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Foreign Operations and Modes Diversity: a Study of Norwegian Oil Field Services

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EXECUTIVE SUMMARY

This study takes a critical look at both how firms configure their foreign operations in the global market place; and the rational for and impediments behind the dynamics of mode configurations. The data analysis draws mainly on dynamic foreign operation modes theories based on two controversial perspectives—economic perspective and internationalization theory. This is complemented with research on an activity based perspective, in the field of global value chains and factories. This research applied a mixed method by providing a quantitative overview of mode configurations in Norwegian Oil Field Service (OFS) industry, with further in-depth qualitative case analyses on OFS firms' foreign operations.

The findings of this research indicate that certain types of activities tend to favor specific mode configurations, where knowledge intensive activities drive the foreign operation mode diversity on both location and activity levels. Additionally, a lower degree of ownership is correlated with the diversity of modes, especially at locational level. Moreover, by considering the foreign operations as a three-dimensional construct (i.e. activity, location and corporate governance), managers may gain a more clear and structured picture of their foreign operations. It is also stressed that foreign operations must be viewed over a temporal dimension as it is subject to continuous circumstantial changes. In turn, having a full understanding of how to configure foreign operations across the three dimensions over time might entail a competitive advantage. While this paper only found a correlation between the locational dimensional construct and firm's performance, further investigations on performance is highly warranted and called out for by the authors. Moreover, some important characteristics of OFS steered the firms to build strategic flexibility into their foreign operations. This might be linked with the highly increasing trend of contractual modes usage; while the firm's operations remain diversified in their mode packages. Besides, flexibility in foreign operations might help managers mitigate issues, such as lock-in effects and mode inertia.

In sum, this paper comprehensively investigates foreign operations and mode diversity of OFS firms. The study also tries to encourage further research in cleaning up the somewhat "messy" reality of foreign operation modes and their configurations.

1. INTRODUCTION

This research paper investigates the dynamics of foreign operations and mode configurations in various markets, within the field of corporate and global strategies. In this vein, prior literature has mainly analyzed discrete entry mode choices of foreign operations. Additionally, the construct of either entry modes or foreign operation modes (FOM) have generally been considered as one-dimensional. However, over the last couple of decades there has been an emergence of conceptual and empirical research concerning a more holistic conceptualization of FOMs, where a more dynamic perspective is employed (e.g. Benito, Petersen & Welch, 2009; Benito, Petersen & Welch, 2011). Still, researchers have underlined the close to endless combinations of FOMs, which comprise various corporate mode diversity matrixes, classified on the dimensions of location, activity and corporate (e.g. Petersen, Benito, Welch & Asmussen, 2008). Comprehensive mapping of firm's international operation in this regard has yet to be undertaken. Therefore, this paper depicts and maps the global activities of Norwegian Oil Field Service Firms (OFS) to obtain an overview of how this industry operates internationally. Building on this, the study digs further into the constructs of foreign operations by undertaking exploratory case studies on the internationalization of Kværner, Fred. Olsen Energy (FOE) and EAB engineering (EAB). By conceptualizing foreign operations as a three-dimensional construct (i.e. activities, location and corporate governance), this research seeks to help cleanse the "messy" reality of dynamic FOMs (Benito et al., 2011).

The oil and gas industry is highly global, representing a vital part of the Norwegian economy and its international business activities. For a long period of time, the sector experiences a tremendous growth in both home and foreign markets. This resulted in a boom of activities, spanning the entire value chain (Alix Partners, 2017) allowing firms to capitalize on the enduringly high oil prices. Though nearing the end of this boom, the Norwegian oil and gas industry saw a worrisome increase in employment, surpassing the value creation of employees (Zhovtobryukh, Nordkvelde & Reve, 2013); and the industry was plagued by rising cost levels. Therefore, when the oil price started to fall in the mid of 2014, the industry had to undertake substantial layoffs and cost-cutting activities (Ramsøy, Reve & Nordkvelde, 2016). Obviously, such an exogenous

shock often forces firms to undertake change. As significant changes took place in the global market, this might have served as a motivating factor for undertaking changes in the foreign operations of OFS firms (Benito, Pedersen & Petersen, 1999). Such changes have been depicted empirically, showing that actors responded to the price shock with divestments, alliances with global actors, and market consolidation (RystadEnergy, 2016). Therefore, the OFS industry is considered as a highly relevant and intriguing sector to investigate.

2. RESEARCH QUESTIONS AND AIMS

The dynamics of foreign operations and mode configurations of Norwegian OFS contain activities, location and corporate governance; while mode configurations diversity is evident spanning all three dimensions (Petersen et al., 2008). Till now, such explicit investigation has not comprehensively been undertaken (for exception see Hashai, Asmussen, Benito & Petersen, 2010; Benito et al., 2011), and there is a need to obtain more comprehensive and fine-grained data on whether this construct provides a more satisfactory and holistic explanation of FOM classification. Contrary to the two aforementioned studies, this analysis conducts mixed method research targeted on a specific industry. In this regard, the authors seek to depict a general mode configuration of the industry, in addition to digging deeper into how various specific organizations conduct their foreign operations.

The OFS sector is a highly interesting and relevant industry to investigate, as it has held a strong position in certain global markets, with advanced technology and personnel spread across the globe (Ramsøy & Qvigstad, 2014). It also represents one of Norway's most important industries (Regjeringen, 2016), yet it has suffered substantially during the recent years of diminishing oil prices (EY, 2016). Besides, certain areas have been affected more severely than others, like for instance the US market (RystadEnergy, 2016). In this regard, it is interesting to analyze how firms undertake mode configurations in various markets during a turbulent time for the industry. Therefore, both the historical international operations and its associated changes reacting to various contextual factors—contingencies—will be focused on in order to obtain a thorough understanding of how OFS undertake foreign operations in diverse markets.

The research questions are as follows:

- *How do firms configure foreign operations in different types of markets, spanning activities, locations and corporate diversity?*
- *What are the rationales for and impediments behind the dynamics of foreign operations and mode configurations?*

3. LITERATURE REVIEW

3.1 Development of Theoretical Perspectives

A central topic in international business has been the choice of modes in foreign operations. In this vein, the most predominantly researched area has been choice of entry modes (for reviews see: Canabal & White, 2008; Brouthers & Hennart, 2007). First, such studies have largely drawn on theories from economics approaches and transaction cost analysis (TCA) (Williamson, 1985; Anderson and Gatignon, 1986; Hennart, 1989). This research stream regards the specific transaction and its attributes, in terms of asset-specificity, uncertainty and flexibility. The governance aspect is seen as the main dimension for mode choice, and only one entry mode should suffice for the specific transaction (Benito et al. 2011). As there is fixed cost related to governance, such structures need to be rather flexible or broadly designed, so that they can handle various transactions. Moreover, recent meta-analyses have found that this perspective manages to do a good job in explaining choice of entry mode (Zhao, Luo & Suh, 2004). Second, evolutionary and the resource-based view (RBV) (Andersen, 1997; Kogut & Zander, 1993; Madhok, 1997; Cuervo-Cazurra, Maloney & Manrakhan, 2007) has also been frequently employed. This field focuses on the firm-specific resources, which firms can either exploit in an international expansion, or they can enter foreign markets as a vehicle for attaining new advantageous resources (Luo, 2002; Tsang, 2000). However, as pointed out by Brouthers and Hennart (2007), with a few exceptions (Erramilli, Agarwal & Dev, 2002; Dev, Erramilli & Agarwal, 2002), entry mode studies within this perspective generally somewhat suffer from limitations. Third, institutional theory (IT) has also been utilized in the investigation of entry modes (Kostova & Zaheer, 1999; Meyer & Peng, 2005), with a focus on the institutional conditions in the host country environment and distinctions amidst host and home country. The development of this approach has moved from a simplistic modelling of risk and uncertainty related to the host

country toward a more theoretically grounded research foundation, brought about by new institutional theory (North, 1990; Scott, 1995). This refined perspective distinguishes amidst the dimensions: regulatory, cognitive and normative. And it looks at how they influence manager's way of doing business in a particular host country, where isomorphic pressure tends to lead to conformity in business operations. Moreover, the eclectic framework, (Dunning, 1993; Dunning, 2000; Dunning & Lundan, 2008) comprising ownership-, location-, and internalization advantages (OLI), combines insight from the previous theories (RBV, IT, and TCA) which has been found to be a good predictor of influences on entry mode choice (Padmanabhan & Cho, 1999; Erramilli, Agarwal & Kim, 1997; Anand & Delios, 1997; Nakos & Brouthers, 2002; Brouthers, Brouthers & Werner, 1996).

Despite the vast stream of research on entry modes forming different perspectives, certain relevant theories are seemingly neglected, such as strategic decision-making (SDM) (Brouthers & Hennart, 2007). Research in this regard comprises ideas such as mangers lack of complete rationality (Hitt & Tyler, 1990) and upper echelon theory (Hambrick & Mason, 1984) which indicate that decisions can be influenced by the individual decision makers or the decision-making teams background and past experiences (Carpenter, Geletkanycz & Sanders, 2004; Brouthers, Brouthers & Werner, 2000). Despite such research indicating that managers matter, entry mode studies scarcely review the decision makers themselves (for an exception see Herrmann & Datta, 2006) and focus on the measurable rational or the transaction attributes. Additionally, with the exception of Hashai et al. (2010), research incorporating an activity based view has till now not been properly integrated in modes research. Notwithstanding, researchers have found that choice of modes may improve the value creation of certain activities (Rodríguez & Nieto, 2016).

While the foundation of the aforementioned research has been grounded in the topic of entry modes, scholars have called for a need to distinguish this term from being seen as a general description of FOM, as there is evidence of mode switches, reductions and increases of mode use, and issues regarding the application of entry context which has limited coverage of just one point in time (Welch & Benito, 2007). In this regard, two main theoretical approaches have been utilized: the economic (e.g. TCA, RBV and IT) and internationalization

process perspectives (Benito & Welch, 1994; Benito et al., 2011). The former has in general considered as a static and discrete approach. It is assumed that after a decision is undertaken, it is the most pertinent one given the contexts (Pedersen, Petersen & Benito, 2002). Therefore, there is a need for a radical change to appear for the firm to contemplate a mode change, meaning there is less of a chance for the combination of FOMs. The internationalization process approach proposes, on the contrary, that mode changes should occur as a natural part of a dynamic process of internationalization (Swoboda, Olejnik & Morschett, 2011). In this stream of research, case study is often used by academics. However, they generally only focus on a single mode switch, without capturing the dynamics of mode configuration. For instance, through experience, managers develop their perceptions about risks and benefits of conducting foreign operations. Such a development is suggested to lead to the preference of moving from a mode offering low market commitment to a mode that requires higher commitment. Still, this perspective does not include an overt contemplation of mode reductions or radical mode changes (Pauwels & Matthyssens, 2004). Thus, both perspectives lack of complete dynamism. Additionally, while control is often seen as a vital component, the perspectives have failed to take into accounts that control may vary over the same mode type (Benito & Welch, 1994). However, Benito et al. (2011) comment that it might be helpful to use a combination of the extant theoretical perspectives in order to explain the dynamics of FOMs. Additionally, tying in the firm's activities as a central part of mode configurations might yield further explanatory power.

3.2 Overall Framework of Mode Choice and Change

Foreign Operation Modes

FOM is generally regarded as how firms continuously conduct their business through organizing their foreign operation arrangements (Benito et al., 2009), which surpasses the rather static conceptualization of entry mode choices. Still, such time contingent changes may be affected by the initial choice of entry mode (Benito & Welch, 1994). The conceptualization of FOMs can be regarded as a comprising both the chosen activity form a value configuration logic, and the location(s) and governance form(s) selected for certain activities (Petersen et al., 2008). Treating the construct as three dimensional might lead to a more realistic

view on the phenomenon. Additionally, the temporal dynamic view of the FOM, with regards to "how" such operations is conducted over time offer further insight, while it may also show relation to the characteristics of emergent strategies (Mintzberg & McHugh, 1985). In the early conceptualization of mode theory, Benito and Welch (1994) called out for the need to develop our understanding of major operation mode steps, and the need for broadening and deepening the research scope in order to catch the in-between incremental steps, which are important but less evident. In addition, the authors called for a need to investigate the dynamics of mode combinations or packages, not just mode choice in isolation, as it does not adequately cover mode changes (Buckley & Ghauri, 1999).

Since the initial research from the early 1990s, conceptual and empirical work has been undertaken to elucidate our understanding of FOMs (e.g. Petersen, Benito & Pedersen, 2000; Peterson & Welch, 2002; Petersen et al., 2008; Benito et al., 2009; Pedersen et al., 2002; Swoboda et al., 2011; Benito et al., 2011; Benito, Dovgan, Petersen & Welch, 2013). This recent stem of research has taken the dynamic aspect of modes into consideration, which comprise both transitions and modifications, like mode additions or deletions, as time elapse (Welch & Benito, 2007). In addition to such adjustments, Benito et al. (2009) depicts the concepts of mode role changes and mode packages. For the former, changes in mode roles may, for instance, occur within a specific mode, even without mode additions or subtractions. For the latter, combinations of modes may be used in various forms of packages. In this regard, Peterson and Welch (2002) argue that they sometimes might be utilized purposely as temporary configurations, where companies might look to enhance their position in the foreign market, before undertaking a move to a favored type of FOM configuration. In addition to this stream of research, there is a parallel to the research on the global value chain of firms (Hernández & Pedersen, 2017; Contractor, Kumar, Kundu & Pedersen, 2010; Rodríguez, & Nieto, 2016; Eriksson et al., 2014). This field also highlights the importance of activity, location and corporate dimensions by taking the value chain activities as the main unit of analysis. Coupling the ideas of these complementary fields might shed further light on firm's foreign operations and how to orchestrate these to gain competitive advantage.

Motives of Internationalization and FOM Combinations and Changes

Behind the choice of FOMs there are motives, as in accordance to Benito's (2015) argument, which posits that motives seemingly define the essential nature of internationalization. In extant literature, four main motives have been identified as market-seeking, efficiency-seeking, resource-seeking and (strategic) asset-seeking (Dunning, 1993). Motives can answer the why-question in international business and the question of how to organize and operate international business activities, and should therefore be included as an important part of FOM research.

Based on the conceptual paper of Benito (2015), firms seek internationalization for different reasons, and it is expected that they might enter different markets. Distance is likely to be particularly important for firms in the B2B market. Such market-seeking firms tend to set up greenfield subsidiaries so that they can safeguard branded assets. Distance might also be of importance to efficiency-seeking companies, as distance leads to costs in transportation and management. For instance, firms can achieve efficiency benefits through detaching certain activities through offshore outsourcing. In addition, resources are not evenly distributed geographically, thus the reason for existence in specific markets might be explained by access to critical resources. Moreover, strategic assets seekers likely seek locations with vibrant clusters, highly developed markets, and urban centers, when choosing activity location (Narula & Santangelo, 2012); and they would likely put an emphasis on the importance of control as an important factor. Still, it is vital to understand that motives do not provide adequate justification for any form of foreign business activity, in themselves (Benito, 2015). Besides, various motives may occur in parallel. For instance, firms may conduct a variety of foreign value activities concurrently; they may be undertaken due to various motives, where no single motive necessary is dominant to the others (Benito et al., 2009).

In this vein, mode combinations can be utilized to serve the various motives in firm's international operations. Initially, combinations could be established as an emergent strategy (Mintzberg, 1978). With the dynamics of the international context, firms over time shape themselves with more deliberate strategy to help the firm improve its international market penetration (Calof, 1993). Through case studies of 6 Norwegian firms, Benito et al. (2011) demonstrate that firms combine

FOMs to facilitate their adaptation to foreign political mandate, local market conditions and to deal with the complexity of product differentiations in order to serve market needs. Additionally, Benito, Pedersen and Petersen (1999) provide theoretical argument that firms change their FOMs through mode learnings and reexamination of inappropriate premises. From external sides, firms can also make changes as a reaction to the dramatic changes in the foreign markets or increased competition. For internal factors, the change of organizational conditions and the preferences of risks make firms prone to mode changes. Moreover, current empirical analysis of mode changes is dominant in mode increase or mode decrease, with limited analysis to consider both factors (Swoboda et al., 2011). Through empirical analysis of mode changes in German firms, the authors state that both internal environment and executive attitudes stimulate the mode increases. Host market performance and external environment are more related to mode decreases. However, the authors point out that further research is needed to analyze mode changes in other countries and evaluate firms with and without mode changes, in addition to longitudinal study of dynamic mode changes with both primary and secondary data analysis.

Evaluation of Mode Combinations

To properly measure the antecedents and consequences of different mode package choices, various mode combination classifications are provided. Based on the level of linkage among modes, mode combinations can be classified into unrelated, segmented, complementary and competing modes (Peterson & Welch, 2002), and they may vary in purpose of use. When firms use unrelated modes in a foreign market, the modes operate with no interconnection. This may reflect the operations of a firm with activities spanning different industries or markets. For segmented mode, firms employ various modes in the same market, in order to assist different segments. When it comes to the use of complementary modes, they are combined in the same industry or market, concentrating on different value activities, mutually supporting the firm to achieve its objectives. An objective here is clearly to enhance efficiency, without being grounded in any specific segment. Firms operating with competing modes use more than one mode with different ownerships and within different locations, where they compete with each other in the same segment(s) and within the same activities. Extant research has not

comprehensively explored how mode combinations develop, or how they might influence substantial mode changes (Benito et al., 2009; Benito et al., 2011). Additionally, the nature of the intra-connection amidst various combinations of modes has not been thoroughly investigated up to date (Petersen & Welch, 2002). One attempt to demonstrate such interdependencies amidst FOM decisions is a numerical level conceptual paper by Asmussen, Benito and Petersen (2009). They re-configure the FOM portfolios at both activities interdependencies and managerial capacity levels. For the interdependencies, the researchers take one step further to classify mode combinations not only by the FOM diversities across space, but also by the FOM fluctuations in regard to dynamic changes over time.

