</u>	<u>CO₂ Factor</u>
Diesel/Gas Oil	3.206000
Light Fuel Oil (LFO)	3.151040
Heavy Fuel Oil (HFO)	3.114400
Liquefied Petroleum (LPG) Propane/Butane	3.000000/3.030000
Liquefied Natural Gas (LNG)	2.750000

The denominator, on the other hand, is expressed as cargo multiplied by distance travelled (in nautical miles), also known as *transport work*. Here, the expression of cargo will vary according to the type of cargo that is being shipped (see Table 3).

Table 3: Expression of different cargo (IMO, 2009, adapted by author)

<u>Type of Cargo</u>	<u>Expressed in</u>
General cargo (dry, liquid, gas, etc.)	Metric tons (mt)
Containers	Metric tons (mt) or number of containers
Containers and other cargoes	10/2 metric tons for loaded/unloaded containers
Passengers	Number of passengers or ship's weight in metric tons

5.2.1.2) Performance Indicators

In theory, there are several ways in which energy efficiency can be improved in shipping. However, in order to establish the effectiveness of the different efforts made it must be possible to measure their influence on energy efficiency. This was also the guiding objective behind the EMIP procedure framework. The first step in the framework was to establish a basis on which different measures of performance could be evaluated. Initially, the EMIP applied a simplified version of the EEOI, which they called the EOI. The difference between the two is that the EOI does not include a CO₂ factor or the weight of the cargo into the equation. Consequently, the EOI was expressed in the following way (Langeland et al., 2011, adapted by the author):

$$EOI = \frac{\text{Fuel Consumption (mt)}}{\text{Distance Travelled (nm)}}$$

Thus, EOI simply expressed the fuel consumption (measured in metric tons) by the distance travelled (measured in nautical miles). Although special focus was given to the EOI, measuring fuel consumption per nautical mile was only one out of four ways in which energy efficiency was measured in EMIP. In addition to EOI, fuel consumption per transport work,

energy consumption per nautical mile and fuel consumption per day were among the KPI's applied (Langeland et al., 2011, adapted by author).

$$\text{Fuel Consumption per Transport Work} = \frac{\text{Fuel Consumption (m}^3\text{)}}{\text{Cargo*Distance Travelled(nm)}}$$

This measure is closer to the EEOI in the sense that it takes cargo into the equation.

$$\text{Energy Consumption per Nautical Mile} = \frac{\text{kwh}}{\text{nm}}$$

As for energy consumption per nautical mile, this is measured by dividing kWh by the distance sailed (measured in nautical miles). Here kWh constitutes the energy produced by the auxiliary engines.

$$\text{Fuel Consumption per Day} = \frac{\text{Fuel Consumption(mt)}}{\text{Day}}$$

Combined, these would serve as input for generating an energy profile (EP) for the vessels. The purpose of the energy profile, as mentioned in regard to the EOI, was to have a baseline on which to compare the effectiveness of an energy efficiency improvement effort. In practice, the EOI alone could serve as a baseline, but it could also be included in the broader EP measurement scheme. Regardless, when developing the baseline “*The measured values should also be representative (measured) for a specific state of the vessel*” (Langeland et al., 2011, p. 27). This is because the measure would be greatly influenced by the work that is being done (see Table 4) and factors such as wind, waves, depth of water and draft. Draft refers to the distance between the lowest point on the ship and the water surface.

Table 4: Descriptions of ship states (Böhmer et al., 2013)

<u>State</u>	<u>Description</u>
Full load	Transit, loaded condition, full draft
Ballast	Transit, in ballast, less than full draft
Loading	Cargo loading
Discharging	Cargo unloading
Waiting	Stand-by between loading/unloading

Once the different baselines had been developed, different energy efficiency increasing efforts could be introduced, followed by new measurements in order to evaluate their respective effectiveness.

5.2.1.3) Summary

In the case of EMIP, performance towards sustainability was concerned with the environmental aspect through its focus on energy efficiency. While the project applied various measures for energy efficiency, the majority was based on fuel consumption relative to other aspects, such as cargo or distance travelled. When it comes to the emergence of EMIP, it was established as a response to NSA's zero-emission vision and in accordance with MARITIM21. Although it is difficult to argue for their direct influence on the measurement practice itself, they helped shape the focus of the WG5. A more direct force on the actual measures was the requirements implemented by IMO. Although the practice in part was based on the EEOI, it resulted in a simplified version of the approach suggested by IMO. Furthermore, measuring energy efficiency in EMIP entailed the use of several measures and not just one. In addition to this, the measures were also to be conducted according to different activities. Thus, the EMIP itself became measurement practice specific for the Norwegian industry and in a way an opposing force to the simple practice suggested by the IMO.

5.2.2) FRAM

Following their work with EMIP, WG5 initiated the FRAM project in 2013. On the one hand, this project extended the work on energy efficiency improvement that had been the basis of EMIP. On the other, while the focus on the environment was more indirect in EMIP, the main objective of FRAM was to “*establish a framework for the measuring and monitoring of CO₂ emissions from the Norwegian owned, controlled or managed fleet*” (FRAM, 2012, p. 1). Similar to the previous subchapter, the following parts will first explore the background of the project and how it emerged. Following this, I will examine the specific performance measures applied in practice.

5.2.2.1) The Emergence of FRAM

Similar to EMIP, the emergence of the FRAM project can in many ways be attributed to WG5 and its commitment to NSA’s zero emission vision. Both projects were also designed according to MARITIM21’s vision and their call for more research, development and innovation in the Norwegian maritime industry. In addition to this, the projects were a way for Norwegian shipping companies to exchange best practices. Indeed, as mentioned earlier, this was one of the most important reasons for the establishment of the WG5 in the first place. Rather than working individually on common problems, shipping companies came together to identify solutions to challenges they were all faced with. One of these was connected to the rising ambitions within the Norwegian shipping industry itself, demonstrated by the zero-emission vision. Another challenge was the fact that expectations connected to shipping’s contribution towards mitigation of CO₂ emissions seemingly were turning into requirements.

As demonstrated through the MARPOL, the environment has been something that IMO has focused on for decades. However, as the EU was growing impatient with the IMO and their lack of specific strategy for mitigating CO₂ emissions (Informant 1), they eventually decided to take matters in their own hands. In 2013, the European Commission (EC) published a strategy for how they would include greenhouse gas emissions from the maritime transport sector in the EU’s overall reduction commitments. The strategy was divided into three steps that would be implemented consecutively:

1. *Implementing a system for MRV of emissions*
2. *Definition of reduction targets for the maritime transport sector*
3. *Application of a market based measure (MBM)* (EC, 2013, p. 5).

