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The Profitability of Competitive Aggressiveness

The Moderating Effect of Industry-Related and Organizational Factors

Master's Thesis
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Abstract

The literature on competitive dynamics emphasizes the positive performance effects of competitive aggressiveness. The more actions a firm takes with the greater speed of execution, the better is the profitability and bigger the market share. However, some studies have questioned the claim of this statement. Competitive aggressiveness might not be required at all times and its benefits might depend on organizational and environmental conditions. This study looks into the industry-related and organizational conditions under which firms benefit from being competitively aggressive and when a more restrained approach is more profitable. More precisely, this study examines the moderating effects of industry growth, market position, firm age and firm size on the relationship between competitive aggressiveness and firm performance.

The research model and the hypotheses are derived from the research on entrepreneurial orientation and competitive dynamics. A quantitative study is based on a sample of 821 firms from 21 different industries in Finland. The empirical data is collected by StartMark 2012 online survey conducted to investigate the current state of strategic marketing in Finland. The proposed model of this study is tested with a confirmatory factor analysis. Subsequently, a moderated multiple regression analysis (MMR) is used to test the hypotheses.

The findings suggest that competitive aggressiveness is positively connected to a better performance under most circumstances. The results indicate a significant moderating effect of firm size. Thus, this study argues that the profitability of competitive aggressiveness is context dependent. By combining the industry-related and organizational moderating effects in a framework, that integrates with competitive aggressiveness and firm performance, this study enriches our knowledge on the implications of competitive aggressiveness.

Keywords competitive aggressiveness, competitive dynamics, firm performance

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Abstract of master's thesis

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Työn nimi Kilpailullisen aggressiivisuuden kannattavuus: Organisaatio- ja alakohtaiset moderoivat tekijät.

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Tiivistelmä

Kilpailudynamiikan kirjallisuus kertoo kilpailullisen aggressiivisuuden johtavan parempaan suorituskykyyn. Mitä enemmän ja nopeammin yritys toteuttaa kilpailullisia toimenpiteitä, sitä parempi on sen tuloksellisuus ja suurempi on sen markkinaosuus. Jotkut tutkimukset ovat kuitenkin kyseenalaistaneet tämän väitteen todenmukaisuuden. Yritysten kilpailullisesti aggressiivinen toiminta ei ole aina välttämätöntä vaan sen kannattavuus saattaa riippua organisaatio- ja alakohtaisista tekijöistä. Tämä tutkimus keskittyy tutkimaan organisaatio- ja alakohtaisia olosuhteita, joissa yritykset hyötyvät kilpailullisesta aggressiivisuudesta ja joissa taas hillitympi lähestyminen on kannattavampaa. Tutkimus paneutuu selvittämään alan kasvun, markkina position, yrityksen iän ja koon moderoivaa vaikutusta kilpailullisen aggressiivisuuden ja sen kannattavuuden suhteeseen. Tutkimusmalli ja hypoteesit ovat johdettu yrittäjämäisen orientaation ja kilpailudynamiikan tutkimuksesta.

Tämä kvantitatiivinen tutkimus pohjautuu 821 yrityksen otokseen 21 eri alalta Suomessa. Tutkimuksessa on käytetty StratMark 2012 verkkokyselyn aineistoa. Kyselyn tarkoituksena oli tutkia tämänhetkisen strategisen markkinoinnin tilaa Suomessa. Tässä tutkimuksessa on käytetty kahta monimuuttujamenetelmää mallien ja hypoteesien testauksessa: faktorianalyysia ja usean muuttujan regressioanalyysia.

Tulokset osoittavat kilpailullisen aggressiivisuuden vaikuttavan positiivisesti yrityksen tulokseen eri olosuhteissa. Yrityksen koolla on kuitenkin merkitsevä moderoiva vaikutus. Sen takia, voidaan sanoa yrityksen kilpailullisen aggressiivisuuden olevan riippuvainen kontekstista. Liittämällä organisaatio- ja alakohtaiset vaikutukset malliin, mikä yhdistää kilpailullisen aggressiivisuuden ja yrityksen suorituskyvyn, tämä tutkimus rikastaa tietämystämme kilpailullisen aggressiivisuuden vaikutuksista.

Avainsanat kilpailullinen aggressiivisuus, kilpailudynamiikka, kilpailu, kilpailutoimenpiteet

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1. INTRODUCTION

1.1 Background of the study

Research in marketing and management generally highlights how market environment is becoming more complex. Today people have a larger amount of choices when acquiring goods and services. People expect to receive higher quality, lower prices and faster delivery but also, services that are specifically designed for their personal needs. The evidence of the fast accelerating complexity of the market environment is persuasive. For instance, in the mobile phone market, the three main demographic segments have turned into over 20 need and value based segments in the last ten years. The number of offerings has expanded into the hundreds with a wide variety of different capabilities. The number of distribution channels has increased from three to more than ten. With tailored pricing plans, the price range has also expanded considerably. Beyond the mobile industry example, the forces of market fragmentation and rapid change are everywhere. Organizations are struggling to react to shifts in the market especially when time is not on their side. It takes time to collect new information, interpret its meaning, and then convert it into acts. Traditional decision processes are often cautious and slow. By the time, a new marketing initiative is finally launched, the market has moved forward to a new state. The pace of technology has not slowed down. Indeed, there is a widening gap between the accelerating complexity of markets and the capabilities of most marketers. Organizations aspire to close the capabilities gap but is the goal realistic? A more realistic and achievable goal is to close the gap faster than rivals. (Day, 2011).