Mode Configuration and Actions

After the evaluation and comparison of mode combination categories, the choices set (i.e. mode configuration or packages) is further made, which are to some extent not easily be unbundled. The extant research has made efforts to explain the rationale of mode actions, such as mode changes either as addition or deletion (Benito et al., 1999; Swoboda et al., 2011). However, such integrated existence of modes packages might not necessarily indicate what roles the modes are playing and at what level they are interrelated (Benito et al, 2009). Besides, the roles may change, spanning from subtle to drastically change, over time and by markets. Additionally, they can vary in importance, where one mode is likely to have a primary role (e.g. foreign market penetration), while the others play various supporting roles (e.g. a specialized role of technology transfer) (Peterson & Welch, 2002). The choice of a specific FOM in a package setting may not be concerned with its generally presumed role. Instead, it could be described by how it adds to the package as a whole. The primary mode has usually been the main or only focus in extant studies on entry mode and internationalization. Yet, supporting modes may play a key role in reaching particular outcomes for the firm. Furthermore, changes in mode roles can be described as an "unacknowledged manifestation of an increase or decrease in international commitment" (Benito et al., 2009, p. 1461). Expansion or enhancement of a role is found to be evident when sales are promising. However, there is little observation of role changes in extant research, which means there is a need for

more research in this regard as such role changes may be linked to a substantial change in the firm's foreign operation strategy.

Switching Costs

Even though there is increasing proof of substantial instability in foreign operation methods, Benito et al. (1999) argue that there has been a lack of explanation for mode transitions in extant literature, be it internally or externally (Buckley, 1983). The authors stress the importance of key impediments to mode change, such as costs or difficulties related to implementation of change. Such obstacles can be considered as switching costs, comprising take-down costs and set-up costs (Weiss & Anderson, 1992). These costs might have implications surpassing the actual decision of whether to undertake a change; where different switching cost-levels of FOMs may be important factors in themselves, affecting the foregoing mode choice (Benito et al., 1999). In general, firms can be faced with a tradeoff amidst the cost of staying with an extant suboptimal mode and the cost of switching to a more suitable mode. Due to the perception of switching costs and path-dependencies, firms might face the danger of becoming too rigid in their range of utilized modes. This is depicted in extant literature (e.g. Calof, 1993), showing that firms can seemingly get locked into one particular mode use, especially if the risk-adjusted NPV is lower than the perceived switching cost. Though, if the former surpasses the latter, this effect will likely not occur (Benito et al., 1999). Besides, a higher discount rate and greater difference in time profiles amidst switching costs and net income streams can lead to a higher chance of lock-in occurrence. In this regard, Buckley and Casson (1981) have also shown that the chance of stalling an optimal mode switch can escalate.

One potential solution is that new entrants could decide to forgo a low-commitment entry mode through leapfrogging in favor of a high-commitment entry mode in order to avoid the anticipated switching costs (Benito et al., 1999). Although this might give a lower stream of net-benefits in the beginning, it will not require subsequent switching costs. Additionally, as firms may want to switch to a different mode after an initial entry mode penetration, Peterson and Welch (2002) state that using subtler intermediate mode changes (e.g. mode additions or roles changes) might be a better solution than a disruptive comprehensive mode switch, at a later point in time. This might help limit the loss of, for instance,

knowledge, staff, and network assets, attained in the pre-existing mode. Moreover, by examining how firms can generate good strategic options to help aid mode switches, Petersen, Welch and Welch (2000) stress the importance of building strategic flexibility in the international process, so that firms are more readily capable to switch modes in response to changing circumstances. Focusing on this from the beginning can possibly lay a solid foundation for future operation mode changes, avoiding agreements that are problematic and expensive to change. Furthermore, the authors propose a two-by-two matrix of strategies for use in negotiation for entrants and local partners, comprising the choices of either terminating or integrating operations, which can both be either concealed or revealed to their foreign partner. Besides, research on value chain flexibility further offers insight into how operational flexibility can be achieved through fine slicing and externalizing activities (Rodríguez, & Nieto, 2016).

Moreover, decision makers' general understanding of switching costs (how to assess them properly, how to include them in the decision making and how to possibly circumvent them) may be enhanced over time through international experience. As this topic has been scarcely researched, more studies on manager's perception of FOMs in regard to switching cost need to be undertaken (Swoboda et al., 2011).

Mode Experience and Learning

In general, mode experience may be accumulated in various ways, either through international inward operations (Karlsen, Silseth, Benito & Welch, 2003) or through outward ventures into other markets (Welch & Luostarinen, 1993). In addition, mode experience can be obtained through working with partners or from sole venturing (Benito et al., 2009). The accumulation of mode experience leads to greater mode knowledge. However, this might not be exclusively positive as it can lock firms into the use of existing modes instead of searching for other alternatives, i.e. mode inertia. Furthermore, managers may cling to their past choices as they face an array of various options (Ellis, 2000), operate with a confined choice set (Hutzschenreuter, Pedersen & Volberda, 2007; Larimo, 1995), or inappropriately generalize mode choice, where they employ priory successful modes in new situations (Chetty, Eriksson & Lindbergh, 2006). Through such experiences firms undertake mode learning, which can be seen as a crutial factor

for mode change (Johanson & Vahlne, 1977, 2006). In a case study of offshore outscoring (Benito et al., 2013), the academics found that as the firm studied lacked previous experience with the chosen operation mode, location, and foreign partners, therefore it had to engage in mode specific-, contextual-, HR- and relational learning.

In sum, based on Benito et al. (2009), the aforementioned depictions comprise the comprehensive framework on mode choice and change. The full model also contains a feedback loop, underlining the dynamic and evolving characteristic of FOM. To the author's knowledge, the framework has only been partially empirically investigated (e.g. Benito et al., 2011; Benito et al., 2013). Therefore, to obtain a richer understanding of FOMs, research in this vein is highly warranted.

Classification of FOMs

Over the past decades, a variety of mode types have been identified, however, Petersen et al. (2008) argue that the potential borderline of mode configuration can be seen as endless. What is interesting, in this regard are the underlying factors that the classification is based on. For instance, Anderson and Gatignon (1986) term 17 mode types which are classified by the levels of control, commitment, and risk; while Brouthers and Hennart (2007) distinguish amidst contractual and equity modes, a dimension based on ownership. Moreover, in empirical studies, researchers have often chosen to focus on some specific modes, often with a focus on only one value activity (Hashai et al., 2010). However, these studies do not reflect the more "messy" reality of the FOM construct, which is observable in the real world (Benito et al., 2009). However, the aforementioned classifications are based on entry mode research, which does not encompass a dynamic aspect or the concept of multiple mode use.

FOM Diversity Matrix

Petersen et al. (2008) propose a matrix building on Porter's (1986) activity configuration grid, which depicts value activities and their locations. The authors add corporate diversity as an additional factor, creating a matrix configuration describing firm's mode configurations in terms of value activities, their location and the corporate diversity. Such an approach opens up for identifying a higher

level of mode diversity and change possibilities, than that of most extant research in the field, which has not managed to capture this comprehensively. As proposed by Petersen et al. (2008) this study regards the FOM diversity matrix as configured on the following three levels:

Activity: Porter (1986) makes distinction amidst functions, e.g. marketing, which then again encompass many different activities, e.g. market analysis. In order to justify the employment of an individual value activity as the unit of analysis, certain scale and distinctiveness is offered through various value configurations (Stabell & Fjeldstad, 1998). Different value activities commonly differ in various ways with respect to economic scope, strategic significance, resource need, in the level of asset specificity, and so forth (Petersen et al., 2008). Thus, there is often a different governance forms and locations configuration for various activity types. Additionally, it is postulated that the location of high knowledge intensive activities is located where their skills and competencies can be found, while low knowledge intensive activities are located where there is low cost of conducting such activities (Mudambi & Venzin, 2010; Mudambi & Puck, 2016). Besides, undergoing such fine slicing of activities will likely give the firm more cost efficiency and flexibility. In regard to such slicing, it can also be beneficial to distinguish amidst various activities, are they core high value-added activities, essential activities that helps sustain profitability or non-core activities which can readily be outsourced (Contractor et al., 2010; Hernández & Pedersen, 2017). Still, even for high knowledge intensive activities like R&D, contracting out through offshoring yielded better performance for the firm (Rodríguez, & Nieto, 2016).

Location: The simplest analysis of location is a dichotomy, one focal country in addition to home country, which seems to have been the most commonly applied distinction for the location factor. However, firms usually operate in multiple locations spanning various activities, although they usually only have one home country. Research in this regard has looked at matching the characteristics of certain value activities with the features of a host country (e.g. Demirbag & Glaister, 2010; Jensen & Pedersen, 2011), which does not properly illustrate geographical scope, nor its link with governance (Hernández & Pedersen, 2017). Various reasons for location choices have been identified, e.g.

market size, institutional environment (Contractor et al., 2010) choosing areas with cost advantageous labor markets (Bucky & Ghauri, 2004), or locations offering productivity growth within vibrant clusters (Porter, 2000). Uncertainty of the contextual environment can be seen as issues the firm needs to be aware of when entering a new market, and it comprise the ability to protect assets, level of corruption, local legislation, economic climate and institutional voids (Phene & Tallman, 2012; Haakonsson et al., 2013; Sartor & Beamish, 2014). Additionally, spatial boundaries of culture, with either its alignment or dis-alignment of national, linguistic or other boundaries, (Braudel, 1995; Shenkar, 2001) can also affect the location choice.

Corporate: At this level, the diversity comprises the complete FOM matrix where decisions are made at both activities and location levels. Here each cell of matrix is filled with different types of governance form. Five basic governance forms are proposed (Petersen et al., 2008): market or arm's length exchange, equity sole venture, equity joint venture and non-equity agreements. Based on principal-agent theory, Petersen et al. (2008), further categorize the non-equity contractual agreements. They are further broken down into four categories, contracting out comprise outsourcing (e.g. conducting offshoring of activities to foreign markets) and licensing out, while contracting in can be divided into licensing in and insourcing (e.g. undertaking turnkey projects in foreign markets). These five forms are somewhat resembling those presented (by Gereffi, Humphrey & Sturgeon, 2005) in the literature review of global value chains by Hernández & Pedersen (2017). Here it is distinguished amongst market on the one side where price historically is seen as the key determinant (Gereffi & Fernandez-Stark, 2011), while there is a tendency for more connection amidst firms related to the global values chain. In this vein, a network of connected firms is orchestrated by a major firm, which offers trust and depicts power in turbulent environments (Buckley, 2016). On the other end one has the hierarchy, which is found to be more common when products are complex, tacit knowledge is involved and suppliers of components are difficult to find (Gereffi & Fernandez-Stark, 2011).

Both empirical and conceptual investigations have been newly applied to this Activity-Location-Corporate diversity matrix. Hashai et al. (2010) perform panel data entry modes analysis of Israel top publicly listed industrial firms in a

timeframe of four years. The investigation extends the traditional foreign market entry mode analysis from only one entry mode market to many entry modes along firm's value chain in diverse markets, with especial focus on technological knowledge intensity. The authors reveal that organizational learning have positive effects on entry mode diversity at both location and corporate levels, while less influences at the activity level. In addition, when value chain activities are less adhered, such industries (e.g. textile) have a greater diversity at location level. While technology intensive industries tend to have diverse entry modes in each chain activity. Future research is needed to focus on other factors, e.g. firm-specific characters, culture distance and institutional gaps, to capture institutional differences and firm specific features in addition to technology-intensity as explanatory variables; and it is requested to use up to date and longer periods data to capture the dynamic of FOMs. In addition, through multiple case studies of six Norwegian firms' FOMs (Benito et al., 2011), the research discovers that various mode combinations are not just temporary phenomena, they enlarged rather than reduced over time. Unique mode packages are employed to certain activities and locations with a dynamic trend. Besides, the theoretical research from Benito (2015) contends that different value activities are often associated with certain motives: marketing and sales are related to market-seeking; manufacturing are linked to efficiency-seeking activities; extraction and production (e.g. in oil and gas industry) is interrelated with resource-seeking; and R&D activities are associated with strategic asset-seeking intention. Still, future research is desired to investigate the behavioral aspect of management issues.

4. OIL FIELD SERVICES: A GLOBAL OUTLOOK

4.1 A Current and Historic Industry Overview

Prior research of OFS operations on the NCS has identified an industry value chain comprising six categories: Reservoir/Seismic, Exploration & Production – Drilling & Well, Engineering Fabrication & Installation, Operations Support and Decommissioning (see Ramsøy & Qvigstad, 2014). While the activities are not necessarily strictly sequential, the first part of the chain is associated with the earlier stage of the oilfield development and the latter is associated with the later stage of field developments. This categorization of the industry serves as subcategorization of the industry in this paper.

Besides the oil and gas industry, the oil and gas service and supply industry is ranked as the second largest Norwegian industry measured by turnover (Regjeringen, 2016). This industry inhabits around 1 250 firms, which possess both high level expertise and international competitiveness (RystadEnergy, 2015). In 2014, the industry had a total turnover of NOK 527 billion, where 37% of the earnings were generated from international markets. In this vein, the key markets, measured by turnover were South Korea, UK, Brazil, US and Australia. Till 2014, this industry mainly saw growth. However, mid 2014 the industry took a downturn, leaving a turbulent environment for many OFS, which is still continuing to date, with revenues continuing to decrease by 27% more in 2016, compared to the average of 2015 (RystadEnergy, 2016). In reaction to continuous prize-fall on oil field services, cost cutting, lay-offs and organizational restructuring have been undertaken (Ramsøy et al., 2016). Additionally, it was observed that OFS firms focused on building alliances in 2015, while the focus shifted towards consolidation in 2016 (e.g. M&As of TechnipFMC and GE-BHI being the most prominent). In addition, firms are increasingly starting to consider different contractual set ups. In this regard, it is postulated that risk, profit and resource sharing have been important factors for improving the firm's margins (RystadEnergy, 2016). Although, representing an industry going through difficult times it is forecasted that the global industry will move toward growth, with CAGR of 3.35%, in the period 2017-2022, to represent a 125.51 USD billion market by 2022 (PRNewswire, 2017).

Historically, through the industry growth OFS firms have accumulated an enormous export capacity and they are now percent in the entire world (Brandvold, 2017). There are various reasons for why these Norwegian vendors have gained such a strong position internationally. First, right from the start the Norwegian authorities developed a strong Norwegian oil industry through their concession policy, for both operators and supply companies. In this regard, they put significant weight on local content, R&D contracts, etc., when awarding licenses, which they were able to do before the EØS agreement was ratified (Egner, 2017). The good cooperation amidst the government, the actors in the industry and the unions, were also a crucial ingredient in the successful recipe (Brandvold, 2017). Second, the Norwegian industry had considerable expertise within the fishery and the maritime industry, which had many local entrepreneurs

and ship owners with huge risk willingness and an international approach. Besides, many of these firms also had prior experience form specialization in fabrication and construction (Zhovtobryukh et al., 2013). Third, the Norwegian continental shelf was more demanding for the industry that had its greatest experience from areas with more favorable environmental conditions, as the Mexican Gulf. Therefore, Norwegian firms especially had to seek new solutions that were better adapted to the conditions in the North Sea, in order to be able to compete with firms from the American industry. This, for instance, resulted in the H-3 rig platforms, Condeep platforms, transport of gas in LNG cold tankers, etc. which was a great success and it received attention from the international oil industry (Enger, 2017). Fourth, Norwegian oil companies had a close cooperation with the indigenous supply industry, in order to develop and try out new solutions. Besides, it was natural for both the international and Norwegian operators to draw the Norwegian supply industry into projects that could make use of the technology that had proved competitive in North Sea. Finally, Norway has many talented engineers who got a powerful stimulus through the oil business. The North Sea and the Norwegian Continental Shelf (NCS) was in many ways a laboratory for the development of new offshore technology in almost all parts of this industry (seismic, reservoir modeling/simulation, platform technology for the boing and development, underwater solutions, two-stage technology for transport, LNG transport, etc). The oil production on the NCS resulted in the creation of a global knowledge hub, which attracted both talent and investments, leading to a surge of innovation (Sasson & Blomgren, 2011; Zhovtobryukh et al., 2013). This notable industry development in the home country has therefore received attention in previous research (Sasson & Blomgren, 2011; Reve & Sasson, 2012; Zhovtobryukh et al., 2013; Ramsøy & Qvigstad, 2014; Ramsøy et al., 2016). However, the international actives of these firms have yet to be comprehensively explored. Additionally, despite the historic positive development, the industry is in a current downturn on a global level. Thus, going from growth, to a historic peak, and then to a drastic downturn, serves as an interesting context to investigate how firms in this industry has configured and evolved their foreign operations.

5. RESEARCH DESIGN

To the best of the authors' knowledge, there is shortage of research that conduct both quantitative regression and qualitative case studies to analyze the dynamic foreign operations and mode combinations of one single home country in a longitudinal study. Thus, the study will employ a mixed method embedded sequential design (Bryman & Bell, 2015). In this vein, our study starts with quantitative secondary data gathering, followed by three case studies of distinctive firms. In general, data triangulation will be undertaken, where the quantitative analysis helps in building a more accurate picture of reality, and it is used to compliment the richer qualitative data gathered through the interviews with company informants (Bryman & Bell, 2015). Moreover, the use of triangulation can be pertinent for validation of the gathered data (Piekkari, Plakoyiannaki & Welch, 2010).

The first part of this study will be undertaken to outline a general picture of how the Norwegian OFS industry conducts their foreign operations. The descriptive picture will be taken on the basis of five points in time, depicting the industry at different stages in the business cycle (Bryman & Bell, 2015). Such quantitative analysis is called for by authors, stressing the need to also include firm performance in the analysis (Hernández & Pedersen, 2017). Moreover, analyzing the phenomenon of mode diversity within the proposed matrix with the added temporal dimension can offer intriguing insights in line with the postulation of Contractor et al. (2010), stating that firm's competitive advantage lies in the capability to analyze, coordinate and optimize the dimensions of activities, locations and corporate governance.