The first step of the strategy suggests that that all greenhouse gas emissions from ships using EU ports was to be measured, reported and verified (hence the abbreviation, MRV). The second step was to set reduction targets connected to maritime transport's contribution towards EU's overall climate policies. The third step was the introduction of market-based measures, where the objective would be to reduce emissions by providing economic benefits to those that are able to do so. However, there are some challenges when it comes to implementing this strategy. As I demonstrated in the previous subchapter, measurement connected to energy efficiency and CO₂ is based on inputs connected to fuel consumption and cargo. I also pointed out that the expression of cargo would vary according to the type of cargo in question. Although type of cargo is definite for some companies, which makes calculation unproblematic, it is less so for others. This was also something that came up during the interview with Informant 1: "*If you have 70 000 tons of corn, you move it from A to B, that's simple enough. However, if you are transporting gas or other things, what is the transport work on this type of ship? How should you measure it? Can you make direct comparisons with others?*". In other words, the MRV system should take many aspects into considerations when measuring emissions from shipping. This is especially relevant when emissions can have economic consequences, such as potential MBMs would have. In reality, there are several different MBMs that could be applied. Although we will not explain them in detail, the strategy developed by EC identified a *contribution based compensation fund*, a *target based compensation fund*, and an *emission trading system (ETS)* as the most promising MBMs for maritime transport. The NSA, on the other hand, argue that a tax-based system is the most suitable MBM for reduction of emissions (NSA, 2014a). Initially, the IMO was tasked with developing such a system, but as already mentioned they found it difficult to do so. The main difference between the two would be that an MBM developed by IMO would apply globally, while a EU MBM would only apply for maritime sector within the areas of the European Union. According to Informant 1, this would not be a good outcome for the industry. "*It would be very unfortunate. It would be hopeless to have something in the EU,*

something in China, and something here and something there, rather than having a common scheme globally” (Informant 1).

In connection to these developments, the FRAM project was in a way the Norwegian shipping industry’s contribution to the discussions. It was a practical approach to the development of an MRV system where *“the challenge is often that the group of bureaucrats who do not really know the industry and how it works produce some sort of framework that is close to impossible to satisfy”* (Informant 1). Thus, the FRAM project became an example of a practical approach and a way for the Norwegian industry to contribute in *“the ongoing MBI negotiations in the IMO and EU and make FRAM a relevant and competent subscriber to this discussion”* (FRAM, 2012, p. 1). The way they did this was to develop an MRV system on their own, which involved common guidelines that the participants had to follow. In the following part I will present the specific performance measures involved in the project.

5.2.2.2) Performance Indicators

As earlier mentioned, one of the main challenges connected to an MRV and MBM system in shipping is that the industry is involved with a wide variety of activities. Even within the same segments there will be variations in the nature of the work that is being done. Not only does this make comparisons difficult, it also challenges the validity of any such attempt to do so. The FRAM project has taken this into consideration and measures performance by segments in addition to the industry as a whole. In FRAM, shipping companies were segmented into bulk carriers, container, dry cargo, gas carriers, and oil/chemical tankers (FRAM, 2016). In practice this meant that shipping companies would measure their performance according to the guidelines provided, before the performance of their corresponding segment would be measured, and then eventually the performance of the participants as a whole.

The performance measurement in FRAM involved the use of three indicators. The first indicator, which can be seen below, measures CO₂ emissions per unit transport work (FRAM, 2013).

$$CO_2 \text{ Emissions per Unit Transport Work} = \frac{CO_2 \text{ Emissions}}{\text{Transport Work}}$$

In reality, this is the EEOI, which I introduced in the previous subchapter. As you remember, it involved calculating the numerator, here expressed as *CO₂ Emissions*, by multiplying fuel consumption with a CO₂ factor. Connected to this FRAM adopted the IMO approach for normal bunker fuel, while they developed their own approach to calculate the CO₂ emission from LPG and LNG (FRAM, 2012). As for the denominator, here expressed as *transport work*, this is also the same as in the EEOI: weight of cargo (in metric tons) multiplied by distance sailed (in nautical miles). The second indicator, measures CO₂ emissions per nautical mile (FRAM, 2013):

$$CO_2 \text{ Emissions per Nautical Mile} = \frac{CO_2 \text{ Emissions}}{\text{Nautical Mile}}$$

This indicator uses the same approach as the previous one when it comes to the numerator expressed as CO₂ emissions. However, for the denominator, weight of cargo is left out and the numerator is only divided by distance sailed in nautical miles. The third indicator measures absolute CO₂ emissions (FRAM, 2013):

$$\text{Absolute CO}_2 \text{ Emissions} = CO_2$$

This indicator is more or less straightforward and is calculated by multiplying fuel consumption with the CO₂ factor corresponding the type of fuel used.

5.2.2.3) Summary

As mentioned in the introduction, similar to EMIP, the measurement of performance towards sustainability in FRAM was connected to the environmental aspect. The measures that were used were in reality an expansion of the measures from EMIP in the sense that they focused on CO₂. However, in reality this is calculated more or less in the same way as you would calculate energy efficiency, but just adding a CO₂ factor. While the EEOI was a starting point for EMIP, it was one of the main measures in FRAM. However, just as EMIP had been an opposing force, or a response to these forces, FRAM was initiated as a way to influence the measurement requirements that were looming. Thus, the measurement practices in FRAM constituted an approach that better reflected the circumstances in the Norwegian context.

5.3) Company Practices

In this subchapter I will present company practices related to sustainability performance measurement. The objective is to examine how they are measuring sustainability in practice and how these practices have emerged.

5.3.1) Wilhelmsen

Wilhelmsen, or Wilh. Wilhelmsen Holding, is an industry group that operates within the global maritime industry. Up until 2016, their main areas of business were connected to shipping and logistics, maritime services and holding and investments (Wilhelmsen, 2016). However, since then there have been some structural changes that have taken place. The most significant has been the merger between Wilh. Wilhelmsen ASA (WWASA) and Wallenius Lines AB, which effectively means that WWASA will have ceased to exist from 2017. As a consequence, there are some issues connected to the future measurement of sustainability performance. As a result of these uncertainties, I have decided to concentrate on the practice that was in place up until these structural changes.

5.3.1.1) The Emergence of Sustainability Performance Measurement

Throughout the document study of Wilhelmsen there was especially one thing that kept reoccurring: their vision. Whether they were talking about aspects such as their employees, products or innovation, they connected their practices to their aspiration to *shape the maritime industry* (Wilhelmsen, 2017). In connection to sustainability, this was further specified in the following way:

We are committed, through our businesses, to contribute to reduce pollution, reduce inequality, promote sustainable consumption, a healthy business environment and even playing field, and utilise the potential associated with renewable energy. This is not something we turn on and off or do to promote our business. It is just how we do business. (Wilhelmsen, 2016, p. 13)

Aside from looking nice in a sustainability report, or any report for that matter, it also seemed to be an attitude shared among the people that were interviewed. Referring to their vision, Informant 3 said that “*we have a way of working called ‘right results, the right way’, which involves avoiding shortcuts and that we do things proper*”. This was also something that came up in the interview with Informant 2, who argued that those who waited to act until they were forced to would eventually be the losers, “*while those who do it proper, they are going to win*”.