As a result of the higher speed of competition, today's market environment is getting increasingly competitively challenged (Derfus et al., 2008). Firms are constantly looking for new ways of keeping up the pace of technology and at the same time, they aggressively challenge their competitors to get themselves to the top of the game (e.g. mobile industry) (Smith et al., 1996; Lumpkin & Dess, 1996). Firms are challenged with aggressive price

competition, innovations and marketing campaigns, and everyone has greater pressure of sustaining their competitive advantages than ever before (Chen et al., 2010; Ferrier, 2001) They are forced to pay close attention to their competitor's actions and initiate a series of their own or otherwise, one might be knocked out of the competition. The empirical research on the competitive dynamics also shows that firms' competitively aggressive behaviour leads to a better performance (Ferrier et al., 2001; Smith et al., 1991; Young et al., 1996). If a company is able to set more actions faster than its rivals, it creates market advantages and is less affected by the actions of its competitors. This holds up in a great variety of empirical studies in different industries: Smith et al. (1991) examined the competitive actions of U.S. domestic airlines over a six-year period. Young et al. (1996) studied the software industry and Ferrier, et al. (2001) studied the Fortune 500 firms. The research states that the more actions a firm takes with the greater speed of execution, the better is the profitability and market share. Action aggressiveness gives a certain kind of insurance for companies to maintain their winning position in the competition.

So, is this the whole truth? Some researchers have questioned the claim that competitive aggressiveness always leads to a better performance: entrepreneurial actions are a complex phenomenon that may not always be associated with a strong performance (Derfus et al., 2008). The benefits of aggressive competition depend on environmental conditions and the resources of the company (Chen et al., 2010a; Lumpkin & Dess, 1996). Recent studies show that competitive aggressiveness is more crucial in fast changing environments than in slow-changing environments (Chen et al. 2010a; Nadkarni et al., 2016). In slow-changing environments such as in established industries, the increasing competition means higher costs, lower performance and challenges to find new opportunities for everyone. This is why some companies might want to limit the industry competition and maintain their status quo — particularly market leaders (Chen et al. 2010a). Not only the pace of change in the environment but also the firm's market position influences the benefits of competitive aggressiveness. Further, the research highlights the importance of organizational resources, which can significantly limit or contribute to a firm's ability to compete aggressively and direct competitive moves in the right directions. Barnett and McKendrick (2004) found that larger firms benefit more from their competitive actions while comparing the competitive behavior of large and small firms'. Similarly, Ferrier

(2001) points out that high level of organizational slack provide resources that are required for aggressive competition.

Finally, some researchers have even questioned if aggressive competition focuses too much on market shares and not enough on real profits. There is a risk that relative measures such as market share might lead to managers making unprofitable decisions (Amstrong & Collopy, 1996) or over investing in competitive activities (Chen & Hambrick, 1995). Most likely, imitation is not the most profitable action in the end. Some scholars even consider aggressive competition as a waste of resources, and potentially restricts firms from exploring rewarding opportunities in the global marketplace (Covin & Covin, 1990).

1.2 Research gap and objectives

The literature on competitive aggressiveness and competitive dynamics leaves several issues open. Most importantly, although theoretical arguments propose that competitive aggressiveness creates more advantages in some markets than others (D'Aveni et al., 2009; Chen et al., 2010a), most empirical studies are conducted in the United States concentrating mostly on established industries. The United States, with over 324 million people, is the world's third most populous country and the market demand is in its own class. Thus, the generalizability of the research findings in smaller and more concentrated markets can be questioned. Given a scope and complexity of today's global marketplace, there is a need to investigate competitive dynamics beyond the U.S. in different markets and cultures. Furthermore, the empirical research on competitive aggressiveness shows a trade-off between a deeper understanding of single-industry principles and the broader understanding that multi-industry studies can provide. More specifically, the former type of study investigates all firms in a given industry (e.g., Young et al., 1996), whereas the latter only includes a few of the largest firms across multiple industries (e.g., Ferrier et al., 1999) forgetting the market challengers.

Secondly, prior research still presents contradictory results regarding the profitability of firms' competitive aggressiveness. Studies argue that aggressive competition always lead to better performance because otherwise, the market competition eventually erodes the current market position (Ferrier et al., 1999). However, mentioned researchers Chen et al.

(2010a) and Lumpkin and Dess (1996) believed that the profitability of competitive aggressiveness is context dependent. Still, most studies have tried to understand the relationship explaining it either only by industry-related factors or by organizational factors. As Lumpkin and Dess (1996) noted, several industry characteristics and organizational factors influence the profitability of competitive aggressiveness, and the formula of success is much more complicated than that. Research needs to investigate the industry-related and organizational factors simultaneously in order to find the key factors explaining the winning strategies.

Further, empirical literature mostly focuses on observable competitive moves such as pricing and advertising but often overlooks less visible competitive actions such as new product and service developments and market expansions. Yet, it seems likely that the actions that are more difficult for competitors to track are highly relevant in creating sustainable advantages in fast changing world. Chen and Miller's (1994) findings support the consequences of attack visibility: visibility of the attack correlates positively with the number of responses whereas difficulty of attack correlates negatively to responses.

The objective of this research is to capture how competitive aggressiveness relates to firm performance. Most importantly, this study takes the research of competitive dynamics away from the U.S. to a relatively unexplored context – the Finnish markets. Finland is a relatively small country with only 5.5 million inhabitants. Because of its remote geographic location, small population and rare settlements, Finnish markets are relatively concentrated even though, Finnish economy is deeply integrated in the global economy. This study looks into the industry-related and organizational conditions under which firms in Finland benefit from being competitively aggressive in and when a more restrained approach might be more profitable. Thus, the main research question of this study is:

Under what kind of conditions will competitive aggressiveness be positively associated with firm performance?

More precisely, the moderating effects of industry growth, market position, firm age and firm size are explored in this study. The prior research on competitive dynamics has found

that these affect the profitability of competitive actions and hence, most likely influence the profitability of competitive aggressiveness. The only exception is firm age which benefits have yielded little results in the past. However, the more current literature emphasizes the importance of a firm's capabilities to initiate profitable moves in today's marketplace (Day, 2011) and industry experience has a vital role in it (Covin & Covin, 1990).

In order to gain a broader view into the Finnish competition, a multi-industry study is conducted including firms of different age and size in Finland. This research does not only focus on high-performers but also low-performers. Hence, this paper seeks to investigate both why (via theory development) and how (via empirical analysis) competitive aggressiveness is related to firm performance in Finland.