For the latter part of this study, the qualitative analysis will utilize both secondary and primary data; as such combinations are generally seen as apt for empirical studies (Saunders, Lewis & Thornhill, 2000) and might mitigate issues as common method variance (Swoboda et al., 2011). The qualitative design will take a descriptive case approach (Benito et al., 1999), and the time perspective will be longitudinal, tracking the three cases all the way back to the founding of the firms. Moreover, authors have commonly called out for undertaking longitudinal studies within this field of research (Pedersen et al., 2002; Asmussen et al., 2009; Benito et al., 2009), as most studies on mode choice has been cross-

sectional (Brouthers & Hennart, 2007). Although some studies have recently utilized a longitudinal perspective, the tracing either comprise a relatively short time period (Benito et al., 2011) or focus on only one type of mode (Benito et al., 2013). A multiple case methodology is chosen, especially as it is pertinent for tracing complex longitudinal processes (Blazejewski, 2011; Pratt, 2009; Soulsby & Clark, 2011). Additionally, it is chosen as it is fitting for exploring firms with different mode packages, obtaining rich data variance and diversity (Pauwels & Matthyssens, 2004; Petersen et al., 2008). Besides, as our research questions contain wording such as "how" and "why," case study methodology can be seen as an appropriate research approach (Ghauri, 2004). Furthermore, the choice of method follows the argument of Benito et al. (2011), which posits that the in-depth investigation of a case approach is particularly apt for research on the dynamic concept of mode packages, broken down by value added function, country and corporate structure.

6. QUANTITATIVE DATA ANALYSIS

6.1 Quantitative Data and Methods

Three Levels of Foreign Operation Mode Diversity

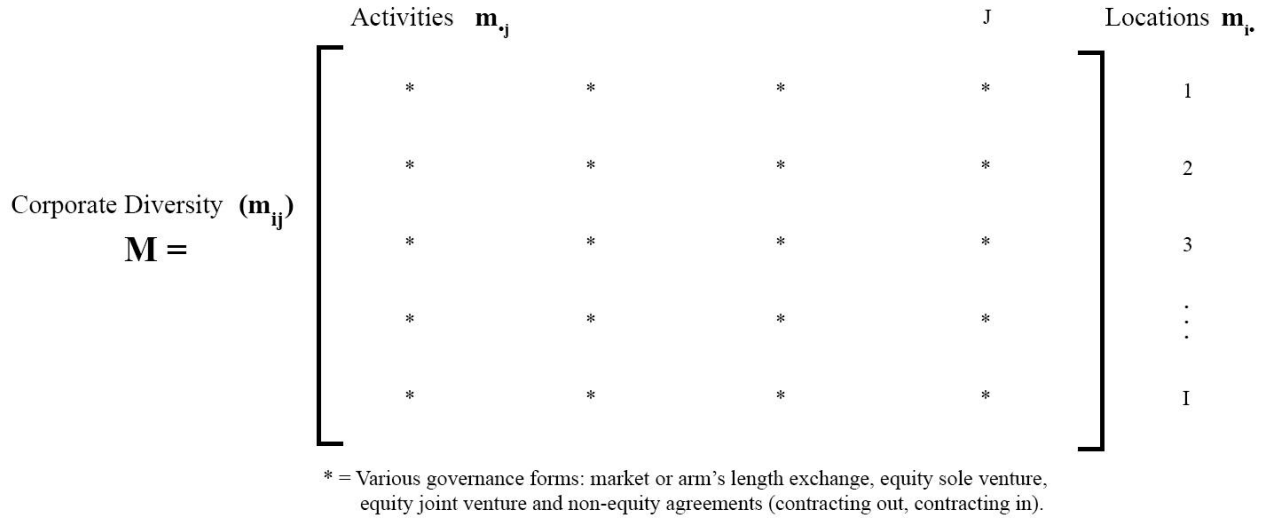
This study utilizes the classifications in the FOM diversity matrix proposed by Petersen et al. (2008) as the first step to conduct the secondary data coding and quantitative analysis. For instrumental purpose regarding to the coding, we restrict ourselves to the specified location-, activity-, and corporate-level categories proposed in the extant conceptualization of the matrix model, depicted below (Figure 1).

- For the *activity level*, the diversity represents a vector $m_{\bullet j}$, where j = 1, 2 … J. The analysis focuses on various value-chain functions, in addition to possibly employing value-shop functions for firms adhering more closely to such an activity configuration (for detailed descriptions see Stabell & Fjeldstad, 1998).
- For the *location level*, the diversity represents a vector $m_{i\bullet}$, where i = 1, 2 … I; this study looks at OFS firms from one home country, Norway, and identify the locations of their foreign operation(s).

- The *corporate level*, denoted as M = (m_{ij}), represents the entire matrix, where each cell is filled in with decisions of governance forms made at both activity and location levels, where the employed governance dimension in this study is based on the five dimensions identified in Petersen et al. (2008).

The unit of analysis is at the corporate level comprising the different activities in use, their location and their structure. As mode packages components and their roles are bound to differ due to a variation in external factors like government regulations and market pressures (Luostarinen & Welch, 1990), it can be of interest to look for differences amidst entrances into diverse markets.

Figure 1: Diversity Matrix



Data Gathering

In order to get an overview of FOM diversity of Norwegian OFS industry, the coding and regression methodologies are mainly based on the research from Hashai et al. (2010); Lee, Kelly, Lee & Lee (2012) and Benito (1997). The descriptive data gathering was obtained from multiple sources. Originally, there were 242 firms included in a list of Norway's OFS firms. The list was obtained from prior research conducted at BI Norwegian Business School. After removing foreign firms, 209 firms remained. A questionnaire survey was then designed and sent to this list of indigenous OFS firms in Norway. In addition, further secondary data collection by random selection of companies in the list was conducted through various databases, e.g. Proff Forvalt, MarketLine and Factiva. These provided us information on both financial and organizational information and

international data, in the form of strategic alliance, JV, M&A and greenfield. Additionally, information was gathered from organizational websites and documents, and mass media outputs, which was further coded into our final data file (Bryman & Bell, 2015). In order to get balanced panel data, we further excluded firms lacking any variable in the five-year time span from 2011 to 2015. Thus, the final dataset has 45 firms—containing both private and public owned firms—which include both secondary data gathering and questionnaire data.

Building on Hashai et al. (2010), the overall dataset depicts the choices of different FOMs at both individual country level and value-added activity levels. To ensure that both researchers are consequent in their coding, a coding manual was designed and employed for the process of collecting data. Our sample captured the recent economic movement of both peak and low points in time (2011—2015) (Alix Partners, 2017) in order to capture changes in the FOMs (Hashai et al., 2010) and to avoid survival bias from the study. The firms without any history of foreign operation(s) within the upturn and downturn period is excluded from the investigation.

Dependent Variables

Building on (Hashai et al., 2010), an FOM is coded if the firm has an existing mode, mode addition, mode changes or mode deletion spanning diverse value-added activities in a foreign country. Thus, the main types of FOMs (Brouthers & Hennart, 2007; Petersen et al., 2008) are detected at each value-added activity and each country:

1. Arm's length exchange or market-based mode (e.g. sales agent or distributor)
2. Non-equity contractual mode (e.g. contracting in and out, strategic alliance)
3. Partly owned equity mode (e.g. joint venture)
4. Wholly owned ventures mode (e.g. greenfield, mergers and acquisitions)
5. Dissolve (e.g. divestment)

In total, 255 in 2011 (361 in 2015) FOMs are coded in the panel data, where there are 32 (44) market-based modes, 36 (69) non-equity contractual modes, 13 (18) joint ventures, 173 (222) wholly owned modes and 1 (8) divestment. The

classification of FOMs is further served as the basis for the computation of the three levels of diversity measures and degree of knowledge intensive value-added activities (for the latter, see section *Independent Variables*).

By applying a similar methodology as Hashai et al. (2010), *location-level diversity* measures the variation of FOMs across activities within a given country. Here, entropy—a widely used diversity measure—is an index which measures FOM diversification (Hitt et al. 1997, Hashai et al. 2010), defined as

$$\text{Level of Diversity} = \sum_i [M_i \times \ln(1/M_i)]$$

where M_i is the proportion of individual FOMs in a given country (*i*) falling into the five defined FOMs. The overall location-level diversity is the averaged diversity across the foreign countries where the firm has operated in. According to Hashai et al. (2010), the merit of this measure is that it not only calculates the amount of FOMs conducted in diverse locations but also the distribution of modes across these FOMs. *Activity-level diversity* is defined as the extent of FOM diversification across foreign markets for a specific business activity. A similar entropy measure is employed where *i* here represents an individual value-added activity other than a country. *Corporate-level diversity* is a measure of overall FOM diversity in the firm matrix, which considers the variations at both location and activity aspects.

Independent Variables

Following earlier research from Hashai et al. (2010), this paper applied three explanatory variables. *Value creation logic* measures the degree of a knowledge intensive activity performed in a FOM. Based on the value configuration logic from Stabell and Fjeldstad (1998), we coded routinized activities (i.e. manufacturing, logistics, sales and marketing and after sales service) as 1; knowledge intensive activities (i.e. engineering, consulting and R&D) as 2. Therefore, the value creation logic is the weighted average of both types of activities in a firm, with the value ranging from 1 to 2. This variable is used as a proxy for technological knowledge intensity. Though in previous studies (e.g. Teece, 2008; BCG, 2017), researchers suggested that as gross margin has a strong correlation with technology intensity, gross margin could be considered as a measure for technology intensity. However, gross margin registered in Proff

Forvalt does not capture the human capital on technology investment (e.g. salary paid on conducting R&D activities). So, by using the gross margin [gross margin = (Revenue – Cost of Goods Sold) / Revenue], it does not take into account the expenditure on human capital. Additionally, the authors also tried to use R&D expenditures to sales ratio (Hashai et al, 2010). Since the financial information released by Proff Forvalt is only at the intangible assets to sales ratio level, where intangible assets could also include some other items (e.g. goodwill, patents and licenses) than R&D expenditures, the ratio is prone to biases.

Cultural distance represents the firm's average culturally distance between the home market (i.e. Norway) and its host markets (i.e. various foreign markets). Here, the average of absolute values among Hofstede's six dimensional indices (i.e. power distance, individualism, uncertainty avoidance, long term orientation and indulgence) is employed (Kogut & Singh, 1988; Pedersen, Petersen & Benito, 2002). The higher the absolute value between two countries, the larger the cultural distance is between them. The overall value of cultural distance is a weighted average result at the company level.

Level of ownership describes the degree of ownership on a firm's FOM package. Therefore, the above mentioned five types of FOMs are further coded based on their ownership degree ranging from 1 (market-based mode) to 4 (wholly owned mode) and -4 for dissolve (Brouthers & Hennart, 2007; Petersen et al., 2008). The weighted average of ownership degree among all five types of FOMs is further calculated in order to obtain overall FOM ownership level at the corporate dimension.

Control Variables

As it has been widely discussed by previous studies (e.g., Contractor et al., 2003; Hashai et al., 2010), firms might subject to various "liabilities" which tend to impact on their behaviors when conducting foreign operations. *Firm size*, which is measured by total revenues in a fiscal year, is used to capture the firm's economics of scale and control for the liability of smallness. From the descriptive statistics, it is found that firm size in sample data is heavily skewed to the right; and the log transformation are further conducted. *Founding year* of the headquarter is applied to describe the firm age. It is used to control for the liability of newness and the managerial experience. Moreover, *subindustry* is introduced to

control for the specific characteristics of subindustry effects. Based on Ramsøy and Qvigstad (2014), the OFS could be classified into the following subindustries, which was further coded ranging from upstream to downstream: reservoir / seismic (1); exploration and production (drilling and well) (2); project development (3); engineering fabrication and installation (4); operations support (5) and decommissioning (6).

6.2 Quantitative Analysis and Results

In Table 1, the descriptive statistics and correlation coefficient matrix with p-values are provided. In the sample, the average founding year of the firms was 1985. The average total revenue was NOK 821.9 million (NOK 768.0 million in 2011 and NOK 768.9 million in 2015 with the average sales peak of NOK 906.2 million in 2014), and intangible assets accounted for 13% of the total sales (decrease from 24% in 2011 to 7% in 2015). In addition, the average of value creation logic was 1.54 which fluctuated smoothly through the sample period. This indicates that the sample firms are small-and-medium-sized companies with high growth until 2014, but then a deep dive in 2015. Although the intangible assets to sales ratios shrink throughout the sample period, the level of value creation logic remains stable at a higher level of knowledge intensity. For the three-level diversities, the activity-level diversity is higher than the location-level diversity. Moreover, a statically significant correlation among three-level diversities could be seen from the sample. The overall corporate level diversity slightly fluctuated around 0.18 between 2011 and 2013, and increased to 0.20 since 2014.

The panel data modes are used to investigate the changes within OFS sample data over a time span. Such hierarchical modeling allows the authors to capture both cross-sectional firm specific and temporal effects. Following a similar methodology as Hashai et al. (2010), three models are introduced: *pooled OLS regression*, *fixed effects regression* expecting individual effects are correlated to the independent variables, and *random effects regression* assuming individual effects not corrected with independent variables.

Table 1: Descriptive Statistics

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Location-Level Diversity	0.09	0.13	1									
2. Activity-Level Diversity	0.16	0.15	0.70**	1								
3. Corporate-Level Diversity	0.18	0.16	0.60**	0.89**	1							
4. Value Creation Logic	1.54	0.37	0.06	0.19**	0.11	1						
5. Technological Knowledge Intensity	0.13	0.42	-0.04	0.04	0.03	-0.06	1					
6. Culture Distance	22.69	6.46	0.24**	0.28**	0.30**	0.68**	-0.16*	1				
7. Degree of Ownership	3.37	0.92	-0.51**	-0.34**	-0.35**	0.06	0.00	-0.23**	1			
8.Performance (ROA)	3.71	63.19	0.03	-0.11	-0.02	0.05	-0.28	0.12	-0.10	1		
9. Firm Size (revenues in million NOK)	821.9	1,668.0	0.04	0.08	0.10	0.26**	-0.16*	0.22**	0.20**	-0.10	1	
10. Founding Year	1985	26.9	0.03	0.11	0.04	0.12	0.18*	-0.08	-0.07	0.04	-0.28**	1

** Significant at p=0.05*

*** Significant at p=0.01*

The results of three-level operation mode diversities are provided in Tables 2, 3 and 4. Except fixed effects models, the regression results of the other two types are presented with two versions—both exclusive and inclusive the three control variables. The interpretation of the coefficients is that the marginal utility of an independent variable relative to the specific level of diversity. A positive beta coefficient means that for a given firm, as an independent variable increases a unit across time, the diversity at one specific level increases by beta units and vice versa. Standard errors are shown in parentheses. In total, 225 observations are applied with yearly observation for each of the 45 firms in a five-year span.

For all three-level FOM diversity models, time-variant predictors of fixed effects models raise the amount of variance explained of the pooled OLS regression from around 20% to around 90%. Unlike Hashai et al. (2010), by running the fixed effect vector decomposition models (Plumper & Troeger, 2007), none of the independent variables has any statistical significant explanatory power on all three levels of diversity, which is in line with the paper from Breush et al. (2011b). The researchers criticized that no impact of the stage three of the FEVD estimators are discovered on estimated coefficients. Thus, the results from the fixed effect vector decomposition are not presented here.

Table 2: Regression Analysis of Panel Data (dependent variable: location-level operation mode diversity)

Dependent Variable: Location-Level Operation Mode Diversity	Pooled OLS		Fixed Effects	Random Effects (GLS)	
Model	1	2	3	4	5
Value Creation Logic	0.025	0.029	0.291**	0.158**	0.165**
	(0.019)	(0.016)	(0.081)	(0.054)	(0.052)
Culture Distance	0.002	0.002	0.007	0.005	0.005
	(0.001)	(0.001)	(0.003)	(0.003)	(0.003)
Level of Ownership	-0.066**	-0.066**	-0.101**	-0.097**	-0.098**
	(0.009)	(0.009)	(0.030)	(0.028)	(0.030)
Firm Size		0.012**			0.004
		(0.004)			(0.005)
Founding Year		0.000			-0.001
		(0.000)			(0.001)
Subindustry		-0.026**			-0.028
		(0.007)			(0.019)
Constant	0.220**	-0.006	-0.165	0.063	1.428
	(0.051)	(0.514)	(0.247)	(0.160)	(1.120)
R^2	0.279	0.333	0.941	0.539	0.546
F	23.54**	22.04**	11.77**		
Hausman m			40.80**		
Breusch-Pagan LM				313.74**	293.75**
N	225	222	225	225	222

** Significant at p=0.05*

*** Significant at p=0.01*

Through the F-test all null hypotheses are rejected, which means the coefficients in all three levels of diversity models are different than zero. Additionally, the results of Breusch-Pagan Lagrange multiplier (LM) test for all three diversity models support the random effects model other than the pooled OLS regression (Breusch & Pagan, 1979). By running Hausman tests (Hausman, 1978), the null is rejected and we conclude that the estimators of the fixed effects (other than random effects) are appropriate for both location- and activity-level measures; while the results for corporate-level measure are similar, meaning both fixed and random effects regression are applicable. Moreover, all regressions are controlled for heteroskedasticity and multicollinearity.

Generally, the degree of knowledge intensity in the value creation logic has a statistical significant positive correlation with both location- and activity-level diversity measures, though weaker relationship with activity-level diversity. The finding concurs with empirical findings from Hashai et al. (2010). Yet, there is no statistical strong correlation at the corporate-level diversity measure. This indicates that knowledge intensive activities seem to favor diversity both across and within geographic areas. However, when taking all these variations into the

corporate dimension, the knowledge intensive activities do not have considerable influence on the FOM diversity. In other words, one FOM does not stick to a specific degree of knowledge intensive activities; all value-added activities have diversified and to some extent shared FOM choices.