Linked to this proactive attitude, the company was relatively early in implementing performance measures related to sustainability. After having cooperated with Bellona on a project connected to environmental friendly products, the focus on sustainability increased around 2005 when they started reporting on their sustainability performance. Starting off with environmental measures, their scope gradually broadened towards 2012 when they made the decision to implement the GRI-approach. The company, having little experience or knowledge of working with the framework, relied on the help from DNVGL (Det Norske Veritas and Germanischer Lloyd) to get started. DNVGL is an organization providing a wide array of services (such as classifications, advisory, software solutions and technical

assurance) to industries within the maritime, oil and gas, and energy segment. Regarding DNVGL's role, Informant 3 said that

“We use DNVGL as a sparring partner (...) and they helped us a lot in the start when we didn't really understand this (GRI) at all. Since then, they have helped us periodically through the years, but significantly less now than in the start. But they are very involved with our materiality assessments” (Informant 3).

Connected to the implementation of GRI, DNVGL stressed the importance of identifying the areas that were most important for Wilhelmsen. In order to do this, they identified a broad specter of people within the company that DNVGL later would interview. Here the effort was to identify aspects that were important both to their respective departments and their external stakeholder. Following this process they created a materiality matrix of the issues that appeared to be the highest importance. To arrive at the final areas of materiality, *“we would sit down with DNVGL and corporate management and say ‘this is what we have found out, these are the things that people care about and what matters, what are our thoughts on this’”* (Informant 3). After a short process of going back and forth, they would eventually arrive at a final matrix based on areas of importance to external stakeholder as well as Wilhelmsen. Following this, data would be collected, or aggregated, from the areas that had been identified as material. As a great deal of this information had already been collected for other purposes elsewhere in the organization, it could be argued that Wilhelmsen report their sustainability performance rather than measure it. However, once the information had been collected and aggregated from different areas of the organization it was also communicated back to the respective providers. Informant 3 pointed out this dual role of the sustainability reports:

Our intention with the report is obviously to be transparent and open the window into the organization, but beneath this surface the focus is to make sure that, the people that contributes in material areas, improves their processes. And that they see that here they do not perform well enough and that here they have something to work with.

In other words, the information that was collected had a dual role: to report and to measure their sustainability performance. Although a great deal of the collected measures had a purpose to measure performance regardless of sustainability, they acquired this purpose once they were put in the context of sustainability and communicated back to the respective providers.

Based on the above, it appears that Wilhelmsen's practice emerged gradually. As a result of their internal and evolving commitment towards sustainability, the company eventually chose to implement the GRI standard. This was done in cooperation with DNVGL, who stressed the importance of a materiality assessment. Through this assessment, stakeholder interests were also revealed, which would influence the aspects that eventually were identified as material. Connected to this, I asked about how NSA influence their sustainability performance measurement practice, to which the informant replied,

“NSA is on a very high level. What we do most of with them is to give them input to what the Norwegian delegation should say when new regulations come. We have supported them a lot in the data collection to influence regulations, so I think that is the main channel. (...) They never come and force anything on us, they are more a supporter” (Informant 2).

Regarding WG5, their influence seemed to be limited as well: *“this work is more meant as a way to influence regulations in shipping and to put Norwegian shipping higher on the agenda”* (Informant 2). However, Wilhelmsen by no means oppose regulations. According to Informant 3, Wilhelmsen *“always support stricter rules and more rules, because it creates an even playing field. Then you can get an industry that works on the same terms globally. The more control there is, the better”*. However, more regulations do not necessarily mean that there will be more control. Although shipping companies are required to perform according to standards, they are rarely required to measure and report. Due to the lack of proper mechanism in place, Wilhelmsen want to be transparent and communicate their performance (Informant 2). In addition to regulations, there are also other external forces that influence

their practice. When it comes to the social aspects of sustainability, especially those connected to health and safety. In connection to this, Wilhelmsen have implemented OHSAS 18001 (Wilhelmsen, 2015). As a part of OHSAS, companies are required to measure several aspects connected to safety and health, such as number of accidents and number of workers with diseases (OHSAS, 2007). These are things that will be presented in the next following part.

5.3.1.2) Performance Indicators

Wilhelmsen`s sustainability performance measurement practice involves the use of indicators of all three aspects of sustainability: economy, society and the environment. For their environmental performance, Wilhelmsen have four main measures. The first one is *total CO₂ emissions*, which is calculated by multiplying fuel consumption with a CO₂ factor according to the IMO-approach (see Table 2). The second is an indicator of *transport efficiency*, which is measured by dividing grams of fuel consumed by the transport work done (cargo*nautical miles). The third, is a measure of *SO_x emissions*, and is based on the fuel consumed and its corresponding content of sulfur. The fourth indicator measures *NO_x emissions* and is based on the consumption of fuel and engine specifications regarding emissions of NO_x per kWh.

The measurement of performance towards sustainability in Wilhelmsen also includes economic aspects, such as economic performance, market presence and indirect economic impacts. Economic performance is measured through the generation and distribution of economic value through revenue and expenses. In other words, these are measured according to the standard approach in accounting: the income statement. Market presence is expressed through the number of senior management that has been hired locally. When it comes to the indirect economic impacts, measurement is perhaps not the most suitable word. Nonetheless, they do provide quantifiable information related to efforts they have made towards communities. Here performance is measured as the amount of funds allocated to a fund for charitable causes as well as different resources donated to various causes.

When it comes to social performance the aspects that are measured are connected with employment, occupational health and safety, training and education, and anti-corruption. Performance connected to employment is measured through the turnover rate and gender mix, where the latter is towards more equal proportions of males and females. Concerning occupational health and safety the areas that are focused on are sickness absence rate, occupational disease rate, lost time injury frequency (LTIF) rate, total recordable case frequency (TRCF) rate, total safety observations, and exposure hours. Along with total safety observations measurement of exposure hours is quite straightforward. Exposure hours refer to hours where employees are exposed to risks related to health and safety. For vessel-based operations this amounts to 24 hours a day, while for onshore operations this amounts to 8 hours a day. However, the ratios connected to the different frequency rates apply formulas in accordance with OCIMF (Oil Companies International Marine Forum) and GRI. Consequently, all the aspects mentioned above are expressed as ratios according to how often they occur every 1 million man-hour worked. These aspects are measure both for vessel based operations and onshore operations. For onshore operations, the frequency rates are calculated for every 200 000 man-hour worked. As for training and education, average hours of training is partially measured, but only for on shore employees. Connected to this aspect, Wilhelmsen also measures the completion rate of performance appraisals according to gender, employees, and managers and for the organization as a whole. Through their engagement survey, Wilhelmsen measures the satisfaction and motivation of their employees. They also measure the extent that the survey has been responded, expressed as the percentage of the employees. In the case of anti-corruption, the measurements are connected to quantity of incidents associated with corruption and the completion rate of a preventative training program.