1.3 Structure of the research

This paper is divided into six major chapters and investigates one of the five dimensions of entrepreneurial orientation (EO)—competitive aggressiveness. This study draws on a prior theory from the evolutionary theory and competitive dynamics. Chapter 2 starts the discussion by introducing the main dimensions of entrepreneurial orientation. Subsequently, the main empirical research conducted on competitive aggressiveness and competitive dynamics is presented to create a theoretical baseline for the research model and hypothesis of the study.

Chapter 3 introduces the research model and hypotheses derived from the previous research and the evolutionary theory. This empirical research uses the components of EO to provide justification for exploring the research question. These are (1) competitive aggressiveness related to firm performance, and (2) moderating effects of industry growth, market position, firm size and firm age on the relationship.

Chapter 4 first introduces the data collection methods and sample characteristics including the measures used in this study. To test the hypotheses, a sample of 821 companies from 21 different industries is examined. The research methodology leans strongly on previous studies of competitive aggressiveness and competitive dynamics. The statistical methods,

confirmatory factor analysis and moderated multiple regression analysis, will be discussed at the end of this chapter.

To address the research question, both a confirmatory factor analysis and a moderated regression analysis are employed. Chapter 5 introduces the results from the statistical data analysis by going through a confirmatory factor analysis, Pearson's correlation test and a moderated multiple regression analysis. Industry-related characteristics (industry growth and market position) and organizational characteristics (firm size and firm age) are tested as moderators.

In the final Chapter 6, the results are discussed and critically analyzed reflecting on previously conducted research. Chapter 6 also includes managerial implications, research limitations and future research recommendations based on the results.

2. LITERATURE REVIEW

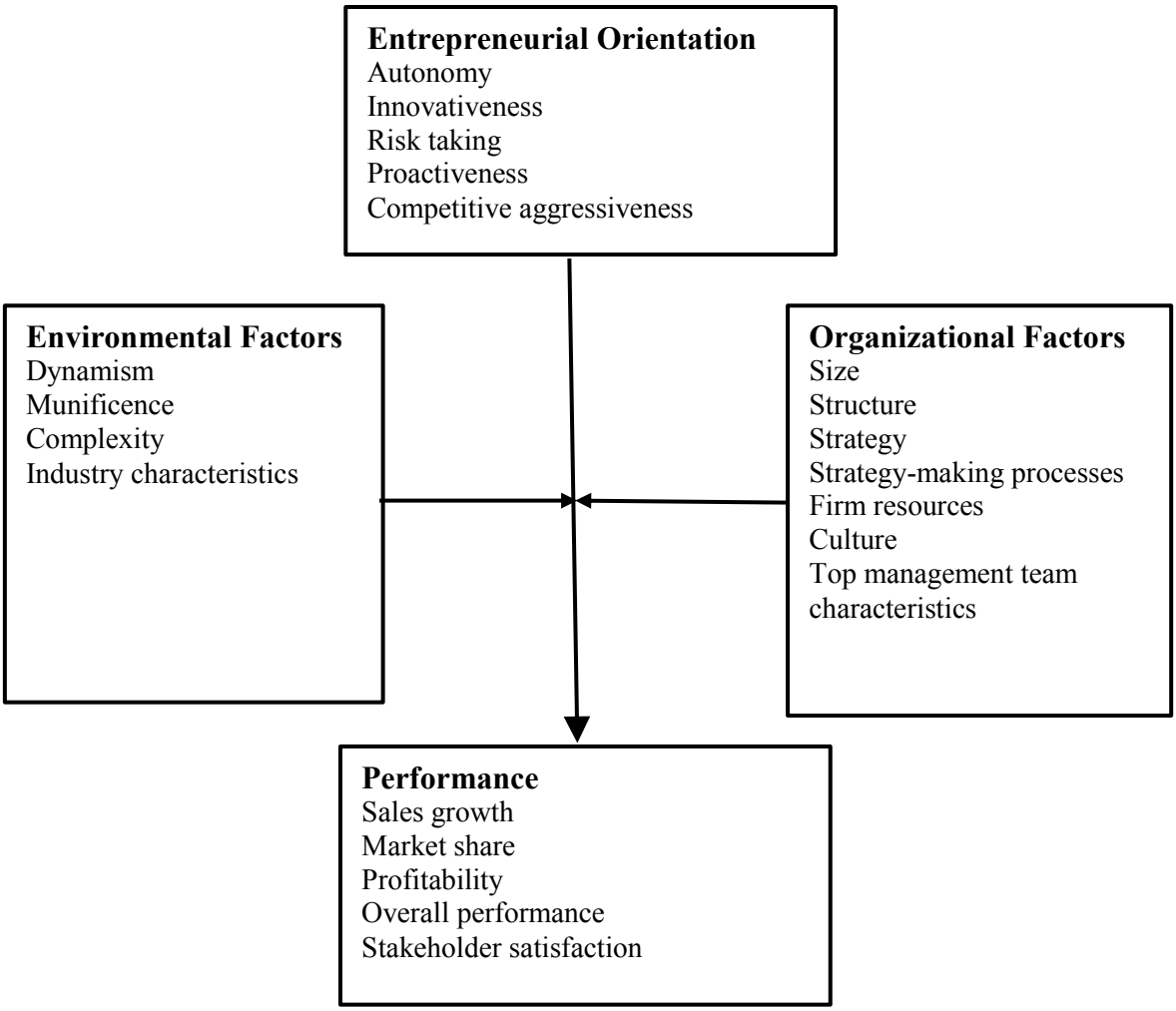
In a poor economy situation such as Finland is facing at the moment, entrepreneurial activity is one of the most important engines of economic growth. Writers in both the scholarly literature and popular press have argued that entrepreneurship is an essential feature of high-performing firms. Competitive aggressiveness is a vital component of entrepreneurial orientation and competitive dynamics (Lumpkin & Dess, 1996). The next subchapters will discuss the research on entrepreneurial orientation and competitive dynamics more in depth followed by a discussion of competitive aggressiveness in different contexts.