Table 3: Regression Analysis of Panel Data (dependent variable: activity-level operation mode diversity)

Dependent Variable: Activity-Level Operation Mode Diversity	Pooled OLS		Fixed Effects	Random Effects (GLS)	
Model	1	2	3	4	5
Value Creation Logic	0.076** (0.025)	0.065** (0.025)	0.258* (0.121)	0.136* (0.062)	0.139* (0.063)
Culture Distance	0.004** (0.002)	0.004* (0.002)	0.013* (0.006)	0.010* (0.004)	0.009* (0.004)
Level of Ownership	-0.053** (0.011)	-0.053** (0.012)	-0.067 (0.047)	-0.064 (0.036)	-0.068 (0.039)
Firm Size		0.016* (0.007)			0.010 (0.007)
Founding Year		0.001 (0.000)			0.000 (0.001)
Subindustry		-0.024** (0.010)			-0.024 (0.023)
Constant	0.118* (0.060)	-1.069 (0.600)	-0.300 (0.358)	-0.062 (0.193)	-0.339 (1.247)
R^2	0.196	0.239	0.900	0.320	0.326
F	17.8**	14.98**	4.37**		
Hausman m			12.21**		
Breusch-Pagan LM				294.07**	285.46**
N	225	222	225	225	222

** Significant at p=0.05*

*** Significant at p=0.01*

Culture distance has a positive relationship with both activity- and corporate-level diversities, but no significant correlation with location-level diversity. This implies that when culture distance is high, inter-locational knowledge learning is less likely than intra-locational knowledge learning. This is in line with the finding from Rugman and Verbeke (2004). Regarding degree of ownership, although it is not correlated with activity- and corporate-level diversities, it does have negative strong correlation with location-level dimension.

For all control variables, the statistically significant impact on three levels of diversity was not found in either fixed or random effects regressions. However, in the pooled OLS the firm size is positively correlated with three diversities. The liability of newness does not have a significant impact on the diversity of the firm. It can be interpreted as that both the small Norwegian domestic market and the

global OFS industry itself might leads all firms to be diversified since the beginning and remain diversified on their FOM choices. Additionally, the subindustry at the beginning of the OFS value chain seem to have more diversified FOM at all three levels than the ones at the ending of the value chain.

Table 4: Regression Analysis of Panel Data (dependent variable: corporate-level operation mode diversity)

Dependent Variable: Corporate-Level Operation Mode Diversity	Pooled OLS		Fixed Effects	Random Effects (GLS)	
Model	1	2	3	4	5
Value Creation Logic	0.043 (0.026)	0.037 (0.026)	0.0939 (0.135)	0.047 (0.051)	0.050 (0.052)
Culture Distance	0.005** (0.002)	0.005** (0.002)	0.013* (0.006)	0.011** (0.004)	0.010* (0.004)
Level of Ownership	-0.053** (0.012)	-0.056** (0.012)	-0.062 (0.051)	-0.057 (0.036)	-0.062 (0.037)
Firm Size		0.019** (0.007)			0.011 (0.008)
Founding Year		0.000 (0.000)			0.000 (0.001)
Subindustry		-0.028** (0.011)			-0.026 (0.022)
Constant	0.172** (0.065)	-0.527 (0.642)	-0.055 (0.382)	0.056 (0.180)	-0.265 (1.247)
R^2	0.182	0.234	0.876	0.320	0.326
F	17.69**	13.89**	2.84*		
Hausman m			5.18		
Breusch-Pagan LM				274.08**	267.05**
N	225	222	225	225	222

** Significant at p=0.05*

*** Significant at p=0.01*

Overall, at the location level dimension, the results show that the low degree of ownership FOM combined with high degree of knowledge intensive logic activities are conducted to quickly adopt into various locations, i.e. the OFS firms are generally quiet flexible by conducting diverse types of high technological intensive activities with low-to-medium level ownership modes (e.g. contractual FOM) to get complementary learning from various locations disregarding cultural distance. At the activity level dimension, as mentioned before we find that diverse knowledge intensive activities have a slightly weaker association with the activity level diversity than they are with location level diversity and that cultural distance has positive correlation with activity-level diversity. It could be interpreted as that intra-locational learning is easier by just performing to some extent a specific degree of knowledge intensive activities (i.e. high knowledge intensive activities

other than routinized activities) (Rugman & Verbeke, 2004). At the corporate level diversity, knowledge intensive activities do not have a significant contribution to corporate diversity, indicating that in general OFS firms conducting even amounts of routinized and knowledge intensive activities overseas (Hashai et al. 2010). Large cultural distance has a high association with the firm diversity, which further confirms that a portfolio of diverse FOM is simultaneously conducted under various activities for organizational learning.

Investigated separately from the above mentioned three dimensions of diversity, the relationship between *performance*—measured by return on assets (ROA)—and three individual levels of FOM diversity along with the predictors (i.e. degree of value-added logic, ownership degree and cultural distance) are also analyzed as supplementary. A statistical significant explanatory power is founded only at the location-level dimension. Both lagged location-level diversity and lagged ownership degree are negatively correlated with log transformed firm performance; while lagged degree of value creation logic has strong positive correlation to performance. This may indicate that a firm which has lower ownership degree, high knowledge intensive activities and less FOM variation is prone to surpass a firm which has more diversified, higher ownership degree FOM and less knowledge intensive activities. In other words, staying flexible and conducting quick adaptation is the key to fast react to dramatic market changes. However, further study is needed to test with a larger sample size, in other industries and from multiple domestic countries with a longer time horizon in order to better understand the relationship between performance and FOM choices.

7. QUALITATIVE DATA ANALYSIS

7.1 Qualitative Data Collection and Analysis

The subsequent step of this paper is to undertake exploratory quantitative multiple case analysis. In this regard, the first hand qualitative data was gathered from company informants. The informants, listed in Table 5, were reached by leveraging on the authors network. The informants were chosen as they all had long industry experience and had a high level of accumulated industry and firm's

knowledge on international operations, from their high position in the organizational hierarchy.

Table 5: Company Informants of the Case Studies

Firm	EAB Engineering	Fred. Olsen Energy	Kværner
Informant	Harald Bakke	Ivar Brandvold	Jan Arve Haugan
Title	Former CEO of EAB since 1978, prior experience from the maritime industry	CEO of FOE since 2009, prior Head of Drilling in Norsk Hydro, then in 2007 Chief Operating Officer in DNO	CEO of Kværner since 2011, former chief engineer in Norsk Hydro since 1991.
Date of Interview	26.05.2017	08.06.2017	09.06.2017

** All company information which does not have external references was gathered from the respective informants.*

In accordance with prior studies on the topic of this paper, the main qualitative data gathering instrument in use is semi-structured interviews (Benito et al. 2013). This allows for a smooth flow in the discussion, where the interview objects are able to describe memories from the past events as they are emergently recalled. It also enables the possibilities for the interviewer to probe into interesting insight and extract even deeper and richer information (Cooper & Schindler, 2014). Additionally, it opens up for the surfacing of curious topics the researchers want to follow up on, which might not have been identified prior to a specific interview (Bryman & Bell, 2015). When obtaining longitudinal information spanning a time horizon of past events, interviews can be seen as an apt way of collecting data from people that experienced and are able to recall them. Besides, Benito et al. (2011) discovered that the interview objects in their study managed to recall and contemplate such past events of mode combination use at disaggregated levels of the value chain, albeit the study only comprised a limited time period of four years. For our study purpose, it was therefore, vital that we got informants with a long history in the industry, and the analysis will focus on the time period from when our informants started as CEOs of the respective firms. In general, a standard interview guide was designed and employed, with certain variations, as firms and types of respondents differed (see Appendix). All interviews were recorded, in accordance with the respondent's consent. Besides, for the in-depth interviews Cooper and Schindler's (2014) ethical guidelines (e.g. explaining the study benefits and obtaining informed consent) was followed in order to safeguard

against ethical pitfalls. Additionally, consent for the use of actual organization name, was obtained by all of the participants.
The firms chosen for the case analysis was chosen based on access to informants and firms being in various situations in terms of firm performance. In the selection of cases, we utilized purposeful sampling, in order to select cases that are relevant to the research question (Bryman & Bell, 2015). The power of employing such an approach lies in the ability to choose cases that are rich in terms of information and display the relevant characteristics for theory application (Eisenhardt, 1989; Patton, 1990).

All interviews were transcribed before undertaking the qualitative data analysis. The narration of the development of the individual firm's international evolution will be subsequently elucidated through the use of thick descriptions, followed by a cross-case analysis in order to identify differences and similarities (Cooper & Schindler, 2014). In the analysis, an inductive approach will be utilized, where case inferences will be drawn out and generalized to theory (Bryman & Bell, 2015). Furthermore, the case method is increasingly used in research which aims to test theory, and in accordance with the critical realist perspective, it can be seen as a suitable approach to such investigations (Benito et al., 2011). Thus, our analysis will also bear such a characteristic.

7.2 Case Overview

This section investigates three distinct cases of OFS firms, summed up in Table 6. In line with the mode diversity matrix, the firm's foreign operations are analyzed comprising the three components of activities, location and corporate governance (Petersen et al., 2008; Hashai et al., 2010), in order to get a more thorough understanding of the phenomenon.

Table 6: Case Overview

	EAB Engineering	Fred. Olsen Energy	Kværner
Corporate Governance	• Owned by Schlumberger • Operating within the OneSubsea division	• Listed on the Oslo Stock Exchange • Largest owner is Bonheur, run by Fred. Olsen & Co.	• Listed on the Oslo Stock Exchange • Largest owner is Aker Kværner Holding (which is a daughter of Aker)
Sub-Industry	• Engineering Fabrication & Installation	• Exploration & Production - Drilling & Well	• Engineering Fabrication & Installation
Business Area and Activities	• Subsea • Engineering, Consulting and Manufacturing	• Mid- and ultra-deep waters • Operational service	• Offshore and onshore - upstream oil and gas • Engineering, Procurement, Construction and Manufacturing
Year of Governance Change	• 1952: founded as a personal firm - 1970: Even A. Bakke AS • 2000: partial ownership by Mjørudgruppen. • 2004: the shares of Mjørudgruppen are bought by Framo Engineering. • 2012: Schlumberger buy Framo Engineering • 2013 Cameron and Schlumberger creates OneSubsea as a strategic alliance • 2015: Schlumberger buy Cameron and become sole owner of OneSubsea which again is the sole owner of EAB Engineering.	• 1848: Fred. Olsen & Co, the family of Fred. Olsen started up in the shipping industry • 1997: FOE was formed, comprising all the energy associated activities in the Fred. Olsen firms.	• 1853: original year of founding. • 2002(4)-2008: Merged with Aker and became Aker Kværner • 2008-2011: Aker Solutions • 2011: spun-off, became Kværner
Historic Internationalization Experience	• 1st export in 1961, for subsea in 1994	• FOE has always been an international company	• Grew historically through M&A • Had three major international operations in 2011 after the demerger
Size (sales figures and employee count)	• NOK 220 million • 60-70 employees	• NOK 7.3 billion • 727 employees	• NOK 10.4 billion • 3 500 employees
Firm Performance	• Good performance - growth	• Average to week performance – on its way through a severe decline	• Average to good performance – see growth

EAB year of governance change is gathered from: http://eierskiftealliansen.no/wp-content/uploads/2016/09/160831-Harald-Bakke.pdf; additional firm info gathered from kvaerner.no and fredolsen-energy.com; additional firm size info gathered from proff.no.

7.3 EAB Engineering AS

Case Background

EAB was originally started as a family firm, conducting all types of mechanical engineering. The firm was taken over by Harald Bakke in 1978, who decided to specialize in subsea engineering in the late 1980s. Historically, Norway has been EABs main market, growing domestically in the context of a strong Norwegian market. Through 2000-2010 EAB's international operations were mainly conducted through their customers, it was only after the firm was bought up by Schlumberger, and incorporated into OneSubsea (OS) that EAB really started to

work more internationally. After the acquisition by Schlumberger the prior CEO, Bakke, stepped down but continued to work in the organization, with the focus of marketing EAB into the much larger OS organization. In this regard, he believed in selling in EAB's know-how and services to OS, which turned out to rather well. Through such relational actions, Bakke likely affected the role of EAB within Schlumberger, making the firm an important WOS (Benito et al., 2013) and today EAB is the only unit in Schlumberger which is growing. EAB's main foreign operations are depicted in Table 7.

Table 7: Cross Sub-Case Analysis EAB

	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5
Country of the FOM	Egypt	Australia and West Africa	China	Czech Republic	India
Type of Activities	Manufacturing, Engineering tenure, Operation Services, Exporting	Exporting	Manufacturing	Manufacturing	Engineering tenure
Type of FOM	Arm's length → contracting out through offshoring (to Petrojet) + contracting in for turnkey projects	Arm's length → *increased level of export* → *decreased level of export**	Contracting out through offshoring (to Himile)	Contracting out through offshoring	Contracting in for turnkey projects + Strategic alliance with Subsea7
Year of FOM Changes	2006→2010 →2017	2002 →*2007* → *2013*	2008	2009	2017
Size of the FOM	Medium	Medium	Small	Very Small	Small
Dynamics of Operation Modes	Moderate	Low	Low	Low	Low

** For all the organizational tables, within mode changes are marked in italic, gray text mean in process of happening.*

Activity

As a value shop, the engineering firm EAB conducts most of its knowledge intensive activities in the home country (Stabell & Fjeldstad, 1998), though the firm still conducts international value-added activities. One reason for Norway hosting the main portion of knowledge intensive activities can be linked to the strong subsea environment in Norway, where skills and competencies can be found (Mudambi & Venzin, 2010; Mudambi & Puck, 2016). For activities with high knowledge intensity, such as engineering and consulting, EAB tends to use the mode of contracting in through turnkey projects, which also include more routinized operations support activity in the location with highest mode diversity. Additionally, the former mode is also coupled with a strategic alliance in India. As these locations can be regarded as having higher level of cultural distance, it

aligns with the finding of the quantitative study that high cultural distance has a positive correlation with activity-level diversity. When it comes to manufacturing activities, the FOM in use is contracting out by offshoring manufacturing activities, which aligns with the finding of knowledge intensive activities favoring more diverse FOM configuration. Besides, EAB is also using arm's length market export to the entire world market, selling directly to maritime contractors like Technip, Subsea7 and Saipem.

Location

EAB has certain focus areas, which are the Norwegian sector, Egypt, the Mediterranean, Vest Africa, Australia and India. It has also been involved in some Chinese projects, though subsea ventures in this region is not that large, albeit increasing. Besides, EAB had one large potential project in Mozambique, though OS did not win the tenure process. For FOM diversity on the locational level, EAB seems to have higher diversity in the locations with knowledge intensive activities, and lower diversity in location with routinized activities, which follows the logic of the quantitative findings. In this regard, the operations are configured in line with the above analysis on the activity dimension.

For location choices, EAB has also made a conscious decision not to focus on certain locations, due to uncertainty of the contextual environment (Phene & Tallman, 2012). The firm has only exported through arm's length market exchange to Brazil and the US Gulf as they have considered these as very difficult markets, which EAB has been too small to fully penetrate. An additional reason for not entering the US with higher level of ownership modes is that all the larger projects are going out from Huston, where the American interests are very strong. Besides, the firm had some projects in Russia, though EAB is reluctant to spend time on this location, due to large uncertainties connected to the market.

When it comes to performance, EAB is the strongest across the three cases, which aligns with findings in the quantitative study. The firms with lower ownership degree, like EAB, and with not too diversified FOMs on the locational level are indicated to surpass firms on the other end of the scales. Additionally, the firm's knowledge intensive activities in certain locations help contribute to the performance of the firm.

Corporate

The sequential development of EAB's international FOMs started with the firm establishing relations with three Norwegian system supplier units (Kværner, FMC Kongsberg and ABB offshore system) which represented 70% of the global marketplace. Through these relations the firm was serving the Norwegian market during the 1990s. Still, EAB's systems and equipment ended up across the globe, while the firm did not have much contact with what occurred in foreign regions. It was the actors that the firm delivered to that took the products into their big portfolio of equipment, which they then sold internationally. In the late 1990s, the firm started to serve the installation company Technip, which EAB also developed a close relation with. Through this relation, EAB was beginning to get invitations to offer on smaller structures needed in the infrastructure of oil and gas fields, by being part of the tenure projects. After being integrated as a part of the OS organization, EAB is now conducting engineering activities a part of offering on tenure projects around the world, and winning such tenures leads to being part of modes of contracting in, by conducting turnkey projects in foreign locations (Petersen et al., 2008), where EAB acts as a third wheel on the wagon with OS. In this regard, EAB now leverages on the experience, foreign operations and network of its new parent-firms, which is established around the world (Chetty & Holm, 2000; Elango & Pattnaik, 2007). This network has also proven to be useful when offshoring manufacturing activities, when looking at the same contractual providers for sub-supply.

EAB's main foreign mode so far has been arm's length exchange for exporting products through to the entire world market, while the firm also uses contracting out, contracting in and strategic alliance, leaving a moderate level of corporate diversity. Besides the firm has also historically undertaken one joint venture in Canada, with early onset operations for the delivery of ropeways, while this was before Bakke took over the firm. With its origin as a small family firm, there is a trend for EAB to look for equity partners. This first occurred in the Norwegian home market when the firm became part of the Mjørud Group. With the eventual dissolvent of the group, Bakke found a new partner in Framo Engineering, which eventually led up to a full acquisition of EAB by Schlumberger.

7.4 Fred. Olsen Energy ASA

Case Background

Fred. Olsen & Co has a history dating back to 1848, which was when the family of Fred. Olsen first started with shipping activities (FOE, 2017). The firms had deep roots within the offshore industry, spanning more than 50 years. FOE was formed and listed on the Oslo Stok Exchange in 1997, comprising all the energy associated activities in the Fred. Olsen firms. Today, FOE is an international drilling contractor, providing exploration and production services, in both mid- and ultra-deep waters. The firm's fleet contains "three ultra-deep-water/deep-water units, four harsh environment mid-water semi-submersible drilling rigs, one tender support vessel and one accommodation unit" (FOE Q1, 2017). The units are listed in Table 8, overviewing the FOE's foreign operations.