5.3.1.3) Summary

In Wilhelmsen, measurement of performance towards sustainability involved measurement of economic, social and environmental aspects. On the one hand, it could be argued that their practice is a result of their internal commitment and identity to operate not only in accordance to what is required from them, but also beyond. On the other, external forces have also shaped their practice. Through their materiality assessment they identified areas that were important for their stakeholders. Once their focus had been established, relevant data from different departments were collected. As for the NSA and WG5, these did not directly influence their

practice. In fact, it seemed to be the other way around. When it came to rules and regulations, these were followed, but as they do not necessarily involve requirements as to how they should measure their performance, the influence was more based on what areas they focused on.

5.3.2) Ugland

Ugland, or The J.J. Ugland Companies, is a family owned shipowner established in 1930. In addition to shipping, the company is also involved in marine services, transport of bulk, crewing and management, construction and the oil industry.

5.3.2.1) Emergence

One of the impressions I was left with following the interview was that the history of the company was a significant part of their identity. Although Ugland has become a global actor, the company remains within the family and the relatively modest town of Grimstad. As a consequence of this, they have a significant potential to affect the local community. According to the informant, this is something the company not only are aware of, but also a foundation for their existence:

“all this with social responsibility and sustainability has its foundations in the fact that the company is owned by a family that has made contributions to the local community, both through supporting volunteering and being involved politically. These things have in many ways always been a backdrop for us” (Informant 5).

Thus, the general idea of sustainability was in many ways something that emerged out of this identity and core values: cooperation and long-term perspective. With the latter, the informant stressed the fact that sustainability also necessitates the need to earn money. While the environmental aspect was important for the company, an even higher priority for Ugland was their ability to provide a stable and a safe work environment for their employees: *“the most important thing is that we will be here tomorrow, next week, next year and in 50 years, so that*

people can have a stable way of living” (Informant 5). Thus, according to the informant, sustainability was more of an extension of the things that they had always been focusing on:

When we sought to structure what we had more or less always done we asked ourselves “how do we take the step into these new terms?” There is a lot of this corporate social responsibility around. We decided to implement the UN’s Global Compact and use this as guidance in our work (Informant 5).

The UN Global Compact is a corporate sustainability initiative based on a vision of developing sustainable business. As means towards this end are the ten principles related to human rights, labor, environment and anti-corruption (UN, 2010). As a premise for the implementation of the UN Global Compact, the implementing company has to report on their progress towards sustainability. As Umland was trying to get the reports going, they were looking for inspiration outside of the company. Connected to this, they looked to Grieg, a company in Bergen that they felt that they could compare themselves with. As they felt that this company was a little bit a head of them when it came to this aspect, they were inspired by what they were doing. In practice, Grieg had combined the UN Global Compact with GRI. This meant that the different areas that the UN Global Compact was focusing on were reported according to corresponding GRI elements. As the informant said, *“we tried to structure the Global Compact in a way, that is our foundation. Based on this, we tried to relate all the other things to this”* (Informant 5).

Although Umland had always been conscious of the way that they did business, they were not so used to providing the world around them with details: *“we are in a transition phase where we are increasingly opening up for the world around us. Shipping was in general very conservative and closed for the outside world”* (Informant 5). However, as the outside world was changing, they felt that they had to keep up with the development:

We have always had these things, but not always announced them. However, the society in general is changing and expecting and requiring more, and we have to be aware of this. It might also be important to attract new employment as the new generation is occupied with these things and might ask “what are Uglund doing?” (Informant 5).

Furthermore, the informant also pointed out that the focus on sustainability was becoming more widespread in the industry. Here the NSA was described as being very ambitious and laying far ahead with their focus on sustainability. At the same time, the informant said that NSA has never been decisive in their work towards sustainability: *“they might facilitate our work and push a little bit, but never been a direct influence on our work. It has been a natural development from our side”* (Informant 5). However, the informant said that certifications are increasingly becoming more important in the industry: *“when you enter the oil industry, the oil companies prefer that you are certified* (Informant 5). As of today, Uglund is working according to standards such as ISM, ISO 9001, ISO 14001, OHSAS 18001 in addition to the Global Compact. ISM is here an acronym for the International Safety Management standard, which is developed by the International Maritime Organization (IMO). The standard and its associated code offer guidance on how to manage and operate ships safely and prevent pollution (IMO.org). ISO 9001 and 14001 refers to two different standards developed by the International Organization for Standardization (ISO, 2017). While ISO 9001 provides criteria for quality management, ISO 14001 is focused on environmental management. Although they looked to these standards, *“they more or less involve activities that we have always been doing. At the same time, they help us structure our work and we get some sense of things people care about”* (Informant 5). An example of this is the materiality analysis, which is a prerequisite for becoming certified by for example ISO 9001. Although, Uglund are looking to become certified in 2018, they have already conducted one materiality assessment. However, according to the informant, this was more of a way to get experience with the process:

We were searching for a guide for how to do it, but there is no such thing within shipping, at least not at that time. We eventually found a template on the web page of

NHO (author: Næringslivets Hovedorganisasjon, or The Confederation of Norwegian Enterprise in english) that we changed a little bit. We removed some things that were irrelevant for us and added some things that were more relevant for what we were working with (Informant 5).

The assessment was carried out internally without the involvement with stakeholders. Instead they interviewed people that were closely connected to the stakeholders and asked them how they perceived them based on the aspects that the Global Compact focused on. Although it was what the informant called a quasi materiality assessment “*it was useful to get an impression of where we stand and the things we should focus on*” (Informant 5). However, the materiality assessment was just one part of the process of arriving at aspects that Ugland focus on. The company frequently conduct what they call *management reviews* where all the different departments and ships are represented. These reviews are based on collecting viewpoints and perspectives from the entire organization. This also applies to perspectives concerned with sustainability and its measurement. The measurements that will be presented in the next part are for the most part established during these management reviews: “*here we decide whether we want to expand or decrease the amount of measures*” (Informant 5).

5.3.2.2) Performance Indicators

Sustainability performance measurement in Ugland is based on several indicators. Although some of them are published on the web site or in different reports, a significant amount of these are kept internally. In general these were connected to the measurement of health, safety, corruption, environment and the working environment. In the following paragraphs I will present the measures that Ugland have made available to the public.