2.1 Entrepreneurial orientation (EO)

The term entrepreneurial orientation (EO) is used to refer to firms' decision-making processes and styles of exploiting entrepreneurial activities. Authors Lumpkin and Dess (1996) created a popular model of entrepreneurial orientation (EO) which is formed by five

dimensions — autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness. They suggested that a firm's entrepreneurial orientation comes from the key dimensions of a firm's management style and strategy making process. The key dimensions that characterize the entrepreneurial orientation are (1) ability to act autonomously, (2) a willingness to innovate and (3) take risks, (4) be proactive towards marketplace opportunities and (5) a tendency to be aggressive toward competitors. The authors defined that any firm with an effective combination of the five dimensions can be categorized as entrepreneurial-oriented. (Lumpkin & Dess, 1996). The Figure 1 presents the key dimensions of EO.

Figure 1. Dimensions of Entrepreneurial Orientation by Lumpkin & Dess (1996)



The first dimension of entrepreneurial orientation, dimension of autonomy, refers to an organization where individuals and teams are able to present and implement their own ideas without heavy organizational constraints. The history is filled with stories of pioneers with a unique idea, in which they believed and made a business out of. These pioneers often decided to leave their secure positions in order to promote their ideas into new markets because heavy organizational processes inhibited them. It is the freedom and autonomy of employees that is needed for entrepreneurship to occur. (Lumpkin & Dess, 1996).

The second and third dimensions, innovativeness and risk taking refer to an organization's ability to support new ideas, creative processes and experimentation that could lead to new products and services. The definition of risk taking often conveys one's ability to tolerate a sense of uncertainty. Every firm needs to take a certain amount of risks in business. However, entrepreneurial-oriented firms are more comfortable with risky actions, such as taking loans, investing in new technologies, or bringing new products into new markets. (Lumpkin & Dess, 1996).

The fourth dimension, proactiveness refers to a forward-looking perspective and the anticipation of future changes. Entrepreneurship theory emphasized the importance of first-mover advantage as the best strategy for capturing unusually high profits on a market opportunity. Thus, taking initiative by anticipating new market opportunities has also become associated with entrepreneurship. (Lumpkin & Dess, 1996).

This research focuses on the final dimension of entrepreneurial orientation: the competitive aggressiveness. Lumpkin and Dess (1996) present competitive aggressiveness as the fifth dimension of entrepreneurship that is frequently mentioned in the literature**.** It is characterized as the speed and number of competitive actions a firm takes in comparison to its competitors. The meanings of two of the dimensions: proactiveness and competitive aggressiveness are similar but competitive aggressiveness always refers to actions toward competitors and achieving competitive advantage. While the dimension of proactiveness refers to actions caused by the anticipation of future problems and changes. (Lumpkin & Dess, 1996).

The empirical research of this study is relying on the model of EO focusing on the dimension of competitive aggressiveness and its relationship to performance. Lumpkin and Dess (1996) argued that competitive aggressiveness is one of the most important dimensions in explaining entrepreneurial orientation and firm performance. The next subchapters introduce the prior research on competitive dynamics and competitive aggressiveness.

2.2 Competitive dynamics

In every industry, it is essential for firms to initiate competitive actions in order to grow and improve their market position. Similarly, competitive actions are essential to defending already earned advantages and maintaining the current market position. Indeed, companies are interdependent and that is why a pressure for competitive actions comes from industry competition and the actions of rivals. The more intense the competition is within an industry, the greater is the pressure to act. (Ferrier, 2001; Young et al., 1996). A series of actions (moves) and reactions (countermoves) among firms in an industry create competitive dynamics and industry competition. This can be seen as a contest in which each firm's performance depends on the actions of rivals and gained advantages lead to losses of others. The only way to maintain one's own performance relation to others is by taking actions of one's own. Hence, each firm in an industry is forced to participate in continuous and escalating actions and eventually, firms run as fast as they can just to stand still. (Derfus et al., 2008).

The importance of the competitive dynamics was first pointed out in Joseph Schumpter's (1942) theory of creative destruction. Schumpeter described the creative destruction process as a "perennial gale". This gale of competition is generated by the extraordinary profits earned by the actions of the first moving firm. The extraordinary gains obtained by leaders motivate other competitors to take actions or reactions in order to enjoy the same profits. Schumpeter emphasized that as a result of the creative destruction process, no firm was safe from the market process of competition. (Schumpeter, 1950).

Inspired by Schumpeter, since the 90's the research on competitive dynamics has focused

on competitive actions and reactions carried out among competing firms. Action is defined as a specific and detectable competitive move, such as a price cut, marketing action or a new product introduction, initiated by a firm to defend or improve its relative market position. Similarly, a response is a counteraction taken by a competitor to defend its position. (Chen et al., 1994; Smith et al., 2001). The empirical research on competitive dynamics has studied various firms that interact with one another trying to explain both the causes and the consequences of action and reaction and the dynamics of an industry. For instance, Smith et al. (1991) examined the competitive actions of taken by U.S. domestic airlines to towards one another over a six-year period. Young et al. (1996) studied the actions of all software producers towards one another over a ten-year period. Ferrier et al. (1999) studied the actions of matched leader-challenger pairs across 41 different industries. The prior research emphasizes that all advantages are temporary and therefore, continuous actions are essential for survival.

As mentioned, actions motivate the rivals conduct responses in order to catch up their lost market share. The research on competitive dynamics has shown that the characteristics of an action are important predictors of competitive respond (e.g., Chen et al., 1992; Smith et al., 1991). Chen and Miller (1994) examined more closely, how competitive actions, called attacks, can best reduce the chances of retaliation and creating more sustainable advantages. They argue that firms should avoid retaliation given its negative associations with performance. They noted that rivals do not respond the competitive actions if they are not aware of it or if they believed that they have a small change to of respond it effectively. Hence, subtle competitive actions that are covert, hard to respond to, and targeted towards peripheral market areas are seen more effective. Whereas, bold and highly visible attacks targeted more of rivals' customers are seen less profitable because of the higher number of competitive responses. (Chen & Miller, 1994). Similarly, Smith et al. (1992) found in their empirical study that actions such as price cuts and new advertising campaigns lured faster responses overall (i.e., averaging about 7 months) than more subtle actions such as new product introductions (average response time about 22 months).