Table 8: Cross Sub-Case Analysis FOE

	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Country of the FOM	UK	Mozambique	Brazil	West Africa	Colombia	India
Type of Activities	Operation services	Operation services	Operation services	Operation services	Operation services	Operation services
Type of FOM	Contracting in through turnkey projects and greenfield operation office in Aberdeen. *Operating 3 units → 4 units → 3 units → 1 unit → 2 units (cold stacked)*	Contracting in through turnkey projects. Operating 1 unit → 1 unite laid-up in Malaysia	Contracting in through turnkey projects, with greenfield office. *Operating 1 unit → 2 units* → no units	Contracting in through turnkey projects, with greenfield office. Operating 1 unit → no unit → 1 unit → no unit	Contracting in through turnkey projects, with greenfield office. Operating 1unit → no unit → 1 unit	Contracting in through turnkey projects. Operating 1 unit → no unit
Year of FOM Changes	*2009 → 2014 → 2015 →2016 → 2017*	2009 → 2015	*2009 → 2011*→ 2014	2013 → 2014 → 2015	2014 → 2015 → 2016	2009 → 2011
Size of the FOM	Large to small	Small to extinct	Medium to extinct	Small to extinct	Small	Small to extinct
Dynamics of Operation Modes	Moderate	Low	Moderate	Moderate	Moderate	Low

Activity

The activities conducted by FOE are mainly operation services, renting out and operating its drilling rigs or ships with personnel. This is the firm's core value added foreign activity, which can be seen as a reason for why the firm keeps it internalized (Contractor et al., 2010). Besides, FOE also conducts some engineering, albeit only if it needs to adapt or change its units in order to deliver a specific service to an operator, or if there is a service with substantial demand. This is either done together with the operators, or by FOE itself. Moreover, the core activities of FOE use one or two types of FOMs, which is either contracting in through turnkey projects, or contracting in with greenfield offices (Petersen et al., 2008). This results in a low to moderate level of activity level diversity, aligning to some extent with the findings of more routinized activities contain less activity level diversity.

Location

Historically FOE has been in many regions of the world, some of the foreign counties the firm has been in are US, Mexico, Colombia, Brazil, Falklands Islands, Ghana, the Ivory Coast, Liberia, Mozambique, India, Oman, UK and the Mediterranean. In 2009, when Ivar Brandvold came in as CEO the firm had six units in the North Sea, with three drilling rigs in Norway, three units in UK, and three units operating in international waters. Across locations there seem to be a tendency for mode replication, as contracting in with greenfield offices are commonly used spanning various markets. Therefore, the locational diversity of FOE is characterized as low.

The firm is driven into foreign locations by market seeking motives, actively looking for where it can utilize the firm's assets. In this regard, FOE has not been impeded by issues like uncertainty regarding the local context, nor the extant cultural differences. Instead FOE has looked for the best way of coping with such occurrence of locational differences, where it has managed to mitigate issues like liability of foreigners by leveraging on their Norwegian heritage and international experience, in addition to hiring locals from various regions it operates in (Oetzel & Doh, 2009). For instance, in Brazil, FOE hired a local Brazilian leader with German roots, long industry experience and high ethical standards. This resulted in Brazilians talking to the government and other local actors, which made a huge

difference for FOE. This was also coupled with hiring local Norwegians which were already living in Brazil, speaking the language and understanding the culture.

When it comes to performance, FOE has the weakest level of performance across the three cases. This can be partly explained by the firm's lower level of knowledge intensive activities. While this firm has a lower level of ownership and locational diversity, this does not succeed in mitigating the effects from the severe downturn in the drilling rig and vessel industry, with half of the global fleet being scraped. In general, FOE's performance regarded over this period can be seen as positive in light of the exogenous context.

Corporate

FOE's foreign operations are mostly steered by contracting in through turnkey projects, which often are coupled with greenfield offices (Petersen et al., 2008). These offices are usually serving a supportive mode role (Peterson & Welch, 2002), to the contractual modes of the firm. However, the greenfield office in Aberdeen has more of a primary mode role, as international and UK contracts are handled through that office. Regarding the supporting roles of international greenfields, FOE needs to move with its drilling ship and rigs, entailing the need for mobility; therefore, the firm is using rotational solutions for its core group of expats. This allows the firm to move between locations, for instance when FOE moved the organization that previously had in Colombia to the Ivory Coast. Thus, FOE can be considered as to have a low level of corporate diversity.

Due to the severe industry downturn, the firm has had to undergo divestments and close down operational offices, like the complete withdrawal from Brazil (Benito, 1997). In addition to this, FOE has also decided to divest assets in relation to the negative industry growth (Ilmakunnas & Topi, 1999), for instance the firm scraped the drilling rig which operated in Brazil, and it has also decided to scrap the floatel (offshore hotel) in UK. FOE currently have two units which are in operation, while six units have been put in lay-up, located either in Norway, UK or Malaysia, due to the lack of contracts.

The fleet of FOE which the firm has utilized in its international contracts, are mostly upgraded rigs acquired from Aker, dating back to the 1970s, when Fred. Olsen owned a 75% stake in that firm. FOE is influenced by their roots going

back to the family shipping business which was characterized as conservative, while also acting on opportunities that would arise. In this regard, the firm has been motivated by strategic asset seeking, in the home market, and then utilized the asset internationally. For instance, in 2000 FOE conducted an acquisition of the firm Navis ASA, with its drilling ship Navis Explorer 1 (FOE Annual Report, 2000). The ship was then renamed Belford Dolphin and moved to Brazil to utilize by contracting it in a foreign turnkey project. In June 2005, the Company purchased an Aker H-3 semi-submersible drilling unit from Diamond Offshore Drilling Inc. for USD 14 million (FOE Annual Report, 2005). This unit, which was built in 1974, was upgraded to work as a deep-water unit and sent to West Africa to work on a turnkey project there. Additionally, the firm has also initiated the building of ships, where FOE had a new drill ship built in 2013, in South Korea on an offshoring contract with Hyundai (FOE Annual Report, 2013). This unit is now the only international unit FOE has in operation, traveling between the Ivory Coast and Colombia.

7.5 Kværner AS

Case Background

Originally Kværner has roots from the rail and marine industry, manufacturing products like steam engines, dating back to the mid of the 1900s (Kværner, 2017). From the 1970s and onwards the firm has accumulated capabilities and experience in the oil and gas industry, and are now delivering complete solutions for both onshore and offshore projects. Historically the firm grew to become a market leader by conducting international M&As. In 2002, the firm was merged with Aker Maritime group, which stayed together until 2011. At that time Kværner was established as an independent company and listed on the Oslo Stock Exchange. This spin off from the firm that had become Aker Solutions was motivated by the need for Aker to focus on its core competencies (Bauer, 2006). Therefore, after the demerger Kvaerner was established as a specialized EPC contractor, i.e. conducting engineering, procurement and construction, addressing the global market from the outset of its listing. Kværner's main operations in the global marketplace are outlined in Table 9.

Table 9: Cross Sub-Case Analysis Kværner

	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6	Operation 7	Operation 8
Country of the FOM	Russia	Kazakhstan	Australia	Canada (Newfoundland)	America	China	London	Poland and Europe, starting in Middle East
Type of Activities	Engineering and construction	Engineering and construction	Engineering tenure	Engineering, manufacturing, construction	Engineering, construction and manufacturing	Engineering and manufacturing	Engineering and procurement	Manufacturing
Type of FOM	Contracting in through turnkey projects, with greenfield office (ca. 92% local workforce 8% international workforce) *moved 15 people back form Newfoundland to Moscow office*	Contracting in through turnkey projects, with greenfield office → Project complete + office closed	Tenure for turnkey project, with greenfield office + strategic alliance with COOEC → Project stopped office closed	Contracting in through turnkey projects, with greenfield office + 50/50 JV with Peter Kiewit Infrastructure. *Moving people from Russia.*	Divestment of US subsidiary and assets of EPC Center to Japanese firm IHI for 42 million NOK →Divestment of construction business to Matrix Services Company for 272 million NOK	Greenfield office, for a period 10 Norwegians, *now 1 representative.* + Strategic alliance with COOEC	Greenfield office → Procurement office closed down and moved back to HQ	Contracting out through offshoring
Year of FOM Changes	2011 → 2013→ 2016	2011 → 2014	2011→2014	2011→ 2013	2011→ 2012→2013	2011	2011 → 2014	2011
Size of the FOM	Large	Medium	Small	Small	Medium	Medium	Small	Medium
Dynamics of Operation Modes	Moderate	Moderate	Low	Moderate	Low	Low	Low	Low

Activity

Kvaerner conducts thorough project execution with engineering, procurement and construction activities, especially undertaken in relation to developments in tough weather regions (Kværner Annual Report, 2016). The engineering activities are the core knowledge intensive activities of the firm, which mainly use contracting in coupled with greenfield offices. Sometimes, Kvaerner also added to the operation mode package with strategic alliance and JV in specific areas (Petersen et al., 2008). When it comes to value chain activities like non-core manufacturing, Kværner often chose outsourcing (Contractor et al., 2010) while they mainly conducted final construction and assembly activities in Norway. In general, at least 50% of the production is done by some of the firm's sub-contractors and then 50% is done by Kværner itself. The procurement support activity is typically conducted form HQ in Norway. During the industry upturn, this was moved as a greenfield to London for a while; however, due to the industry downturn the procurement office was closed down and the activity was moved back to Norway. In general, the activity level diversity of Kværner is moderate, where the knowledge intensive activities contribute more to the diversity then the more routinized activities, aligning with the quantitative findings.

Location

Kvaerner's traditional home markets are the Norwegian and UK continental shelves, with a strong position in the Arctic Circle. The location of the largest international deliveries has been in Russia, the Caspian Sea, Newfoundland and Australia. In addition to these locations, the firm has greenfield offices located in UK, US, Finland and China (Annual report, 2016). For the latter, there are early face business development with COOEC's yard in Ching Dow. The FOMs spanning the various locations seem to be steered more by type of activities analyzed above, rather than specific locations.

Historically, the firm was also involved to a larger degree with activities in America. However, after the demerger in 2011, the firm had a number of very difficult projects that had been either delayed or incomplete there due to agency problems (Brauer, 2006), with substantial commercial disagreements with partners, clients and sometimes sub-contractors. Thus, the atmosphere with all the lawyers became too complex for the firm. Additionally, it had low critical mass in

the challenging market, with very low prospects for new projects. Therefore, the conclusion in 2012 was to undertake close to complete withdrawal from the US (Benito, 1997).

When it comes to offshoring activities Kværner has focused on Poland as a primary location. The firm has been utilizing this location for over 15 years, where the firm has currently expanded outside the total capacity of the location. Therefore, Kværner is looking at increasing its global supply chain with other international vendors, where the next location in sight is the Middle East, a location which is regarded as more difficult and complex with both higher geographical and cultural distances (geert-hofstede, 2017).

The firm's performance is average compared to the other cases; one could postulate that its knowledge intensive activities might contribute positively to performance, while the locational level diversity might negative affect the performance. Coupled with moderate level of ownership, these all help explain the average performance of the firm.

Corporate

Kværner's international corporate configuration comprises both contracting in, in terms of carrying out turnkey projects, which is often complemented by the establishment of greenfield offices (Petersen et al., 2008). Additionally, the firm is contracting out, by outsourcing non-core activities to contract manufacturers (Contractor et al., 2010) for sub-supply. Besides, the firm has also used JV and strategic alliance. Especially for the US region, Kværner has undertaken divestment, where the firm approached some of its partners, seeking for a buyout. During the time span of 2012-2013, Kværner managed to sell out the operations in the US. The operations in Huston were sold to a Japanese partner, while the Pittsburg operation was sold to Matrix in Tulsa. In this regard, Kværner was able to do so with a rather healthy backlog, while the new owners had more critical mass to grow the divested operations. In total, Kværner has the highest level of corporate diversity of the three cases. A viable reason for this might be that Kværner has the largest firm size, which can be a factor driving FOM diversity.

The firm has configured or aligned the operations, in a way that worked for the different contract deliveries of knowledge intensive activities. One configuration is to have less than 10% of the workforce commuting in and out of

remote locations. This can of course bring challenges, like completely different time zone. Still, it is driven by the project of an operator which is established in certain locations where it needs Kværner's expertise. Another configuration is to establish a local office, e.g. in Perth, where both local Australians and Norwegians run the office. In addition, Kværner has had 10 expats living in Ching Dow, while putting together a delivery model with the COOEC yard management and building a demonstration module, for other foreign operations in the Pacific region.

When it comes to the firms outsourcing to sub-contractors, frame agreements are normally established. Kværner found it important to establish such agreements as the firm can repeat the good experience and further improve the collaboration. The firm starts to look at those sub-contractors as part of their own organization, as the two organizations become more interrelated (Gereffi, Humphrey, & Sturgeon, 2005). In this regard, the MNE holds the liability and risk of its offshored activities (Mudambi & Puck, 2016), making it a prerequisite for the firm to have sub-contractors that meets their own standards. Therefore, Kværner undertook quite a thorough due diligence, in particular when it comes to the Middle East. The firm looked at the way the workforce is treated, as it would be local foreigners working at the yards in the Middle East. Then Kværner went beyond to the sub-contractors and looked at housing, salaries and the healthcare system, to establish a complete contextual picture, in order to justify if the sub-contractor met Kværner's own standard.

8. DISCUSSION

8.1 Foreign Operations

The concept of foreign operations (i.e. a construct of activity, location and corporate dimensions) is linked to and coupled with the diversity matrix of Petersen et al. (2008) viewed over a time period (Contractor et al., 2010). Taken all together, it depicts the foreign operations and mode configurations of the various firms. It seems fruitful to investigate FOMs in regard to the individual primary value-added activities, as it can to some extent affect the decision-makers understanding of optimal location choice and governance form (Petersen et al., 2008). In addition, it is a reasonable distinction in line with Hashai et al. (2010), indicating that larger organizations gain more by undertaking different entry

modes, spanning the various value chain (or other value creation logic) activities. Besides, the industry seems to favor the use of complementary modes, by combining various governance forms in the same markets, which concentrate on different value activities; these are then mutually supporting each other to achieve the firm's objective (Peterson & Welch, 2002). As the qualitative findings point to a clear trend of activity type entailing the FOM choice, these are used to illustrate the mode combinations of the firm. The locational component is still an important. Besides, in accordance with the quantitative findings, value shop activities have a tendency of having multiple FOMs at the activity level (Welch & Benito, 2007).

Engineering and Operation Services

The main configuration that emerges for engineering and operation service activities, across the three cases is the choice of combining the governance forms of contracting in for turnkey projects with greenfield offices, which represents a combination of corporate level modes within the activity-location set (Benito et al., 2011). For firms pursuing a global strategy FDI's (e.g. in terms of greenfields) have generally been regarded as a key method for achieving international integration, because it can serve as an important vehicle for gaining access to foreign markets and it is apt for transferring technology and know-how (OECD, 2016). Though, when it comes to the occurrence of contracting in, in this case for turnkey projects, there is a lack of empirical investigation in prior literature. An exception from this is the multiple case study on FOMs of Benito et al. (2011), which reveals a pattern of WOS representing the primary mode, where cooperative and contractual agreements play a secondary role. Interestingly, our findings point to the opposite of what Benito et al. (2011) discovered, for firms operating in diverse industries. What our findings indicate is that OFS have the cooperative and contractual operation modes as the primary role, while the greenfield WOS serve as a secondary and supportive mode role (Peterson & Welch, 2002). This occurrence might be a special characteristic for the international oil and gas industry, which was subject to early American influences, which is a culture known to build on the importance on contract (Gesteland, 2012). For firms operating with complex technology, e.g. high-level engineering know-how, it is found by Phene and Tallman (2012) that complex technology can actually be effectively managed through contractual arrangement (Osborn &

Baughn, 1990; Colombo, 2003). An argument for effective management in high levels of transferring technological complexity through such modes can be linked to mutual dependence amidst the contractual partner, translating into a lower dependency on equity modes (Phene & Tallman, 2012). These underlying arguments can explain why such turnkey projects prevail as a normal governance form in activities which actively involve the operators, where the actors go in together as a team, with similar characteristics of strategic alliance spanning many OFS, this is then orchestrated by the operator lead firm (see De Marchi, Di Maria & Ponte, 2014). Albeit an interesting field, digging further into how this network is orchestrated is outside of this paper's focus as this would need to take the perspective of the lead firm.

When it comes to location choices of engineering and operation service activities, the firms are mainly driven by market opportunities, the three firms all look to where the activities of the main operators are conducted. Additionally, the firms also have some restrictions, either in terms of fleet specifications or locations that demand high quality deliveries with reasonable payment levels. Such factors serve to create certain focus areas for the firms, in terms of where they want to go internationally. In addition, two of the firms also have certain areas they chose to not enter, mainly due to uncertainties in the contextual environment (Phene & Tallman, 2012). In contrast to the stipulation that firms seek to locate their knowledge intensive operations in areas with skills and competencies (Mudambi & Puck, 2016), our findings indicate that this is not an important determinant for location choice, as the firms in question go into the new markets with their indigenous highly skilled personnel and then hire locally to further build around the expats with core competencies. However, in line with the argument of Mudambi and Puck (2016), all these companies have high knowledge intensive activities in their home market of Norway which is rich on skills and competencies (Sasson & Blomgren, 2011).

Manufacturing

The configuration for manufacturing activities is commonly contracting out by outsourcing manufacturing activities, which clearly touch upon the interconnection of inward and outward internationalization, noted by Welch and Luostarinen (1988). OFS are often utilizing international sub-contracting for

production of sophisticated systems and components going to projects, both on the NCS and outwards to the global market. As pointed out by the various firms, the Norwegian industry of sub-suppliers is not always viable in terms of price for certain components. Additionally, in many of the markets with oil production not reaching a mature level of development, countries have looked to Norway and its successful concession policy. In this vein, countries have received help from Norad to set up laws that often require the OFS to have a certain amount of local content in their foreign operations. This, for instance, entails having some local outsourcing of production or using local service firms in foreign operations. Offshoring of primary activities like manufacturing, through either global sourcing (Lewin & Volberda, 2011) or specialized production (Contractor et al., 2010; Gereffi, Humphrey & Sturgeon, 2005) have been increasingly discussed in academics. Moreover, this study's findings are somewhat in line with the indication that offshore outsourcing may yield serendipitous benefits and it can be seen a key factor for a firm's development of foreign market penetration and internationalization (Hätönen, 2009; Benito et al., 2013; Mudambi & Puck, 2016). For instance, EAB's offshoring of manufacturing to Egypt has likely played an important role for the firm, which is currently also involved in large tenure projects in Egypt. In line with Benito et al. (2013), such contractual agreements can often be used as an initial step into a foreign market, which then lead to further FOM configurations in the international expansion processes of the firm (Welch et al., 2007). Additionally, such contracts might also contain clauses for facilitating future takeover of local operations (Petersen et al., 2000), albeit this was not discovered in this study.