In the annual environmental report, Ugland presents several measures related to fuel consumption and air emissions. The first measures are connected to fuel consumption. Fuel is here specified as fuel oil and lube oil, where the primary consumers “on board are the main and auxiliary engines producing propulsion and electric/hydraulic energy”. The first indicator demonstrates the yearly fuel consumption in metric tons (mt), while the second demonstrates

yearly fuel consumption relative to the weight of the payload and the distance it has been transported (g/mtkm). The third measure concerns the energy usage. This is measured as watt hour divided by the weight of goods transported per kilometer (Wh/mtkm). Regarding emissions to air, Ugland measure emissions of carbon dioxide (CO₂), sulphur oxides (SO_x), nitrogen oxides (NO_x) in grams relative to the weight and distance (g/mtkm).

All of the measurements above concerns all 12 of the bulk-carrying vessels and a heavy-lift crane vessel managed by Ugland. Although the vessels are measured individually, their average performance is also measured on all of the abovementioned aspects. When it comes to the tankers, barges and tugs, Ugland does not directly manage these and consequently does not measure their performance related to the indicators above. The platform supply vessels (PVS), on the other hand, are to a greater extent involved with the management. For these they are mostly occupied with measuring the consumption of fuel in relation to different usages of the vessels. More specifically, they measure the consumption of diesel oil depending on whether the vessels are travelling at full speed or at “eco”, and the consumption of fuel when the vessels are moored (secured to land) or in standby. The total fuel consumption of the PVS is also measured by aggregating the individual measures. The measurement approach that is applied is the kg of diesel oil divided by hours (kg/hrs).

In addition to fuel consumption and emissions to air, Ugland also measure consumption of cylinder oil. These are measured on all the bulk-carrying vessels individually as well as their average performance. Performance related to cylinder oil is computed as liters of cylinder oil relative to tons of fuel.

In addition to environmental performance connected to the vessels, Ugland also measure the environmental impact from office operations. In this regard, they measure their performance related to consumption of energy and raw material, release of CO₂, and release of different waste to land. Energy consumption is measured in kilowatt hour (kWh) through regular and occasional usage. Raw materials in terms of paper usage are measured in kilograms (kg) in three categories; printing and writing paper; mail, magazines and newspapers; and other

paper. When it comes to water consumption this is measured in liters according to two categories of usage: main water and garden water. As for CO₂, this is measured in kg as the release associated with employee travel, such as air flights, and the use of an oil fired boiler that the company uses as a backup for their electric power. Ugland's different releases to land is categorized as paper/cardboard, plastic, other garbage, food, glass/cans, batteries and light tubes.

5.3.2.3) Summary

In Ugland, measurement of performance towards sustainability was based on the environmental and social aspects of sustainability. While the environmental were described in the previous part, the social measures were not made available for the purpose of my research. Similar to Wilhelmsen, the measurement practice seemed to have emerged partly as a consequence of the identity, or culture, in the company. Looking to structure their work towards the increasing focus on sustainability, Ugland made the decision to adhere to UN's Global Compact. Through this they eventually implemented the GRI approach to reporting after having looked to Grieg, a company with which they felt they could compare themselves. In spite of these frameworks and standards, the measures themselves, emerged as a consequence of the decisions made in the management reviews.

5.4 Summary of Empirical Findings

In this chapter I have looked at measurement of performance towards sustainability in the Norwegian shipping industry. First we looked at what I called industry practices and how they emerged. Here, both EMIP and FRAM involved measures connected to the environment. Although EMIP did so in an indirect way through energy efficiency, FRAM more explicitly measured environmental performance through the mitigation of CO₂. Both practices emerged through the WG5's commitment to realize NSA's vision of zero-emission in the Norwegian shipping industry. The fact that this work was focused on energy efficiency and the environment could be explained by the increasing focus on this in the regulative environment as new requirements where in the works at the time. Thus, there existed external forces that to a certain degree influenced the measurement practices in the industry. However, the regulations in development involved few or none requirements to the actual approach to

measurement. Due to specific circumstances in the industry, EMIP and FRAM occurred as a suggestion as to how it could be done in practice. In order to influence the regulative environment, the Norwegian shipping industry, through WG5 and NSA developed their own practices.

Following the industry practices, I looked closer at how performance measurement towards sustainability was done in two companies. The first, Wilhelmsen, applied measures to all three aspects of sustainability. The second, Umland, focused their measures on the environment and social aspects. Both companies more or less claimed that their practices were extensions of their company identities. At the same time they recognized the growing pressure from the outside to demonstrate that they were acting in responsible ways. On the one hand, they shared many of the same measures. On the other, their approach showed slight variations. They also measured things that the other did not. This could be a consequence of the fact that the two companies both based their practices on a mix of what they themselves identified as important and what was important for their stakeholders. Although both companies operate in the shipping industry, they are not identical in terms of the work they do. As a result, both the companies and their stakeholders might be faced with different challenges and opportunities. Similar with the industry practices, the companies were also subject to rules and regulations. However, as I pointed out earlier, these very seldom require a specific approach to measurement. Consequently, it is possible with several approaches. This is also the case with standards, such as the different versions of ISO and OSHAS. While both adhere to these, it does not mean that they have to measure things in the same way.

Chapter 6 – Analysis

In the previous chapter I presented performance measurement practices associated with sustainability. Here the focus was on the emergence of the different practices and the indicators that are applied. In this chapter I will analyze these findings based on the frame of reference that was presented in Chapter 2. More specifically, my findings will be categorized according to my research questions and then be discussed through the theoretical and conceptual perspectives.

6.1) How is Performance Towards Sustainability Measured in Practice?

6.1.1) A Focus on Social and Environmental Aspects

In the second chapter I argued that there is no exact way in which sustainability can be defined. In spite of this, I claimed that the approach of the triple bottom line, through the GRI, was the most widespread approach when it comes to the measurement of performance towards it. As for the Norwegian shipping industry, this seems to be only partially true. While the companies talked about the importance of sustainability and their commitment towards it, it would be a stretch to say that they are measuring their performance according to the triple bottom line. That being said, while Uglund focused on environmental and social aspects, Wilhelmsen did in fact include measures from all three aspects. However, both practices consisted of isolated measures that do not coincide with the fundamental assumption of interdependence presented in the triple bottom line (Elkington, 2004). As for the industry practices, these explicitly focused on the environmental aspects. In EMIP, the measures were connected to energy efficiency, in which environmental performance in many ways was measured indirectly through various indicators connected to fuel consumption. The FRAM project, on the other hand, explicitly focused on environmental performance through the emission of CO₂.

Thus, in the Norwegian shipping industry, sustainability performance measurement practices consist of measures *towards* sustainability, rather than of sustainability as presented in the triple bottom line. However, as mentioned in the introduction, I am not interested in whether the practices I came across either measured sustainability or not. I am interested in how performance measurement practices *associated* with sustainability is implemented in the

Norwegian shipping industry. However, in order to investigate this, it was first necessary to see what was actually done practice.