2.3 Competitive aggressiveness

Competitive aggressiveness refers to a firm's propensity to intensively challenge its competitors to improve its market position and outperform industry rivals in a marketplace (Lumpkin & Dess, 1996). Competitively aggressive firms are those who pay close attention to their competitors' actions and initiate a series of their own. In other words, they prefer to invest in competitive actions such as product launches, marketing campaigns and price competition more frequently than others. It is characterized as the speed and number of competitive actions taken by a firm in comparison to the firm's direct rivals (Lumpkin & Dess, 1996).

Competitive dynamic research has broadly attempted to explain both the causes and consequences of competitive aggressiveness with particular emphasis on firm performance. Schumpeter (1934) predicted many years ago that market leaders that fail to continually create new actions would eventually have their market positions eroded by rival firms. Empirical research has supported the Schumpeter's theory. Young et al. (1996) investigated the computer software industry and demonstrated that high levels of competitive activity lead to superior firm performance. A few years later, Ferrier et al. (1999) conducted a multi-industry study and found that aggressive firms also experience higher market share gains. They learned from their study that industry leaders will decline if they become self-content and less aggressive. Sleepy firms that that are less aggressive than their rivals, appear to have been caught off guard, as evidenced by market share erosion. (Ferrier et al., 1999). Indeed, the prior research has shown that competitively aggressive firms are more likely to improve their competitive positions, market share, and increase their performance. More specifically, the more total actions a firm carries out with greater average speed (i.e., aggressiveness) the better is its profitability and market share (Ferrier et al., 1999; Young et al., 1996). In turn, firms that initiate competitive actions slower than their rivals often do not succeed in the competition (Derfus et al., 2008).

Contrary to prior research, some have questioned the claim of competitive aggressiveness leading to higher profits. Amstrong and Collapy (1996) argued that companies focus too much on market shares instead of real profits. The traditional economic theory suggests

that a firm's main goal should be maximizing the shareholder's wealth. However, in reality, managers do not often make decisions based on profits but instead they seek opportunities to outperform their main competitors. Armstrong and Collapy (1996) noticed that managers often think that future profits are too difficult to forecast, which may lead to excessive short-term orientation. It can be hard to tell how close a firm is to its maximum profits when the frame of reference is missing. That is the reason why most managers prefer relative performance indicators such as market share in their decision-making. Market share is a more visible and encouraging performance indicator than the real profits because competitors in the industry give the right kind of benchmark. (Armstrong & Collapy, 1996).

The problem is that an indicator such as market share tends to hide the truth about real profits. There is a risk that relative measures such as market share might lead managers to make unprofitable decisions (Amstrong & Collopy, 1996) or over invest (or under invest) in competitively aggressive activities (Chen & Hambrick, 1995). For example, in a price war, managers can shift their focus from attaining their own success to preventing their competitors' success. Eventually, the decision might reduce real profits (Armstrong & Collapy, 1996) and restrict firms from exploring rewarding opportunities in the global marketplace (Covin & Covin, 1990). Amstrong and Collapy (1996) made a laboratory study where they compared two groups: to the other group they only gave information about their own profits and to the other one, they gave the same information and also information on the profits of competitors. The study revealed that 40% of people in the latter group, who had the information of their competitor's profits, selected less profitable alternatives. Amstrong and Collapy (1996) suggest that managers should not set goals based on market share but instead design information systems to measure real profits.

2.3.1 The Influence of competitive landscape

As discussed above, research on competitive dynamics shows some discrepancy related to the profitability of competitive aggressiveness depending on how it is measured. In addition, a large number of the scholars have been interested in the factors of competitive landscapes explaining the profitability of competitive aggressiveness. As Lumpkin and Dess (1996) state in their study, competitive aggressiveness might not be required at all

times and its benefits might depend on intra-organizational and external environmental conditions. It is good to remember that managers must be able to follow the competition in order to make profitable decisions, but they need to make these decisions within a framework created by the marketplace and resources of the company.

Competition always occurs within the context of an industry. The more competitively aggressive companies there are in an industry, the more competitively challenged the industry is and thus, the more temporary are the advantages earned (D'Aveni, 1994). D'Aveni (1994) first introduced the idea of a hypercompetitive environment determined by the level of competitive aggressiveness within an industry. He emphasizes the idea of temporary advantage: an environment in which advantages are rapidly created and destroyed due to competition. Some researchers have tried to find indications of environmental circumstances in which hypercompetition most likely emerges. The effects of the traditional measures of industry structure such as industry growth, concentration and market position are used to explain the level of industry competition.

The prior research suggests that competition is more intense in established industries. Firms in established industries recognize their mutual dependence and notice new actions of competitors faster (Derfus et al., 2008; Ferrier et al., 1999). When the mutual awareness is high, competitors will learn how to respond to competitors' actions in order to defend the negative consequences of nonresponse (Young et al., 1996). It follows that competitive actions only generate highly temporary advantages and a hypercompetitive environment (Derfus et al., 2008). Derfus et al. (2008) investigated the Red Queen competition between different industries and detected that the relationship between a focal firm actions and a rival's actions is more intense in established industries and less intense in growing industries. In stable industries, the growth comes from occupied customer segments. Strictly speaking, the only way to increase profits and market share is to steal the customers from others. Whereas, companies in growing industries are able to be successful without intense competitive threat when the demand is growing. They are able to increase their revenues simply by maintaining their market share of steadily increasing markets. However, Derfus et al. (2008) also noticed that firms might act inefficiently in growing industries in which actions are carried out as an assurance to meet rising demand without

consideration of their costs. Hence, growing industries may create a situation in which firms do not have the time to investigate the least costly way to take an action. In such cases, firms may waste resources undertaking actions when they are actually unnecessary. (Derfus et al. 2008).