The choice of location for subcontracting is more steered by proximity, both locational and culturally, and at low cost levels (Benito et al., 2013; Mudambi & Puck, 2016). In this regard, countries with lower distance and acceptable cost levels have been chosen to offshore manufacturing activities to subcontractors in Central and Eastern Europe, which is commonly chosen for manufacturing offshoring (Jensen & Pedersen, 2011) and the Middle East. Particularly, there is currently an international sub-supplying industry growing out of Poland. Albeit, Poland is reaching its capacity level and Kværner is therefore looking to the Middle East as a next option for offshoring. However, Haugan stress that cultural difference also plays a role in this regard, with the Middle East being slightly

more difficult, e.g. in terms of cultural differences and need for more substantial due-diligence processes.

Marketing and Sales

There are also some marketing and sales activities conducted from the home market of Norway, which are internationally linked with the occurrence of arm's length market exchange direct export. In this regard, Bakke commented on the reason for direct export is that the subsea actors are quite concentrated with about 20-40 players representing 90% of the market. For EAB, this exporting related operation becomes part of the operation mode package (Benito et al., 2009) in locations where the firm is also conducting turnkey projects or offshore manufacturing, like in Egypt.

In general, the firms regarded in this case study have low to moderate FOM heterogeneity (Benito et al., 2011). All of the firms are quite specialized in their fields, so contrary to large MNEs spanning a wide range of activities and locations it is not a surprising finding. Interestingly, this indicates a highly increasing industry trend of using contractual modes, both for contracting in for turnkey projects and contracting out by offshoring activities. In general, the occurrence of various mode packages is evident.

8.2 Dynamics and Flexibility of Foreign Operations

The dynamics of the foreign operations in the OFS industry can be regarded as moderate in general. The various components reveal that the types of actives conducted usually correspond with the choice of specific corporate governance, while the location is the main varying factor within the foreign operation's setup. This can be linked to the industry specific variable of dependency on the activities of the major oil operators, and this has led to the need for OFS to incorporate strategic flexibility into the firm's foreign operations (Petersen et al., 2000; Eriksson, Nummela & Saarenketo, 2014). Thus, by uprooting and moving the component of activities and corporate governance to another location, there is a shift in the foreign operations on the basis of location. Additionally, part of the corporate dimension is then changed by going into new contracts, often with a different operator. This is illustrated by how Kværner moved its operations from

Russia to Newfoundland and FOE has operations moved forward and back amidst the Ivory Coast and Colombia. This has not readily been observed thus far in prior entry mode research or in the preliminary investigations of dynamic operation mode (Hashai et al., 2010; Benito et al. 2011; Benito et al., 2013). Reasons for lack of such prior observations are the tendency to focus on either entry modes, or the fact that there is a lack of longitudinal observations for dynamics of operation modes. One can also argue that this type of project bound localization of operation modes is a special characteristic for industries that resemble the OFS industry. Moreover, the reallocations evident in this study has not been given much light in extant research, although briefly touched upon in research on the global factory (Eriksson et al., 2014). Furthermore, it highlights the value of analyzing foreign operations as a three-componential construct when undertaking further analysis in this area (Contractor et al., 2010).

The ability to undertake foreign operations and mode changes in the aforementioned way is what the authors refer to as flexibility within certain foreign operations. What becomes evident is that flexibility is an important attribute in order to be able to survive in the industry dependent on locations of operators, especially as it is suffering from decrease in operator's activity investments. In prior research, flexibility has been discussed in terms of switching amidst governance forms (Petersen & Welch, 2000) or related to organizational change (Eriksson et al., 2014); however, not much work has been conducted on investigating change of activities and locations. Firms like Kværner and FOE which are in need of such locational flexibility have various solutions for keeping the employee's mobile. For Kværner, the firm may try to employ both parties in families; while FOE has a rotational solution, having two employees filling one single position. EAB has flexibility in terms of the opportunity to draw on the large network of OS, or even larger network of Schlumberger. Thus, the firms in this study align with the arguments of Petersen et al. (2000), which stress the importance of building strategic flexibility in international operations, as this can make firms more capable of undertaking mode switches in response to changing circumstances. In this regard, our study illustrates that having an initial understanding of the need for flexibility and being able to avoid agreements that are problematic and expensive to change, can be seen as positive for both mode change, but also when undertaking a change in other components of the foreign

operations, such as location. The idea of *foreign operations component change* is a new conceptualization building on prior ideas of Petersen et al. (2008), where firms take part of their operations from one location (or activity) and reconfigure it to another location (or activity). This might also be done within the corporate dimension, which has received notably higher focus than the former. In general, with increasingly fine sliced activity configurations (Hernández & Pedersen, 2017) and dispersed foreign operations of global MNEs, it is important to not just take one dimension as the most important aspect of foreign operations. All three dimensions are crucial parts of the construct take this concept, and need to be considered in temporal space. Moreover, this concept should be tested in future research, spanning various industries to discover if it is an OFS industry specific phenomenon, or if it is also apparent in other industries.

There are various occurrences of both major and incremental mode steps for all three firms (Benito & Welch, 1994). When it comes to mode additions and deletions, one can see there is a trend related to international expansion when the industry first prospered from an artificially high oil price, before contraction took place because of the dramatically industry downturn in the mid of 2014. Thus, the reason for mode change can obviously be seen as a response to significant external changes in foreign markets (Calof, 1993; Calof & Beamish, 1995; Benito et al., 1999; Swoboda et al., 2011). Kværner, for instance, had originally planned an expansion strategy from its demerger in 2011, which instead resulted in a focus strategy in certain locations. In this vein, the firm undertook almost complete withdrawal from the US market by divesting all its operations (Benito, 1997), albeit still keeping a small office. The reason for such a divestment was influenced by the two of the three essential factors discovered by Benito (1997) to stimulate divestment, which were both economic conditions and governance problems. Such a substantial divestment can be viewed as a major mode step (Benito et al., 2009). The closing of Kværner's office in Australia occurred in a more incremental fashion, and eventually closing down as the firm's last representative in that area left the firm. This can be regarded as a less formal way of undertaking mode change (Benito et al., 2009). A complete withdrawal was evident in the case of FOE, where its foreign operations in Brazil were closed down and the rig-asset was sold to scrapping. One can also view the lay-up of the FOE's assets as a type of mode package reduction, as they are no longer

conducting the activities related to contracting in for turnkey projects. Instead of being an active unit operating in a certain foreign market, the units are laying cold with minimum follow-up, waiting for new contracts to arise. Regarding EAB, the firm started with indirect export of products through their Norwegian clients, before adding on to their mode by contracting in for turnkey engineering projects, as well as directly exporting products through arm's length market exchange. In sum, the quantitative overview discloses that mode combination somewhat fluctuated smoothly with an increasing trend during the sample period which is in line with Hashai et al. (2010) and Benito et al. (2011). However, the qualitative case study unveils that mode combinations were somewhat stable and moderate, with Kværner and FOE slightly decreased and EAB slightly increased. The decrease tendency can be seen as a direct consequence of the industry downturn, and it illustrates a case of economically calculative reduction decisions (see point 8.4).

8.3 Motives of Foreign Operations

There are various motives behind the international operations of the three firms, where specific value activities seem to be motivated by the same factors. For all firms, the main motivation behind conducting international engineering or operation services activities is market seeking (Benito, 2015), when contracting in for turnkey projects or setting up greenfield offices. The addition of greenfield offices modes forms a configuration with higher control, and it is often found in the B2B industry, as it can be related to the safeguarding of branded assets and ensuring high quality delivery.

At the same time, the firms that conduct manufacturing activities are conducting contracting out through outsourcing with an efficiency-seeking motive (Benito, 2015). Distance to choose of location has here been an important variable, due to cost and time of transportation, as well and management of the outsourced activity. Thus, the firm chose locations with similar locational and cultural proximity with advantageous labor market cost (Bucky & Ghauri, 2004).

There is also evidence of strategic asset seeking motives in this study (Benito, 2015), where FOE has acted on certain opportunities to buy strategic assets in terms of drilling ships or rigs. Besides, when EAB was bought up by

Schlumberger, it can be regarded as a strategic asset seeking activity, though on the part of the MNE buying the knowledge intensive Norwegian firm.

8.4 Switching Costs and Path Dependencies

What is evident for the various cases is that there is a low level of key impediments to undertake changes in the firm's foreign operations. This might be more evident for major oil and gas operators which are established heavily in certain locations. In contrast, Haugan painted a picture of a platoon or an aid team (e.g. Red Cross) which are needed to fix a problem or deliver a service for an oil major. Then when the project is done, the firm needs to be able to move on to another location where it can serve another operator. Therefore, obstacles like switching costs, both take-down costs and set-up costs (Weiss & Anderson, 1992), are not as high as what the cost might be for the operators. The firms are also aware of the need for flexibility, and all regard impediments in a sober and calculative manner. For instance, FOE is thorough on decisions regarding the firm's assets, which are a key part of their operations. The firm has recently scraped to units, which was determined by a combination of various factors. One factor is the certificate time (five-year period) on a unit, which is either about to or has run out. Such certification is a high investment, so in order to undertake it the firm need to earn back the investment over the next period, which leads to a high increase in the rates. This is in turn combined with looking at the market forecast, and considering certain criteria, like risk, market, investments and earning potential. Brandvold commented that the first scraping decision was easy, due to high cost increase and a week market potential, while for the second scraping the market forecast and the risk factor played an important role in the decision. Based on the NPV calculation surpassing the perceived take down cost, the firm has been able to mitigate the potential of a lock-in effect due to take-down costs. Additionally, Kværner has been pragmatic in their response to the market decline. The firm first divested its "legacies" which had caused the firm some notable issues. And it managed to avoid major layoffs by only closing the small offices, and moving operations from the Caspian Sea to opportunities arising in other areas like Newfoundland. In general, one can argue that switching cost was not a major impediment to change, as all of the decision makers in this study have had

rather substantial international experience (Benito et al., 1999), accumulated from before they took over as CEOs of the companies in question.

8.5 Mode Experience and Learning

There seem to be a tendency of mode replication, related to the various value adding activities. Therefore, it might be that the managers operate with a confined choice set (Hutzschenreuter et al., 2007; Larimo, 1995) when it comes to choose of FOM configurations. In this regard, one could stipulate that the firms in question might have become locked into the use of existing modes, instead of searching for other alternatives, i.e. experiencing mode inertia. It can also be explained by managers employing past successful FOMs, rather that evaluating various choices as they face an array of potential mode options (Ellis, 2000).

As previously mentioned, the locational component of foreign operation configuration varied the most. In this vein, mode learning occurred in terms of contextual learning (Benito et al., 2013). Cultural learning occurred on the level of invar and outward expatriates, where Bakke note that he the firm's engineers gaining tremendous value for such cross-cultural collaboration. Still in relation to cultural differences often being viewed a s major impediment, this was not the case of the firms in this case study. On the contrary, all informants commented that the Norwegians going out to foreign locations are usually perceived as down to earth and decent people. Still, it was pointed out that one needs to be aware of certain cultural differences. Brandvold commented that *"we are really aware of culture and the cultural differences. This is a part of our DNA; we are used to work in a multicultural environment. You must be aware of this, you must have people that have the necessary insight, you must know the ruleset, and you must be extremely though on conduct and anti-bribery, the whole package, you must lead this with a steady hand."* Therefore, as mentioned above it can be argued that the experience and managerial capabilities, such as cultural awareness and global mindset of the CEOs, help them steer their global factories (Eriksson et al., 2014) and mitigate issues arising from cultural distances. Another form of contextual learning also led to mode divestment, as the institutional environment in the US with its rigorous lawyers, this eventually leads to withdrawal from the market.

In addition, the Norwegian culture has been characterized as a learning culture, where correction of mistakes is made, and the future occurrence is

prevented. "*The culture for continuous improvement in Norway is really strong, and I think that is a competitive advantage,"* Brandvold explained. *"If you go to other countries, they are very good at learning from the error, but not at avoid them it in the future, rather they learn how to act should the error reoccur."* This can be linked with a feedback loop, presented in Benito et al. (2009)'s model of FOMs. This can lead to a continuous learning loop, which firms may experience when conducting their foreign operations. Moreover, this underlines the continuously dynamic process of foreign operation conduction.

9. CONCLUSION

This paper conducts an exploratory and comprehensive study of foreign operations by looking at one specific industry and one specific host country, over a temporal dimension. It reveals the usefulness of explaining foreign operations as a three-dimensional construct, since evaluating, coordinating and optimizing all three dimensions of the firm's foreign operations over time leads to a competitive advantage (Contractor et al., 2010). Thus, one of the main findings of this paper is that certain types of activities tend to favor specific mode configurations; and knowledge intensive activities tend to drive FOM diversity on both location and activity levels. In addition, lower level of ownership is correlated with FOM diversity, especially at locational level. In the current global marketplace where firms increasingly fine slice their activities (Hernández & Pedersen, 2017) and rely on lower levels of ownership (Buckey, 2011), it is especially important for managers to aptly orchestrate their foreign operations. This implies that managers should take a comprehensive overview of their foreign operations in order to orchestrate the firm's global activity configurations (De Marchi et al., 2014). In this vein, they need to consider that choices over this three-dimensional construct will likely change and evolve over time due to ever-changing environments (Buckley, 2011; Buckley & Ghauri, 2004). Therefore, to stay competitive, managers need to build strategic flexibility in their foreign operations (Petersen & Welch, 2000). Besides, incorporating flexibility in the foreign operations might further prevent managers being impeded by lock-in effects of certain modes (Benito et al., 1999; Buckley & Casson, 1981). Additionally, an important dimension of such flexibility is that organizational learning is combined with the ability to unlearn, and disregard what does not perform (Eriksson et al., 2014). In

general, while highlighting the importance of managerial capacity, it is important for managers to be aware of issues related to mode inertia (Benito et al., 2009). As this study shows indication of mode inertia, it is important for managers to understand that mode replication of prior successful modes in themselves does not lead to competitive advantage when entering new markets.

While the authors have attempted to elucidate the foreign operations and mode configurations by utilizing mixed method research, this study is subject to certain limitations. As the authors were not able to obtain sizable amounts of observations by conducting a questionnaire survey, the quantitative data sample is rather small. Though this issue was mitigated by conducting comprehensive secondary data gathering, the findings might suffer from biases. For instance, certain types of FOM configurations—e.g. M&A or greenfield—are more obtainable with more information exposure than contractual modes. Thus, to compensate the quantitative part of the study, qualitative case studies were conducted. Still, participants opinions might contain certain biases in terms of framing past events in a more positive manner, like all participants not seeing cultural distance as a major impediment in foreign operation.

There are many avenues for further research within this field. Based on this study's findings, more investigations on foreign operations as a three-dimensional construct of activities, location and corporate governance is highly warranted. Additionally, as in this paper the locational-level diversity, ownership level and degree of knowledge intensive activities are found to help explain the firm's performance, more comprehensive analyses of the performance effects are highly needed (Hashai et al., 2010; Hernández & Pedersen, 2017). Future research should also investigate empirical data spanning a longer time period and larger samples of MNEs, both within various industries and with various home markets. Moreover, it is important to research new industries which are not in direct resemblance to the traditional value chain manufacturers by addressing a global value configuration logic. Future research should also look at the network of foreign operations which lead firms are orchestrating (De Marchi et al., 2014), as it is evident from this research that the operators orchestrate such a network of contractual agreements with the OFS firms. Besides, such low ownership modes are seemingly increasing in use (Buckey, 2011), and can be apt for risk and resource sharing. Incorporating this into FOM research might richen our

understanding of the concept and lead us closer to clean up the “messy” reality of FOM configurations. In addition, the somewhat curious absence of cultural issues from our qualitative study would be interesting to elaborate on. Is this a phenomenon of a highly global industry of oil and gas, or could this be linked to the culture of the home country or the managerial capabilities of the firm’s? Besides, in line with Haugan’s analogy of Kværner and the Red Cross, investigating how firms conduct their FOMs in the humanitarian industry, or other industries resembling OFS, might yield further fruitful insights into the phenomenon of foreign operations.

APPENDIX

The interview guide focused on the main questions, letting the interview guide the information which was extracted.

Interview guide:

1. How did your internationalization process evolve?

2. What are your three most important international operations? (Self-selected operation of great strategic importance)

- Can you elaborate on each of their evolvements?
    - *Notes: start time, type of operation [in-house operation (90-100% ownership), equity joint venture (10-89 % ownership), contractual arrangement (licensing, franchising, agency/distributor contract, outsourcing/subcontracting (i.e. contract manufacturing), management contract)], strategic alliance (non-equity), activity performed on standard market terms (''arm's length transactions''). Value Added Activities (Marketing and Sales, Manufacturing, After Sales Services, Logistics, Engineering, Consulting, R&D, HRM, Procurement, IT, Finance & Accounting, General management). Location, more than one place in specific country?*
- Why did you choose the particular activity/activities, location, and corporate governance (for each operation)?
- What is the motive behind undertaking these operations, and motives behind their evolvement?
    - *Notes: Specific motive: e.g. market-seeking, efficiency-seeking, resource-seeking, asset-seeking, product differentiation, customer segmentation, task differentiation (e.g. research ≠ development) bolstering of commitment (contract + equity JV)*
- How has each foreign operation changed over time?
    - *Notes: Specific change: e.g. additions, subtractions, changes in roles, remained the same, etc.?*

3. What role has your foreign operations played in the context of an industry suffering from diminishing oil prices?

4. How would you describe the performance of your firm during the last year? And how has this been affected by your international activities?