6.1.2) Some Similarities, but still Different

On the one hand, the way that performance towards sustainability was measured in the Norwegian shipping industry demonstrated some similarities. This was especially true when it came to the environmental aspect where all practices measured performance in some way or another based on fuel consumption. As for the social aspect, only the companies measure their performance. Here, both practices were focused on aspects such as safety, injury and health. Thus, in all four practices the performance measurement demonstrated similarities when it came to the categories that were focused on. On the other hand, the practices also demonstrated differences. In spite of these similarities, there were differences within the categories that were measured. In the EMIP project for example, all the participants measured environmental performance in terms of energy efficiency. However, upon closer scrutiny, there were slight variations when it came to what indicators the companies chose to implement in their measurement scheme. Furthermore, although the companies also measured energy efficiency they did not do it in the exact same way as each other or when compared to EMIP. The differences were for example connected to the amount of indicators, the parameters (nautical miles vs. kilometers), and scope. In fact, differences were also to be found in the measurement of performance in the environmental and social aspect as a whole. Based on this, although the practices had similar focus across the aspects of sustainability that they shared, there existed differences within these categories. In other words, while they might measure many of the same things, they do not necessarily measure it the same way.

Thus, so far the findings seem to be in accordance with Scandinavian institutional theory in the sense that the measurement of performance towards sustainability demonstrates both homogeneity and heterogeneity at the same time. According to Sahlin-Andersson (1996, p. 70) *“in order to make sense of the fact that organizations simultaneously reveal a striking homogeneity and heterogeneity, we need to understand both how the diffusion happens and how forms and practices are shaped and reshaped in various stages of this process”*. This is also the objective of the two following subchapters where I will analyze the presence of both homogenizing and heterogenizing mechanisms.

6.2) What are the homogenizing mechanisms behind these practices?

6.2.1) Homogenization of an Abstract Idea

In the empirical chapter I presented several factors that indicated that sustainability is on the rise in the Norwegian shipping industry. I referred to different regulations developed by the IMO, the EU's focus on mitigating emissions of CO₂, how the companies experienced the necessity to act according to the emerging focus on sustainability, as well as standards connected to the safety and health. As I came across these, I initially checked them off as examples of coercive isomorphism. I believed that it would be possible to make a connection between these factors and how sustainability, or its associated aspects, was being measured in the Norwegian shipping industry. On the one hand I was right, at least partially. Indeed, these standards, regulations and requirements do seem to influence the industry as suggested by coercive isomorphism. This was demonstrated by the fact that the practices focused on the same categories within the aspects of sustainability that they were measuring. However, as you will remember from the previous subchapter, their measurement approaches within these categories were not necessarily the same. In fact they were more different. Thus, while regulations seem to homogenize *what* is being measured, it does not have the same influence when it comes to *how* it is being measured. If we take IMO's regulations as an example. Their MARPOL convention offers several requirements that shipping companies have to adhere to. A certain level of energy efficiency in their ships, a maximum amount of SO_x and NO_x emissions, were some of the things that I mentioned. However, these are connected to a required performance. How companies choose to measure their performance is mostly up to them. Although, the IMO has suggested the EEOI connected to energy efficiency, companies can ultimately choose for themselves. Furthermore, according to Informant 1, there is currently very little being done to check that these performance standards are actually achieved. While they may have led to isomorphic change connected to for example innovations within shipbuilding, they do not seem to have influenced how they measure performance towards sustainability. When it comes to the MRV system emerging from the EU, companies do not have to measure anything else but their fuel consumption. While their respective performance related to emissions might put coercive pressure on the industry in the future to mitigate these, there are currently less pressures as to how they should measure this.

Thus, the idea of sustainability performance measurement in the Norwegian shipping industry appears to be an abstract one. As a consequence, there exists some uncertainty as to how it should be measured. Returning to the homogenous mechanisms suggested in the new institutional theory, we should expect this uncertainty to lead to mimetic isomorphism (Powell & DiMaggio, 2012). As pointed out connected to EMIP this proved to be only partially true. While the companies involved measured their energy efficiency, there were variations when it came to the indicators that were applied. As for the companies, both of them claimed that they did not look to other companies when developing their measurement practice. However, Uglund admitted that they had copied their approach when it came to combining the UN Global Compact and GRI, this was only related to the reporting aspect. How they measured their performance was according to them the result of a natural development. This was also the case in Wilhelmsen. Although they looked to other companies when it came to reporting, they argued that their measurement approaches were self-developed.

Based on the above, it is possible to argue for the existence of homogenizing mechanisms that influence the implementation of sustainability performance measurement in the Norwegian shipping industry. However, these seem to apply for standards of performance, rather than approaches to performance measurement. But this does not mean that the new institutional theory is wrong when it comes to the influence of homogenizing mechanisms the Norwegian shipping industry. Instead, it could mean that it is wrong to assume that the Norwegian shipping industry in fact in an organizational field.

6.2.2) The Norwegian Shipping Industry as an Organizational Field

In the previous part I presented how sustainability appeared to be in fashion in the Norwegian shipping industry. According to Scandinavian institutional theory, however, along with this idea are numerous other ideas circulating at the same time. The ideas that are in fashion is suggested to depend on organizational fields, which “*constantly selects and de-selects among a common repertoire of ideas plans for action which ideas and practices are adopted.*” (1996, p. 38). Thus, from this perspective, the Norwegian shipping industry appears to be an organizational field, and we should expect the measurement of performance towards sustainability to homogenize. But, as mentioned, this did not seem to be the case in practice.

However, this does not mean that we can reject the notion of the Norwegian shipping industry being an organizational field. According to Powell and DiMaggio (1991, p. 64) “*in the initial stages of their life cycle, organizational fields display considerable diversity in approach and form*”. In other words, if we assume that the Norwegian shipping industry as an organizational field is in an early stage of its life-cycle, these variations are only natural. As the industry acquires a stable structure, we should expect to see the forces of isomorphism to emerge, which will eventually lead to more similar practices. The question is whether this assumption is reasonable. Although structuration not necessarily is time-driven, it is difficult to argue that an organizational field that has existed for hundreds of years is in the early stages of its life cycle. On the other hand, how reasonable is it to assume that the Norwegian shipping industry in fact constitutes an organizational field? This might become problematic if we look at a popular definition of organizational fields:

By organizational fields we mean those organizations that, in the aggregate constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services and products (Powell & DiMaggio, 1991, pp. 64-65).