The phenomenon is even more complex than that. The market position in an industry partially determines the most valuable strategy from a firm's perspective. Chen et al. (2010a) investigated the importance of market position in creating motivation to take competitive actions. They compared competitive actions of high-performing firms and low-performing firms in new markets and established markets. They found out that competitive actions were motivated by different reasons in these two markets. In stable established markets, where advantages are only temporary, high-performing firms wanted to avoid aggressive moves. Because the norms of mutual forbearance emerged in these markets, high performing companies tried to maintain their current market position and status quo with conservative moves to strengthen their strategic position. Further, contrary to prior research, they found that low-performing companies, on the other hand, attempted to disrupt the status quo and increase their own market share initiating more market moves despite the risks from challenging rivals. Moreover, in new markets the setting was different: high-performers were motivated to make frequent market moves to explore new customer segments that have not yet developed. In contrast, low-performers avoided market moves in new markets because they did not see immediate ways to use them. (Chen et al. 2010a)

Finally, a high level of industry concentration most likely reduce industry competition. Industry concentration is commonly measured by the percentage of the market share held by the largest firms in an industry. The economic theory suggests that a small number of firms in an industry will tactically limit the mutual competition for higher profits. In such environments, actions are less frequent because firms want to maintain the status quo - especially market leaders. (Derfus et al., 2008). In theory, if companies in concentrated industries do not show any signs of competitive actions, competitors are not forced to take actions for a defense (Young et al., 1996). However, if one decides to act, it will attract more attention among customers and competitors because of the limited competition. It is

easier for firms to closely monitor other's actions in concentrated industries and also respond to actions fast and efficiently. For this reason, actions in concentrated industries lead to lower performance even though they would attract more customers and increase performance for a short period. (Derfus et al., 2008). Hence, the influences of concentrated industries and established industries to industry competition are similar.

To summarize, the performed research on competitive dynamics has been particularly interested in the influence of industry competition to competitive aggressiveness. The results suggest that competitive aggressiveness might not be required at all times but the need depends on industry growth, concentration and market position in the industry.

2.3.2 The influence of organizational characteristics

As argued in the previous chapter, competitive landscape influences the profitability of a firm's competitive aggressiveness. This subchapter looks into organizational characteristics that also influence the profitability of competitive aggressiveness according to prior research.

"Perhaps the single most important characteristic determining an organization's competitiveness is size, because various sources of competitive advantage are known to co-vary with size." (Barnett & McKendrick, 2004: 353). In prior research, organizational size has been defined in different ways but the arguments have been consistent: the results suggest that larger firms are better at influencing their environment and winning their competitors. It has been argued that larger firms can carry out more effective competitive actions and are less affected by competition than smaller firms. (Chen et al., 2010; Smith et al., 2001). Barnett and McKendrick (2004) noticed that larger firms are most likely to develop new products and variants and they had a better chance to be successful in a market competition, because of better resources to invest on several actions. Additionally, the actions of larger firms are likely to receive more customer attention, which leads to greater demand. In an evolutionary theory, several actions contribute to greater learning: having experience of several actions helps conduct more successful actions in the future and avoid

the unprofitable ones. This is a way of defending and maintaining the leading position in the market. (Barnett & McKendrick, 2004). Indeed, Barnett and McKendrick (2004) found that larger firms are connected with advantages such as experience, brand name recognition, and better market power.

Further, scholars have suggested that experience and learning are not only correlated with firm size but also with firm age. When firms get older, they repeat strategies and actions that have proven to be successful in the past (Smith et al., 2001). It can be argued that older firms often have the knowledge to target their actions to a more profitable direction because of their experience of earlier actions (Derfus et al., 2008). Covin and Covin (1990) argued that relatively young firms have had less time to figure out the key success criteria in an industry, and their aggressive efforts may be aimed at unprofitable direction. However, it does not mean that smaller and younger firms should not be competitive. Small firms tend to be more active in initiating competitive moves while large firms more responsive when attacked. (Lumpkin & Dess, 1996). New businesses are much more likely to fail than established ones and many scholars have argued that aggressive and intense competition are critical factors to the survival and success of new entrants.

Finally, the research on competitive dynamics highlights the importance of organizational resources and capabilities, which can both significantly contribute to a firm's ability to compete aggressively (Ferrier, 2001; Miller & Chen, 1994). Moreover, having resources that are valuable, rare, and non-substitutable, firms can implement fresh competitive strategies that can not be easily duplicated by competitors (Eisenhardt & Martin, 2000). However, Miller and Chen (1994) point out that good past performance may also breed complacent behavior increasing a firm's motivation to sustain their competitive strategy and thus, inhibits them from searching new competitive actions and strategic change. Poor past performance, again, provides motivation for the reevaluation of current strategy and creates motivation to try new approaches in order to compete. (Miller & Chen, 1995).

To summarize, scholars have spent less time exploring the effects of organizational factors and rather focused on the effects of external factors on competitive aggressiveness. Some important suggestions, however, have been made related to firm size and resources. The

impact of firm age on competitive actions and firm performance has yielded little results. One possible explanation for the limited support might be a high correlation with the firm size and market diversity: older firms are generally larger and compete in more diverse markets. Yet, further investigation is needed.

3. RESEARCH MODEL AND HYPOTHESES

This research investigates one of the five dimensions of entrepreneurial orientation (EO)—competitive aggressiveness and its relationship to firm performance. Several industry-related and organizational moderators will be examined based on the research hypotheses. The first subchapter presents the research model of this study and the following subchapter sets the hypotheses draw from the evolutionary theory (Nelson & Winter, 1982) and the research on competitive dynamics.