5. How has the foreign operation(s) of your firm in general, changed over the last three years?

- Why did they change you think?
- Were they affected by the main operations which we talked about earlier?

Potential follow ups, or additional questions

- How has the corporate governance been, any difficulty to management?
- To which extent has technological transfer or R&D come into the picture?
- How has the resource sharing been?
- Degree of overall cultural resistance, any cultural differences issues?
- If change, switching cost?
- Do you have any mode interdependencies, do they affect each other?
- Do you believe they take on different roles (e.g. primary/supporting modes)?

INTERVIEWS

All company specific information from the informants, which are not referred to with specific links, were obtained from the interviews. In addition, information regarding the industry background was mainly obtained from Torleif Enger.

The interviews conducted are as follows:

- Harald Bakke, interviewed 05.26.2017.
- Ivar Brandvold, interviewed 06.08.2017
- Jan Arve Haugan, interviewed 06.08.2017

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PRELIMINARY THESIS REPORT

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EXECUTIVE SUMMARY

Research on foreign operation mode configurations and their evolutions has only started to emerge, moving beyond the most comprehensively researched topic—the static concept of entry modes—in internationals business. The conceptualization of the phenomenon has been laid out by certain academics, which have called for the need of more empirical analysis in order to further enhance our knowledge and understanding of this vast field. The main theoretical perspectives applied in this regard have been the economic and internationalization process perspectives, yet both streams suffer from limitations. In a more concrete and practical manner, conceptualization studies on mode choice have outlined various frameworks, which has been combined in this paper's literature review.

The investigation of the paper will result in a matrix map of the internationalization of Norwegian Oil and Gas Supply Firms, based on location, activity and corporate diversity of their foreign operations. Then the study will go in depth and investigate three specific and distinct cases, encompassing one industry average and two cases that diverge from such an average. In this regard, the study generally takes a broad and encompassing view on the dynamic FOMs, comprising changes both substantial and minuscule looking at aspects like mode additions, deletions, role changes, etc.

Thus, the research will employ a descriptive sequential mixed method approach, where secondary quantitative data will be gathered for the matrix mapping and primary qualitative data will be obtained through in-depth interviews for the case investigations. This research will mainly employ a longitudinal time dimension, following the firms in the quantitative study at two points in time, while the case studies will track the history of firms all the way back to their founding. Finally, to the extent of the authors knowledge, such mixed method approach has not been undertaken to date, and research in this regard is therefore highly warranted.

INTRODUCTION

In the field of corporate and global strategies, this study will investigate the dynamics of operation configuration when firm conducts foreign operation arrangements. Prior literature has mainly analyzed discrete entry mode choices in foreign operations. However, there is an emergence of conceptual and empirical research concerning a more holistic conceptualization of foreign operation modes (FOMs) where a more dynamic perspective is employed over the last couple of decades (e.g. Benito et al., 2009; Benito et al., 2011). Still, researchers have underlined the close to endless combinations of FOMs, which comprise various corporate mode matrixes classified on the dimensions of location, activity and corporate levels (e.g. Petersen et al., 2008). Comprehensive mapping of firm's international operation in this regard has yet to be undertaken. Therefore, the starting point of this research will be to perform such an investigation of Norwegian Oil and Gas Supply Firms (OGSF) and map their global activities in order to obtain a general idea of how this industry operates internationally.

The oil and gas industry is rather global, representing a vital part of the Norwegian economy and its international business activities. For a long period of time, the sector experiences a tremendous growth, resulting in a boom of activities spanning the entire value chain (Alix Partners, 2017) allowing firms to capitalize on the enduringly high oil prices. Though nearing the end of this boom, the Norwegian oil and gas industry saw a worrisome increase in employment, surpassing the value creation of employees (Zhovtobryukh, Nordkvelde & Reve, 2013), and the industry was also plagued by rising cost levels. Therefore, when the oil price started to fall in 2014, the industry had to undertake substantial layoffs and cost-cutting activities (Ramsøy, Reve & Nordkvelde, 2016). Evidently, such an exogenous shock often forces firms to undertake change, both in their home market, but also in relation to their foreign operations. This has been depicted empirically, showing how certain actors responded to the price shock with divestments and the use of alliances and joint ventures with global actors. Therefore, the oil and gas industry is considered as a highly relevant and intriguing sector to investigate, in terms of Norwegian OGSF configuration of FOMs.

RESEARCH QUESTIONS AND AIMS

The dynamics of foreign operation configurations of Norwegian multinational enterprises (MNEs) will be analyzed in this master thesis with special focus on their value activities in both advanced and emerging markets and their corporate diversity. We will target the analysis on Norwegian OGSFs and their international operation to investigate the general mode configuration of the industry. It is a highly interesting and relevant sector to investigate, as it has held a strong position in certain global markets, with advanced technology and personnel spread across the globe (Ramsøy & Qvigstad, 2014). It also represents one of Norway's most important industries, yet it has suffered substantially during the recent years of diminishing oil prices. Besides, as the contextual differences (both endogenous and exogenous factors) have been identified between advanced and emerging markets (e.g., Dunning 2000; Guillen and Garcia-Canal 2009), it is interesting to analyze how firms undertake mode configurations in both types of economics. Therefore, both the historical international operations and its associated changes reacting to various contextual factors—contingencies—will be focused on in order to obtain a thorough understanding of how MNEs undertake foreign operations in various markets. In this vein, the research questions are follows:

- *How do MNEs configure foreign operations in different types of markets, spanning value activities, locations and corporate diversity?*
- *What are the rationales for and impediments behind the dynamics of FOM configurations?*

LITERATURE REVIEW

The Development of Theoretical Perspectives

A central topic in international business has been the choice of modes of foreign operations. In this vein, the most predominantly researched area has been choice of entry mode (reviews: Canabal & White, 2008; Brouthers & Hennart, 2007). First, such studies have largely drawn on theories from economics approaches and transaction cost analysis (TCA) (Williamson, 1985; Anderson and Gatignon, 1986; Hennart, 1989). This research stream regards the specific transaction and its attributes, in terms of asset-specificity, uncertainty and flexibility. The governance aspect is seen as the main dimension for mode choice, and only one entry mode should suffice for the specific transaction (Benito et al. 2011). As there is fixed cost related to governance, such structures need to be rather flexible or broadly designed, so that they can handle various transactions. Moreover, recent meta-analyses have found that this perspective manages to do a good job in explaining choice of entry mode (Zhao, Luo & Suh, 2004). Second, evolutionary and the resource-based view (RBV) (Andersen, 1997; Kogut & Zander, 1993; Madhok, 1997; Cuervo-Cazurra, Maloney & Manrakhan, 2007) has also been frequently employed. This field focuses on the firm-specific resources, which firms can either exploit in an international expansion, or they can enter foreign markets as a vehicle for attaining new advantageous resources (Luo, 2002; Tsang, 2000). However, as pointed out by Brouthers and Hennart (2007), with a few exceptions (Erramilli, Agarwal & Dev, 2002; Dev, Erramilli & Agarwal, 2002), entry mode studies within this perspective generally somewhat suffer from limitations. Third, institutional theory (IT) has also been utilized in the investigation of entry modes (Kostova & Zaheer, 1999; Meyer & Peng, 2005), with a focus on the institutional conditions in the host country environment and distinctions amidst host and home country. The development of this approach has moved from a simplistic modelling of risk and uncertainty related to the host country toward a more theoretically grounded research foundation, brought about by new institutional theory (North, 1990; Scott, 1995). This refined perspective distinguishes amidst the dimensions: regulatory, cognitive and normative. And it looks at how they influence manager's way of doing business in a particular host country, where isomorphic pressure tends to lead to conformity in business operations. Moreover,

the eclectic framework, (Dunning, 1993; Dunning, 2000; Dunning & Lundan, 2008) comprising ownership-, location-, and internalization advantages (OLI), combines insight from the previous theories (RBV, IT, and TCA) which has been found to be a good predictor of influences on entry mode choice (Padmanabhan & Cho, 1999; Erramilli, Agarwal & Kim, 1997; Anand & Delios, 1997; Nakos & Brouthers, 2002; Brouthers, Brouthers & Werner, 1996).

Despite the vast stream of research on entry modes forming different perspectives, certain relevant theories are seemingly neglected, such as strategic decision-making (SDM) (Brouthers & Hennart, 2007). Research in this regard comprises ideas such as mangers lack of complete rationality (Hitt & Tyler, 1990) and upper echelon theory (Hambrick & Mason, 1984) which indicate that decisions can be influenced by the individual decision makers or the decision-making teams background and past experiences (Carpenter, Geletkanycz & Sanders, 2004; Brouthers, Brouthers & Werner, 2000). Despite such research indicating that managers matter, entry mode studies scarcely review the decision makers themselves (for an exception see Herrmann & Datta, 2006) and focus on the measurable rational or the transaction attributes.

While the foundation of the aforementioned research has been grounded in the topic of entry modes, scholars have called for a need to distinguish this term from being seen as a general description of FOM, as there is evidence of mode switches, reductions and increases of mode use, and issues regarding the application of entry context which has limited coverage of just one point in time (Welch & Benito, 2007). In this regard, two main theoretical approaches have been utilized: the economic (e.g. TCA, RBV and IT) and internationalization process perspectives (Benito & Welch, 1994; Benito, Petersen & Welch, 2011). The former has in general considered as a static and discrete approach. It is assumed that after a decision is undertaken, it is the most pertinent one given the contexts (Pedersen, Petersen & Benito, 2002). Therefore, there is a need for a radical change to appear for the firm to contemplate a mode change, meaning there are less chances for the combination of FOMs. The internationalization process approach proposes, on the contrary, that mode changes should occur as a natural part of a dynamic process of internationalization (Swoboda, Olejnik & Morschett, 2011). Here case study is often used by researchers. However, they

generally only focus on the single mode switch, without capture the dynamics of mode configuration. For instance, through experience, managers develop their perceptions about risks and benefits of conducting foreign operations. Such a development is suggested to lead to the preference of moving from a mode offering low market commitment to a mode that requires higher commitment. Still, this perspective does not include an overt contemplation of mode reductions or radical mode changes (Pauwels & Matthyssens, 2004). Thus, both perspectives lack of complete dynamism. Additionally, while control is often seen as a vital component, the perspectives have failed to take into accounts that control may vary over the same mode type (Benito & Welch, 1994). However, Benito et al. (2011) comment that it might be helpful to use a combination of the extant theoretical perspectives in order to explain the mode dynamics.

Overall Framework of Mode Choice and Change

Foreign Operation Modes

FOM is generally regarded as how firms continuously conduct their business through organizing their foreign operation arrangements (Benito, Petersen & Welch, 2009), which surpasses the rather static conceptualization of entry mode choices. Still, such time contingent changes may be affected by the initial choice of entry mode (Benito & Welch, 1994). However, the concept of FOM encompasses a more realistic and dynamic view, in regards to "how" such operations are conducted over time, often depicting the characteristics of emergent strategies (Mintzberg & McHugh, 1985). In the early conceptualization of mode theory, Benito and Welch (1994) called out for the need to develop our understanding of major operation mode steps, and the need for broadening and deepening to catch the in-between incremental steps, which are important but less evident. In addition, they called for a need to investigate the dynamics of mode combinations or packages, not just mode choice in isolation, which does not adequately cover mode changes (Buckley & Ghauri, 1999).

Since then, conceptual and empirical work has been undertaken to elucidate our understanding of FOMs (e.g. Petersen, Benito & Pedersen, 2000; Peterson & Welch, 2002; Petersen, Benito, Welch & Asmussen, 2008; Benito et al., 2009; Pedersen et al., 2002; Swoboda et al., 2011; Benito et al., 2011; Benito, Dovgan,

Petersen & Welch, 2013). This recent stem of research has taken the dynamic aspect of modes into consideration, which comprise both transitions and modifications, like mode additions or deletions, as time elapse (Welch & Benito, 2007). In addition to such adjustments, Benito et al. (2009) depicts the concepts of mode role changes and mode packages. For the former, changes in mode roles may, for instance, occur within a specific mode, even without mode additions or subtractions. For the latter, combinations of modes may be used in various forms of packages. In this regard, Peterson & Welch (2002) argue that they sometimes might be utilized purposely as temporary configurations, where companies might look to enhance their position in the foreign market, before undertaking a move to a favored type of FOM configuration.

Motives of Internationalization and FOM Combinations and Changes

Behind the choice of FOMs lies motives, as in accordance to Benito's (2015) argument, which posits that motives seemingly define the essential nature of internationalization. In extant literature, four main motives have been identified as market-seeking, efficiency-seeking, resource-seeking and (strategic) asset-seeking (Dunning, 1993). Motives can answer the why-question in international business and the question of how to organize and operate international business activities, and should therefore be included as an important part of FOM research.

Based on the conceptual paper of Benito (2015), firms seek internationalization for different reasons, and it is expected that they might enter different markets. Distance is likely to be particularly important for firms in the B2B market. Such market-seeking firms tend to set up greenfield subsidiaries so that they can safeguard branded assets. Distance might also be of importance to efficiency-seeking companies, as distance leads to costs in transportation and management. For instance, firms can achieve efficiency benefits through detaching certain activities through offshore outsourcing. In addition, resources are not evenly distributed geographically, thus the reason for existence in specific markets might be explained by access to critical resources. Moreover, strategic assets seekers likely seek locations with vibrant clusters, highly developed markets, and urban centers, when choosing activity location (Narula & Santangelo, 2012); and they would likely put an emphasis on the importance of control as an important factor. Still, it is vital to understand that motives do not

provide adequate justification for any form of foreign business activity, in themselves (Benito, 2015). Besides, various motives may occur in parallel. For instance, firms may conduct a variety of foreign value activities concurrently; they may be undertaken due to various motives, where no single motive necessary is dominant to the others (Benito et al., 2009).

In this vein, mode combinations can be utilized to serve the various motives in firm's international operations. Initially, combinations could be established as an emergent strategy (Mintzberg, 1978). With the dynamics of the international context, firms over time shape themselves with more deliberate strategy to help the firm improve its international market penetration (Calof, 1993). Through case studies of 6 Norwegian firms, Benito, Petersen and Welch (2011) demonstrate that firms combine FOMs to facilitate their adaptation to foreign political mandate, local market conditions and to deal with the complexity of product differentiations in order to serve market needs. Additionally, Benito, Pedersen and Petersen (1999) provide theoretical argument that firms change their FOMs through mode learnings and reexamination of inappropriate premises. From external sides, firms can also make changes as a reaction to the dramatic changes in the foreign markets or increased competition. For internal factors, the change of organizational conditions and the preferences of risks make firms prone to mode changes. Moreover, current empirical analysis of mode changes is dominant in mode increase or mode decrease, with limited analysis to consider both factors (Swoboda et al., 2011). Through empirical analysis of mode changes in German firms, the authors state that both internal environment and executive attitudes stimulate the mode increases. Host market performance and external environment are more related to mode decreases. However, the authors point out that further research is needed to analyze mode changes in other countries and evaluate firms with and without mode changes, in addition to longitudinal study of dynamic mode changes with both primary and secondary data analysis.

Evaluation of Mode Combinations

To properly measure the antecedents and consequences of different mode package choices, various mode combination classifications are provided. Based on the level of linkage among modes, mode combinations can be classified into unrelated, segmented, complementary and competing modes (Peterson & Welch,

2002), and they may vary in purpose of use. When firms use unrelated modes in a foreign market, the modes operate with no interconnection. This may reflect the operations of a firm with activities spanning different industries or markets. For segmented mode, firms employ various modes in the same market, in order to assist different segments. When it comes to the use of complementary modes, they are combined in the same industry or market, concentrating on different value activities, mutually supporting the firm to achieve its objectives. An objective here is clearly to enhance efficiency, without being grounded in any specific segment. Firms operating with competing modes use more than one mode with different ownerships and within different locations, where they compete with each other in the same segment(s) and within the same activities. Extant research has not comprehensively explored how mode combinations develop, or how they might influence substantial mode changes (Benito et al. 2009; Benito et al., 2011). Additionally, the nature of the intra-connection amidst various combinations of modes has not been thoroughly investigated up to date (Petersen & Welch, 2002). One attempt to demonstrate such interdependencies amidst FOM decisions is a numerical level conceptual paper by Asmussen, Benito and Petersen (2009). They re-configure the FOM portfolios at both activities interdependencies and managerial capacity levels. For the interdependencies, the researchers take one step further to classify mode combinations not only by the FOM diversities across space, but also by the FOM fluctuations in regards to dynamic changes over time. Therefore, they suggest that by performing cluster analysis firms could be classified into three configurations based on the degree of FOM variations: “large (discrete, myopic), small (rules-based, constant firms) or intermediate (perfect, dynamic)” (Asmussen et al., 2009, p.154).

Mode Configuration and Actions

After the evaluation and comparison of mode combination categories, the choices set (i.e. mode configuration or packages) is further made, which are to some extent not easily be unbundled. The extant research has made efforts to explain the rationale of mode actions, such as mode changes either as addition or deletion (Benito et al., 1999; Swoboda et al., 2011). However, such integrated existence of modes packages might not necessarily indicate what roles the modes are playing and at what level they are interrelated (Benito et al, 2009). Besides, the roles may

change, spanning from subtle to drastically change, over time and by markets. Additionally, they can vary in importance, where one mode is likely to have a primary role (e.g. foreign market penetration), while the others play various supporting roles (e.g. a specialized role of technology transfer) (Peterson & Welch, 2002). The choice of a specific FOM in a package setting may not be concerned with its generally presumed role. Instead, it could be described by how it adds to the package as a whole. The primary mode has usually been the main or only focus in extant studies on entry mode and internationalization. Yet, supporting modes may play a key role in reaching particular outcomes for the firm. Furthermore, changes in mode roles can be described as an "unacknowledged manifestation of an increase or decrease in international commitment" (Benito et al., 2009, p. 1461). Expansion or enhancement of a role is found to be evident when sales are promising. However, there is little observation of role changes in extant research, which means there is a need for more research in this regard as such role changes may be linked to a substantial change in the firm's foreign operation strategy.