Other than the fact that the companies face many of the same regulations, it is not much else left in the definition that would imply that the Norwegian shipping industry as a whole can be called an organizational field. As I presented in Chapter 4, the industry involves a wide variety of different activities, that in many cases are completely different from each other. Hence, it is difficult to see how these activities and the respective companies performing them are connected, directly as well as indirectly. What is for example the relationship between a company laying cables at the bottom of the North Sea and a company that transports passengers? Still, they are both within the same industry. But are they within the same organizational field? It might make more sense to think of the industry as consisting of several organizational fields. In that case, institutionalization could be examined within each of these, rather than in the industry as a whole. On the other hand, the two companies that I studied would in that case most likely belong to the same field, due to their similarities. In spite of this, their practices demonstrated heterogeneity rather than homogeneity. This, I argued, could be explained by the lack of specific requirements when it came to measuring

performance towards sustainability, which was further partly attributed to the IMO's inability to develop them. In the same way as it does not make sense to develop common approaches to such a diverse industry, it does not make sense for the companies to adopt them. And as long as the shipping industry is treated like a homogenous group of companies, there will be a lack of specific approaches to sustainability performance measurement for them to institutionalize.

In this subchapter I have discussed the influence of isomorphic mechanisms on the sustainability performance measurement practices in the Norwegian shipping industry. Moreover, I have suggested that the mechanisms are homogenizing the areas of focus, but not their approach to performance measurement. Connected to this, I questioned whether the Norwegian shipping industry actually could be defined as an organizational field. However, if it in fact can be seen as an organizational field, we have to explain the heterogeneity in a different way.

6.3) What are the Heterogenizing Mechanisms Behind these Practices?

6.3.1) Translation of an Abstract Idea

Regardless of whether the Norwegian shipping industry can be called an organizational field, the companies in the industry are facing a similar regulative environment. Connected to this, the industry and its members are faced with increasing requirements connected to sustainability. According to Sahlin-Andersson (1996) ideas are more likely to be discovered when they are related to a problem that an organization is facing. As the Norwegian shipping industry is facing similar problems connected to regulations, ideas associated with sustainability have created a fashion in the industry. In the previous part we examined how this fashion was influenced by homogenizing mechanisms. The conclusion was that the idea of sustainability, the focus areas, showed similarities across the practices. However, when it came the measurement of performance towards it, practices were different. According to (Czarniawska & Joerges, 1996) this can be explained by the fact that although organizations follow fashion, they are unable to reproduce it perfectly. Instead, the idea is translated to fit their specific context which leads to several variations of the idea.

In the case of EMIP, for example, this project suggested several approaches to the measurement of energy efficiency. However, the participating companies chose to implement the measurement practices that made most sense for them. Thus, the EMIP resulted in a wide-array of different approaches. This was also evident when it came to the companies. As earlier mentioned, they might have measured many of the same aspects, but upon closer scrutiny these practices had small variations, connected to for example units of measure, whether they measured yearly or monthly, whether they measured absolute performance or relative performance and so on. Furthermore, what they measured also depended on materiality assessments. In other words, depending on what their stakeholders thought, they would combine this with their internal commitment. Hence, translating external and internal priorities into the final practice. When it came to the FRAM project, this can in many ways be seen as a way for the industry to translate the idea of environmental measurement into the context of the Norwegian industry. Thus, translation occurred as a way for the industry to protect itself from the occurrence of potential homogenizing forces.

6.3.2) Ideas Into or Onto Action?

As mentioned in Chapter 2, Scandinavian institutional theory suggests that ideas circulate translocally before they are picked up by organizations and translated - first into objects and then into action (Czarniawska & Joerges, 1996). Although both in EMIP and FRAM the measurement practices had emerged for various reasons, it was largely due to their commitment to NSA’s zero-emission vision. Based on this, the WG5 collectively developed the practices of measuring energy efficiency and emissions of CO₂. Thus, we could paint a picture of their emergence according to the thought of traveling ideas.

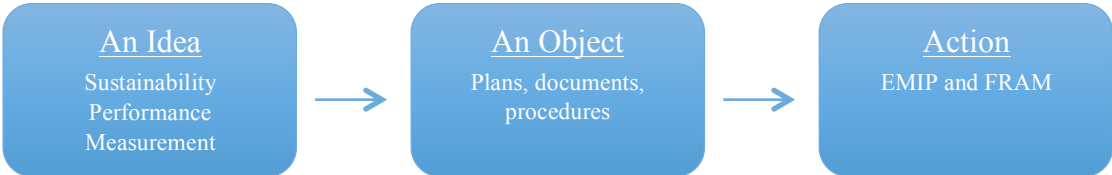


Figure 3: Translation - Ideas Into Action

Here we can see the idea of sustainability performance measurement being translated into objects, before the idea materialize into action. Here the objects are suggested to be plans, documents and procedures, but might as well be linguistic artifacts, such as energy efficiency performance measurement, or environmental performance measurement (Czarniawska & Joerges, 1996). Based on this objectification, the idea of sustainability performance measurement is suggested to have been translated into the actual practices, EMIP and FRAM. This is obviously a massive simplification as the idea of sustainability performance measurement in reality could mean a great deal of different thing. The point however, is that EMIP and FRAM can be seen to have emerged through a translation process as suggested above.

Regarding the company practices, it can be argued that their practices occurred in the same way as presented above. Both companies described their practices as being results of a linear process were arrived at their practices through internal processes. In other words, ideas were translated into action. However, it can also be argued for the case of the opposite. Although, the measures which eventually were applied might have been a result of these processes, many of these measures already existed. Measures connected to fuel consumption, injuries, training and so on, were used to measure performance in other contexts. Hence, rather than the idea of sustainability performance measurement being translated *into* action, it could seem as if the idea were translated *onto* action.



Figure 4: Translation - An Idea Onto Action

After sustainability performance measurement had been objectified in Wilhelmsen, for example, the process of measuring this performance seemed to be more about collecting relevant information from various departments. In other words, the performance measurement

had already been performed. Thus, sustainability performance measurement becomes more of a task of framing the measures in the idea of sustainability. At the same time, there were several measures that had been developed specifically for the measurement of sustainability performance. Ugland, for example, claimed on the one hand, that their practices connected to sustainability was something that they always had done and that it was more about making it fit with the emerging concept of sustainability. On the other hand, the practice of measuring performance towards sustainability had led to the development of measures that were used for no other purpose. It could be argued that EMIP and FRAM also were ideas onto action. whether you are measuring energy efficiency or the emissions of CO₂ the main input is fuel consumption. As stated earlier, this is one of the most important parameters in shipping due to its relevance to cost. In other words, it is already measured for purposes other than sustainability. However, by including it in a ratio or combining it with a factor you can arrive at a measure relevant to environmental performance. Thus, the idea of measuring performance towards sustainability appears to have been implemented both into and onto action in the Norwegian shipping industry.