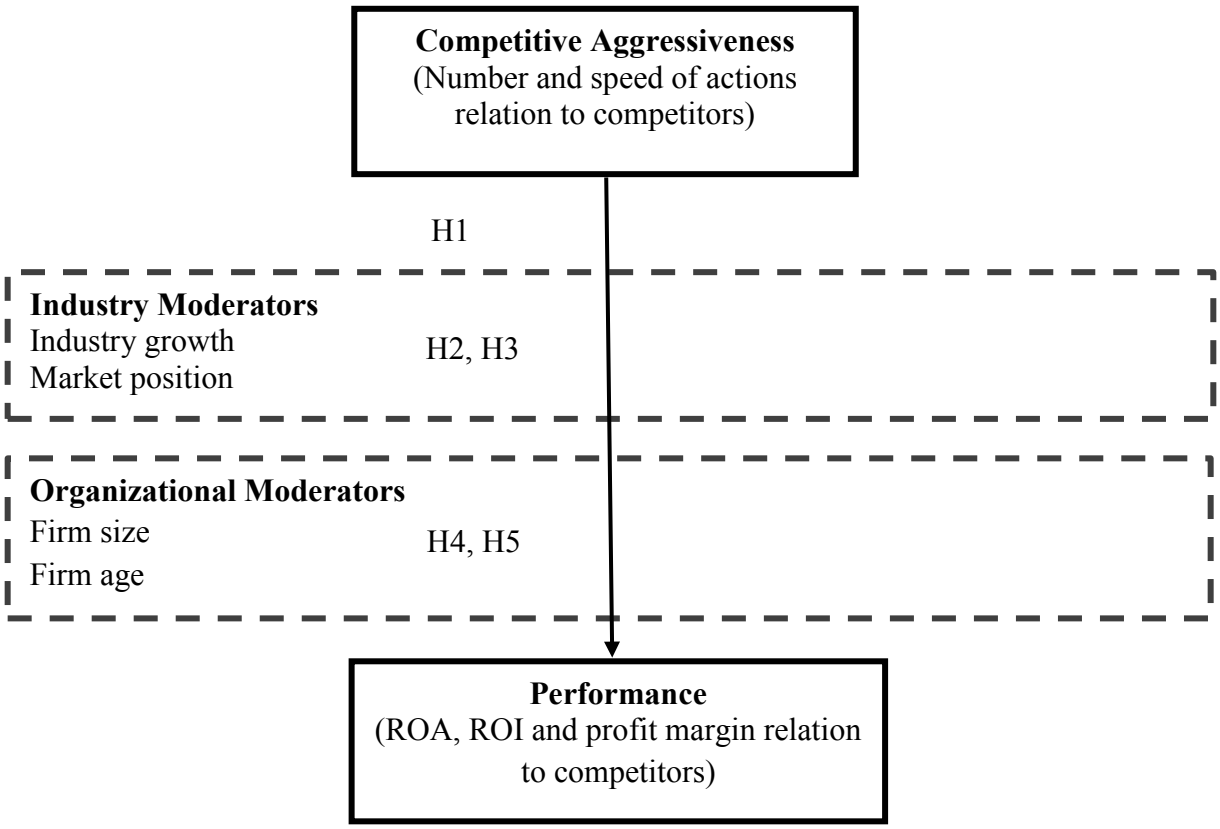
3.1 Research model of the study

Evolutionary theory sees business through a learning process where the objective of search is to discover new opportunities to act (Nelson & Winter, 1982: 59-65). In other words, firms will learn from their experience of several actions regarding the relationship between action and performance (Derfus et al., 2008). According to this view, high performance can be achieved by speed and innovation that keep firms ahead of their rivals (Nelson & Winter, 1982: 59-65). The research model introduced in Figure 2 proposes that companies who initiate more competitive actions faster (more aggressively) than their rivals will enjoy higher performance.

Further, in evolutionary theory, firms are viewed as having various capabilities, processes and decision-making procedures that determine how they act with given conditions (Nelson & Winter, 1982: 96-113). Thus, the research model suggests that given industry-related and organizational conditions moderate the relationship between firm action aggressiveness and its performance affecting the capabilities to learn from search and action. More precisely, it

proposes how conditions such as firm age, size, industry growth and market position moderate the relationship between competitive aggressiveness and firm performance.

Figure 2. Research model of the study



In short, this study suggests that there are four moderators that explain the strength of the relationship between competitive aggressiveness and performance that have been drawn from the prior research. Two of the moderators, firm age and size, can be categorized as organizational moderators and the other two, industry growth and market position, industry-related moderators. Contrary to previous research, the proposed research model combines the most important industry-related factors and organizational factors into the same model to explain the strength of the relationship between competitive aggressiveness and firm performance.

3.2 The influence of competitive aggressiveness on performance

To summarize the key findings introduced in the literature review section, the research on competitive dynamics has shown that competitively aggressive firms are more often able to improve their competitive positions, market share, and (Ferrier et al., 1999) increase their performance (Young et al., 1996). This is based on the argument that active firms with greater aspiration levels achieve better performance because they are more capable of implementing profitable competitive actions through search and learning. In the fast competition, firms suffers from market share erosion if they compete less aggressive than their direct competitors (Ferrier et al., 1999).

The most frequently initiated competitive actions include market expansions, new product introductions, new service offerings, new marketing campaigns and price changes (Smith et al., 2001). The previous research suggests that a subtle competitive action is much more likely to avoid retaliation and the escalating competition than a bold action. It has been recognized that the combination of high visibility and low level of difficulty to outperform the act will evoke responses from rivals and generate temporary advantages (Miller & Chen, 1994). Especially, bold competitive actions in pricing and marketing generates temporary advantages and thus, less profitable. Whereas new product introductions, new service offerings and market expansions can be seen generating more sustainable advantages and connected to higher performance (Smith et al., 2001). Hence, this research focuses on competitive moves that create sustainable advantages: new product launches, new service offering and market expansions (adapted from Chen et al. 2010b). Companies' aggressive approach, when conducting the above mentioned actions, seem to be extremely important in the fast changing markets.

Given the suggestions of previous research, the first hypothesis is:
Hypothesis 1: Competitive aggressiveness relates positively to firm performance.