Switching Costs

Even though there is increasing proof of substantial instability in foreign operation methods, Benito et al. (1999) argue that there has been a lack of explanation for mode transitions in extant literature, be it internally or externally (Buckley, 1983). The authors stress the importance of key impediments to mode change, such as costs or difficulties related to implementation of change. Such obstacles can be considered as switching costs, comprising take-down costs and set-up costs (Weiss & Anderson, 1992). These costs might have implications surpassing the actual decision of whether to undertake a change; where different switching cost-levels of FOMs may be important factors in themselves, affecting the foregoing mode choice (Benito et al., 1999). In general, firms can be faced with a tradeoff amidst the cost of staying with an extant suboptimal mode and the cost of switching to a more suitable mode. Due to the perception of switching costs and path-dependencies, firms might face the danger of becoming too rigid in their range of utilized modes. This is depicted in extant literature (e.g. Calof, 1993), showing that firms can seemingly get locked into one particular mode use, especially if the risk-adjusted NPV is lower than the perceived switching cost.

Though, if the former surpasses the latter, this effect will likely not occur (Benito et al., 1999). Besides, a higher discount rate and greater difference in time profiles amidst switching costs and net income streams can lead to a higher chance of lock-in occurrence. In this regard, Buckley and Casson (1981) have also shown that the chance of stalling an optimal mode switch can escalate.

One potential solution is that new entrants could decide to forgo a low-commitment entry mode through leapfrogging in favor of a high-commitment entry mode in order to avoid the anticipated switching costs (Benito et al., 1999). Although this might give a lower stream of net-benefits in the beginning, it will not require subsequent switching costs. Additionally, as firms may want to switch to a different mode after an initial entry mode penetration, Peterson and Welch (2002) state that using subtler intermediate mode changes (e.g. mode additions or roles changes) might be a better solution than a disruptive comprehensive mode switch, at a later point in time. This might help limit the loss of, for instance, knowledge, staff, and network assets, attained in the pre-existing mode. Moreover, by examining how firms can generate good strategic options to help aid mode switches, Petersen, Welch and Welch (2000) stress the importance of building strategic flexibility in the international process, so that firms are more readily capable to switch modes in response to changing circumstances. Focusing on this from the beginning can possibly lay a solid foundation for future operation mode changes, avoiding agreements that are problematic and expensive to change. Furthermore, the authors propose a two-by-two matrix of strategies for use in negotiation for entrants and local partners, comprising the choices of either terminating or integrating operations, which can both be either concealed or revealed to their foreign partner.

Besides, decision makers' general understanding of switching costs (how to assess them properly, how to include them in the decision making and how to possibly circumvent them) may be enhanced over time through international experience. As this topic has been scarcely researched, more studies on manager's perception of FOMs in regards to switching cost need to be undertaken (Swoboda et al., 2011).

Mode Experience and Learning

In general, mode experience may be accumulated in various ways, either through international inward operations (Karlsen, Silseth, Benito & Welch, 2003) or through outward ventures into other markets (Welch & Luostarinen, 1993). In addition, mode experience can be obtained through working with partners or from sole venturing (Benito et al., 2009). The accumulation of mode experience leads to greater mode knowledge. However, this might not be exclusively positive as it can lock firms into the use of existing modes instead of searching for other alternatives, i.e. mode inertia. Furthermore, managers may cling to their past choices as they face an array of various options (Ellis, 2000), operate with a confined choice set (Hutzschenreuter, Pedersen & Volberda, 2007; Larimo, 1995), or inappropriately generalize mode choice, where they employ priory successful modes in new situations (Chetty, Eriksson & Lindbergh, 2006). Through such experiences firms undertake mode learning, which can be seen as a crutial factor for mode change (Johanson & Vahlne, 1977, 2006). In a case study of offshore outscoring (Benito et al., 2013), the academics found that as the firm studied lacked previous experience with the chosen operation mode, location, and foreign partners, therefore it had to engage in mode specific-, contextual-, HR- and relational learning.

In sum, based on Benito et al. (2009), the aforementioned depictions comprise the comprehensive framework on mode choice and change. The full model also contains a feedback loop, underlining the dynamic and evolving characteristic of FOM. To the author's knowledge, the framework has only been partially empirically investigated (e.g. Benito et al., 2011; Benito et al., 2013). Therefore, to obtain a richer understanding of FOMs, research in this vein is highly warranted.

Classification of FOMs

Over the past decades, a variety of mode types have been identified, however, Petersen et al. (2008) argue that the potential borderline of mode configuration can be endless. What is interesting in this regard is the underlying factors that the classification is based on. For instance, Anderson and Gatignon (1986) term 17 mode types which are classified by the levels of control, commitment, and risk;

while Brouthers and Hennart (2007) distinguish amidst contractual and equity modes, a dimension based on ownership. Moreover, in empirical studies, researchers have often chosen to focus on some specific modes, often with a focus on only one value activity (Hashai, Asmussen, Benito & Petersen, 2010). However, these studies do not reflect the more "messy" reality which is observable in the real world (Benito et al., 2009). Still, the aforementioned classifications are based on entry mode research, which does not encompass a dynamic aspect or the concept of multiple mode use.

FOM Diversity Matrix

Petersen et al. (2008) propose a matrix building on Porter's (1986) activity configuration grid, which depicts value activities and their locations. The authors add corporate diversity as an additional factor, creating a matrix configuration describing firm's mode packages in terms of value activities, their location and the corporate diversity. Such an approach opens up for identifying a higher level of mode diversity and change possibilities, than that of much extant research in the field, which has not managed to capture this comprehensively. In their study, the FOM diversity matrix is configured in the following three levels:

Value Added Activities: Porter (1986) makes distinction amidst functions, e.g. marketing, which then again encompass many different activities, e.g. market analysis. In order to justify the employment of an individual value activity as the unit of analysis, certain scale and distinctiveness is offered through various value configurations (Stabell & Fjeldstad, 1998).

Location: The simplest analysis of location is a dichotomy, one focal country in addition to home country, which seems to have been the most commonly applied distinction for the location factor. However, firms usually operate in multiple locations, although they usually only have one home country.

Corporate: At this level, the diversity comprises the complete FOM matrix where decisions are made at both activities and location levels. Here each cell of matrix is filled with different types of governance form. Five basic governance forms are proposed (Petersen et al., 2008): market or arm's length exchange, equity sole venture, equity joint venture and non-equity agreements (contracting out, contracting in).

Both empirical and conceptual investigations have been newly applied to this Activity-Location-Corporate diversity matrix. Hashai et al. (2010) perform panel data entry modes analysis of Israel top publicly listed industrial firms in a timeframe of four years. The investigation extends the traditional foreign market entry mode analysis from only one entry mode market to many entry modes along firm's value chain in diverse markets, with especial focus on technological knowledge intensity. The authors reveal that organizational learning have positive effects on entry mode diversity at both location and corporate levels, while less influences at the activity level. In addition, when value chain activities are less adhered, such industries (e.g. textile) have a greater diversity at location level. While technology intensive industries tend to have diverse entry modes in each chain activity. Future research is needed to focus on other factors, e.g. firm-specific characters, culture distance and institutional gaps, to capture institutional differences and firm specific features in addition to technology-intensity as explanatory variables; and it is requested to use up to date and longer periods data to capture the dynamic of FOMs. In addition, through multiple case studies of six Norwegian firms' FOMs (Benito et al., 2011), the research discovers that various mode combinations are not just temporary phenomena, they enlarged rather than reduced over time. Unique mode packages are employed to certain activities and locations with a dynamic trend. Still, future research is desired to investigate the behavioral aspect of management issues. Moreover, the theoretical research from Benito (2015) contends that different value activities are often associated with certain motives: marketing and sales are related to market-seeking; manufacturing are linked to efficiency-seeking activities; extraction and production (e.g. in oil and gas industry) is interrelated with resource-seeking; and R&D activities are associated with strategic asset-seeking intention.

METHODOLOGY AND DATA

Research Design

The study will employ a mixed method embedded sequential design (Bryman & Bell, 2015). To the best of the authors' knowledge, there is shortage of research to conduct both quantitative regression and qualitative case studies to analyze the dynamic FOMs and mode combinations of one single country in a longitudinal

study. Therefore, our study will start with quantitative secondary data gathering, followed by in-depth case studies of three distinctive firms, identified in the quantitative analysis. The first part of this study will be undertaken in order to outline a general picture of how the Norwegian OGSF industry conducts their FOMs. The descriptive picture will be taken on the basis of two points in time, depicting the industry at different stages in the business cycle (Bryman & Bell, 2015).

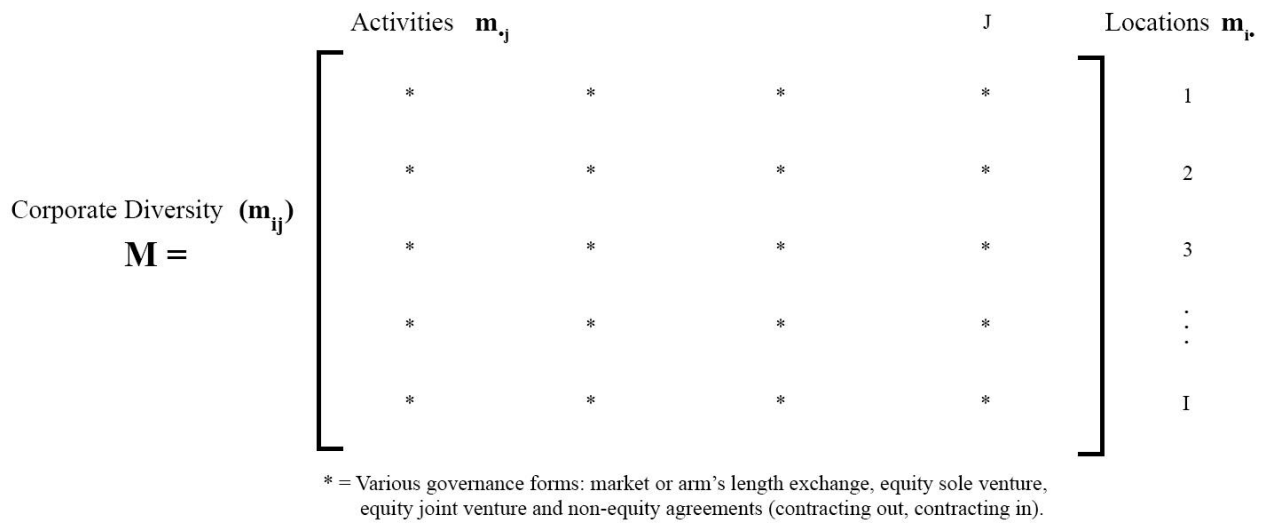
For the latter part of this study, the qualitative analysis will utilize both secondary and primary data; as such combinations are generally seen as apt for empirical studies (Saunders, Lewis & Thornhill, 2000). The qualitative design will take a descriptive case approach (Benito et al., 1999), and the time perspective will be longitudinal, tracking the three cases all the way back to the founding of the firms. Authors have commonly called out for undertaking longitudinal studies within this field of research (Pedersen et al., 2002; Asmussen et al., 2009; Benito et al., 2009), as most studies on mode choice has been cross-sectional (Brouthers & Hennart, 2007). Although some studies have recently utilized a longitudinal perspective, the tracing either comprise a relatively short time period (Benito et al., 2011) or focus on only one type of mode (Benito et al., 2013). A multiple case methodology is chosen, especially as it is pertinent for tracing complex longitudinal processes (Blazejewski, 2011; Pratt, 2009; Soulsby & Clark, 2011). Additionally, it is chosen as it is fitting for exploring firms with distinctively different mode packages, obtaining rich data variance and diversity (Pauwels & Matthyssens, 2004; Petersen et al., 2008). Besides, as our research questions contain wording such as “how” and “why,” and in this regard case study methodology can be seen as an appropriate research approach (Ghauri, 2004). Furthermore, the choice method follows the argument of Benito et al. (2011), which posits that the in-depth investigation of a case approach is particularly apt for research on the dynamic concept of mode packages, broken down by value chain function, country and structure.

In general, data triangulation will be undertaken, the quantitative analysis helps in building a more accurate picture of reality, and it is used to compliment the more comprehensive qualitative data gathered through the in-depth interviews (Bryman & Bell, 2015). Moreover, the use of triangulation can be pertinent for validation of the gathered data (Piekkari, Plakoyiannaki & Welch, 2010).

Quantitative Data Collection and Analysis

This study will utilize the classifications in the FOM diversity matrix proposed by Petersen et al. (2008) as the first step to conduct the secondary data coding and quantitative analysis. For instrumental purpose regarding to the coding, we will restrict ourselves to the specified activity-, location- and corporate-level categories proposed in the extant conceptualization of the matrix model, depicted below (Figure 1). For the activity level, the diversity represents a vector $m_{\cdot j}$, where j = 1, 2 … J. The analysis will focus on various value-chain functions, in addition to possibly employing value-shop functions for firms adhering more closely to such an activity configuration (for detailed descriptions see Stabell & Fjeldstad, 1998). For the location level, the diversity represents a vector $m_{i\cdot}$, where i = 1, 2 … I; this study will look at OGSF firms from one home country, Norway, and identify the locations of their foreign operation(s). The corporate level, denoted as $M = (m_{ij})$, represents the entire matrix, where each cell will be filled in with decisions of governance forms made at both activity and location levels, where the employed governance dimension in this study will be based on the five dimensions identified in Petersen et al. (2008). The unit of analysis will be at the corporate level comprising the different activities in use, their location and their structure. As mode packages components and their roles are bound to differ due to a variation in external factors like government regulations and market pressures (Luostarinen & Welch, 1990), it can be of interest to look for differences amidst entrances into advanced- and emerging markets. In order to ensure that both researchers are consequent in their coding, a coding manual will be designed and employed for the process of collecting data. Our sample will be based on a list of Norwegian OGSF, which will be identified within the recent economic period of both peak and low points in time (2005—2016) (Alix Partners, 2017) in order to avoid survival bias from the study. In addition, the firms without any history of foreign operation(s) within the upturn and downturn period will be excluded from the investigation.

Figure 1: Diversity Matrix



In order to get an overview of FOM diversity of Norwegian OGSF industry and identify the three distinct firms (i.e. one industry average firm, and two other distinct firms) to serve the following qualitative case study, the coding and regression methodologies are mainly based on the methodology from Hashai et al. (2010); Lee, Kelly, Lee & Lee (2012) and Benito (1997). Dependent variables here are the three levels of FOM diversity. They are assessed through previously mentioned five governance forms for foreign business entity in order to allocate various forms to specific locations and activities. For independent variables, technological know-how (i.e. R&D expense), institutional gaps (i.e. host country risk) and cultural distance are used for coding. In addition, the following variables are used to control for firm-specific effects: firm size (i.e. economies of scale), firm ages (i.e. age of HQ and foreign entity), value configuration type (i.e., either value chain or shop), value configuration scope and international diversity (i.e. international strategy).

The data gathering will be obtained from multiple sources. Databases, such as Thomson Reuter's SDC Platinum, MarketLine and Factiva, will provide us with information on international data, in the form of strategic alliance, JV, M&A and greenfield. Additionally, information will be gathered from research institutions, for instance, Menon and BI Norwegian Business School. Secondary data, in the form of organizational websites and documents, and mass media outputs, will also be coded into our final data file (Bryman & Bell, 2015).

Qualitative Data Collection and Analysis

The subsequent step, following the quantitative analysis, will be to obtain first hand qualitative data for our case analysis, gathered from company informants. In accordance with prior studies on this papers topic, the main qualitative data gathering instrument in use will be semi-structured interviews (Benito et al. 2013). This allows for a smooth flow in the discussion, where the interview objects are able to describe memories from the past events as they are emergently recalled. It also enables the possibilities for the interviewer to probe into interesting insight and extract even deeper and richer information (Cooper & Schindler, 2014). Additionally, it opens up for the surfacing of curious topics the researchers want to follow up on, which might not have been identified prior to a specific interview (Bryman & Bell, 2015). When obtaining longitudinal information spanning a time horizon of past events, interviews can be seen as a pertinent way of collecting data from people that experienced and are able to recall them. Besides, Benito et al. (2011) discovered that the interview objects in their study managed to recall and contemplate such past events of mode combination use at disaggregated levels of the value chain, albeit the study only comprised a limited time period of four years. For our study purpose, it will, therefore, be vital to get informants with a long history in the industry. In general, a standard interview guide will be designed and mainly employed, with certain variations, as firms and types of respondents will differ. All interviews will be recorded, in accordance with the respondent's consent.

The firms chosen for the case analysis will be drawn from the results of the quantitative analysis, where the industry average is calculated. On the basis of this, both a firm representing the industry in general and two distinctively different cases will be chosen. In the selection of cases, we will undertake purposeful sampling, in order to select cases that are relevant to the research question (Bryman & Bell, 2015). The power of employing such an approach lies in the ability to choose cases that are rich in terms of information and display the relevant characteristics for theory application (Eisenhardt, 1989; Patton, 1990).

All interviews will be transcribed before undertaking the qualitative data analysis. The narration of the development of the individual firm's international evolution will be subsequently elucidated through the use of thick descriptions,

followed by a cross-case analysis in order to identify differences and similarities (Cooper & Schindler, 2014). In the analysis, an inductive approach will be utilized, where case inferences will be drawn out and generalized to theory (Bryman & Bell, 2015). Furthermore, the case method is increasingly used in research which aims to test theory, and in accordance with the critical realist perspective, it can be seen as an apt approach to such investigations (Benito et al., 2011). Thus, our analysis will also bear such a characteristic.

TIME PLAN

In order to keep track with our master thesis, the Gantt chart will be employed (See Table 1). Meetings with the supervisor will be scheduled in order to receive feedback and advices during the master thesis process. Communication amidst the researchers will be highly frequent, with regular meetings and discussions.

Table 1: Gantt Chart

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
Research strategy, design, and methods												
Literature review												
Preliminary report				15th								
Quant. data collection												
Qual. data collection												
Establish contact with companies												
Data analysis												
First draft												
Second draft												
Final draft												
Submit thesis												1st

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