6.4) Conclusion – Addressing the Problem Statement

In Figure 1 *Making the Connection*, I illustrated how the concepts and theories were connected to the research questions. As indicated, all of the different elements that were included in the figure lead up to the problem statement of the thesis. Now that I have addressed my research questions and analyzed them according to my frame of reference, it is finally time to address the problem statement: *How is the idea of sustainability performance measurement implemented in the Norwegian shipping industry?*

First of all, the idea of sustainability is not implemented in the Norwegian shipping industry. None of the practices can truly be said to measure sustainability even to the most flexible definition of the concept. Instead, the practices focuses on aspects *associated* with sustainability. While all practices involved measurement of performance connected to the environment, only the company practices involved social measures. Perhaps more important though, is that *the idea* of sustainability performance measurement is not implemented because it is not one idea. Instead, the different practices seem to have emerged on several

abstract ideas connected to different standards, regulations and frameworks that circulate in the Norwegian shipping industry. In other words, the idea of sustainability performance measurement is in fact abstract ideas that have emerged as a consequence of the growing demands arising in the contextual environment. This has made ideas associated with sustainability fashionable to the point that measurement practices have started to implement in the industry. Based on Czarniawska (2008) suggestion connected to how institutions emerge, we can perhaps say that sustainability performance measurement is in the earliest stage. Although the ideas associated with sustainability have led to collective actions, they have yet to become repeated and taken for granted to the point that they constitute an action pattern, being normatively justified into an institution. Thus the first answer to the problem statement is that rather than the idea of sustainability performance measurement being implemented, several ideas have formed the basis for the different practices.

These ideas, as mentioned above, have their sources in the emerging contextual pressure. Here I talked about the influence of isomorphism, coercive in particular, homogenized concept of sustainability in the Norwegian shipping industry. However, I also claimed that this had not led to similar practices across the industry. Instead, it had to some extent homogenized the categories which the practices paid attention to. For example, within the environmental aspect, all the practices were focused on energy efficiency, emissions of CO₂, NO_x and SO_x. On the other hand, there were variations among the approaches when it came to how they measured performance towards these aspects. At the same time, the practices were also different in the sense that measured aspects beyond what they had in common. Thus the second answer to the problem statement is that sustainability performance measurement is implemented as abstract ideas, which has emerged through mechanisms that have homogenized the prioritized areas of sustainability, but not the measurement of performance towards it.

As these abstract ideas are implemented however, they seem to be translated according to contextual needs. EMIP emerged as a consequence of new standards related to energy efficiency. Without specific requirements connected to the measurement approach, the project suggested various indicators. The result was that the participating companies measure some

aspects identical, while other were specific to their context. FRAM emerged as a reaction to a possible MRV system that ultimately would measure CO₂ emissions in the industry. In order to influence this system, the Norwegian shipping industry created their own measurement scheme based on what they meant was most appropriate for their context. As for the companies, their practices seemed to be a translation of internal commitment and external requirements and expectations. At the same time, many of the measures that are used seem to have been developed and applied for other purposes than sustainability performance measurement. The third answer to the problem statement thus becomes that sustainability performance measurement is implemented through translation of abstract ideas into and onto action according to local circumstances and needs.

Based on the above I arrived at three answers connected to the problem statement. First, rather than implementing *the* idea of sustainability performance measurement, several ideas has been implemented. Second, on the one hand, these ideas have emerged as a consequence of homogenization of the sustainability agenda in the shipping industry. On the other, due to the fact that this has not involved specific measurement approaches, ideas associated with sustainability performance measurement has remained abstract. Third, this has led to the practices showing some similarities, while at the same time being different. This difference is also due to the ideas being translated according to the local context. Based on this, ideas associated with sustainability performance measurement are translated both into and onto action. To conclude, sustainability performance measurement is implemented in the Norwegian shipping industry through the translation of abstract ideas associated with sustainability according to homogenized priorities and local circumstances.

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Appendix

Appendix 1 – Example of Interview Guide

Fokusområder

Hvordan bærekraftighet måles

- Hvilke indikatorer som benyttes

Proessen bak framgangsmåten.

- Bruk av rammeverk/modeller (ikke bare for rapportering)
- Inspirasjonskilder. For eksempel Rederiforbundet, rammeverk/modeller, andre rederi/selskap
- Interne prosesser: møter, avdelinger, ulike roller og ansvarsområder

Bærekraftighet

- Hvilke aspekt av bærekraftighet fokuseres det mest på?

Hvordan kommer man fram til fokusområder?

- Materialitetsanalyse, arbeidsgrupper, management review eller lignende

Hva er utgangspunktet/inspirasjonskildene for arbeidet med bærekraftighet?

- Rammeverk, rederiforbundet, andre rederi/selskap, intern drøfting
- Wilhelmsen er et av få rederi som fokuserer på bærekraftighet. Hvorfor er dette viktig for dere?

Prestasjonsmåling

- Eksisterer det flere indikatorer internt enn det som kommer fram i Sustainability Report?
- Hvordan gjennomføres prestasjonsmålingene?
- Hvem har ansvaret for gjennomføringen
- Desentralisert? Avdelingsnivå? HSEQ? Shippersys?

- Hvordan benyttes GRI utover ekstern rapportering?
- Hvilke andre rammeverk/modeller benyttes for å gjennomføre målinger? (internt)
- Hvordan påvirker eksterne grupper/personer hva og hvordan bærekraftighet måles?
- Working group 5, Trace, ISO, EU, Rederiforbundet, SFI Smart Maritime
- Hvordan fungerer ”Internal Compliance Audit”?
- Hvordan fungerer ”Annual Engagement Survey”?

Personvernombudet for forskning



Prosjektvurdering - Kommentar

Prosjektnr: 52524

Utvalget informeres skriftlig og muntlig om prosjektet og samtykker til deltakelse. Informasjonsskrivet er godt utformet.

Personvernombudet legger til grunn at forskere og studenter følger Nord universitet sine rutiner for datasikkerhet. Dersom personopplysninger skal lagres på privat pc, bør opplysningene krypteres tilstrekkelig.

Det oppgis at personopplysninger skal publiseres. Personvernombudet legger til grunn at det foreligger eksplisitt samtykke fra den enkelte til dette. Vi anbefaler at deltakerne gis anledning til å lese igjennom egne opplysninger og godkjenne disse før publisering.

Forventet prosjektslutt er 23.05.2017. Ifølge meldeskjemaet skal innsamlede opplysninger da anonymiseres. Anonymisering innebærer å bearbeide datamaterialet slik at ingen enkeltpersoner kan gjenkjennes. Det gjøres ved å:

- slette direkte personopplysninger (som navn/koblingsnøkkel)
- slette/omskrive indirekte personopplysninger (identifiserende sammenstilling av bakgrunnsopplysninger som f.eks. bosted/arbeidssted, alder og kjønn)
- slette digitale lydopptak