3.3 Industry-related moderators

Industry growth

The level of industry growth varies along with the industry life cycle. An industry do not grow linearly through the whole life cycle but slows down and eventually declines at the final stage of the industry life cycle (Karniouchina et al., 2013). Studies shows that the level of industry growth affects the industry competition (Chen et al., 2010a; Nadkarni et al., 2016)

From the evolutionary theory perspective, stable established industries can be conceptualized as landscapes that are organized but yet crowded with only temporary advantages. In these landscapes, the industry is no longer growing and only few new peaks rise and old peaks sink slowly. Competitors occupy well-known positions in the industry creating accurate maps of the landscape. In the landscape, some firms are market leaders with bigger market shares while others market challengers with smaller market shares. Established industries are likely to have relatively stable competitive structures when norms of mutual forbearance regulate competitive behavior. (Chen et al., 2010a). Competitive actions are easily noticed and quickly responded to by the competitors. Therefore, the stable demand and norms of mutual forbearance make it more profitable for firms to search for new ways of creating demand by new product and service introductions or market expansions. New markets are especially attractive for firms because the demand is growing and firms are able to be successful without intense competitive threat (Derfus et al., 2008). Growing industries offer more new opportunities to act and win the first mover advantages. In such environment, the speed of execution is emphasized in the competition

In summary, firms in stable industries only enjoy temporary advantages and therefore search for new possibilities to create advantages in growing industries. Based on these arguments, the second hypothesis is:

Hypothesis 2: Industry growth positively moderates the relationship between competitive aggressiveness and firm performance.

Market position

In addition to industry growth, a firm's market position also influences its competitive behavior and performance. Market position refers to a firm providing a portion of the industry total production. It is often measured by the percentage of the market share held by a firm from the total industry shares. A firm's market position influences the firm's relationship with its competitors within that industry. (Chen et al., 2010a; Nadkarni et al., 2016)

It has been argued that competitors are more likely to notice the market leader's actions in an industry and learn to respond to the actions in order to defend their own positions in the market. (Derfus et al., 2008). For this reason, competitive actions carried by a market leader only bring temporary advantages. Thus, market leaders seek to maintain their current market position and status quo by avoiding competitive moves that are easy to outperform by the rivals. Market leaders rather initiate more conservative and subtle moves to strengthen their strategic position. Because bigger market share correlates with better past performance, market leaders most likely have better resources to compete aggressively. On the contrary, the market challengers initiate more disruptive market moves in stable industries due to their current unprofitable position in the market. There is no motivation to maintain the status quo and resources may be smaller compared to market leaders. That is why direct moves such as pricing and marketing activities are more alluring for market challengers (Chen et al. 2010a).

Considering these arguments, the third hypothesis is:
Hypothesis 3: Market position positively moderates the relationship of competitive aggressiveness and firm performance.

3.4 Organizational moderators

Firm size

Firm size should be taken into account when investigating the factors explaining the profitability of a firm's competitive aggressiveness. Research on competitive dynamics suggests that larger companies are less affected by competition than smaller firms because they have better resources to carry out several actions. Moreover, the actions of larger firms are more likely to draw attention of customers and are more visible to their competitors leading to several responses. Thus, larger firms are more likely to invest in subtle competitive actions in which case the importance of resources is emphasized. Especially, actions such as new product introductions, new service offerings and market expansions, take more time to initiate and require more resources from a company. (Barnett & McKendrick, 2004). Given these arguments, the fourth hypothesis is:

Hypothesis 4: Firm size positively moderates the relationship of competitive aggressiveness and firm performance.

Firm age

It can be argued that the age of a firm influences positively on the profitability of action aggressiveness. According to the evolutionary theory, actions contribute greater learning through experience (Nelson & Winter, 1982: 59-65). Older firms often have more experience of industry competition and experience from several profitable and unprofitable competitive moves. Thus, they are likely to have better knowledge on how to target their actions to more profitable directions compared to younger firms. (Derfus et al., 2008). Prior research argues that relatively young firms have had less time to figure out the key success criteria in an industry, and their aggressive efforts may often be aimed at an unprofitable direction (Covin & Covin, 1990).

Because older firms have more experience of action routines, firm age should positively effect on the performance of competitive aggressiveness. Hence, the final hypothesis is:

Hypothesis 5: Firm age positively moderates the relationship of competitive aggressiveness and firm performance.

4. DATA AND METHODS

The study is implemented as an empirical quantitative study examining the profitability of firm's competitive aggressiveness. Most importantly, several industry-related and organizational factors are explored to understand when it is more profitable for firms to compete aggressively. The empirical focus is on Finnish markets. Finland is an EU member since 1995 and grown from a quiet agricultural based economy in to a global seller of technology and design. Finland is a small country of 5.5 inhabitants but highly integrated to the global markets. The data from 821 Finnish companies in several industries offers an excellent data to test the hypotheses.

This chapter looks into the empirical data and methods used in order to answer the research question and test the hypotheses. The first subchapter examines the data collection method and develops scales to measure the main variables used in this study. The second subchapter introduces the data collection and the sample characteristics. The last subchapter discusses the methods of statistical analysis used in this research and critically examines the trustworthiness of the research design.

4.1 Measures

The research on competitive dynamics has explored the consequences of competitive actions across several different industries. An action is generally defined as an externally directed, specific, and observable move initiated by a firm to enhance its competitive position (Smith, et al. 1991; Young et al., 1996; Ferrier et al., 1999). The characteristics of actions have been examined with several distinct levels of analysis and measures. For instance, researchers have been particularly interested in action characteristics such as radicality, scope, magnitude and the order of competitive moves to understand better the

causes and consequences of different actions (e.g., Smith et al., 1991; Smith et al., 1992). These characteristics have mostly been studied by using the structured content analysis of news articles and headlines. Across all studies, thousands of news articles, headlines and abstracts have been systematically coded into individual competitive actions and responses. According to prior research, the most frequently launched competitive actions include market expansions, new product introductions, new service offerings, market campaigns, capacity related moves and pricing. (Smith et al., 2001).

The research stream of competitive aggressiveness is rather interested in the volume and speed of the total actions a firm takes compared to its direct rivals than focused on a type of individual action (Smith et al. 2001). Hence, action aggressiveness is a multidimensional construct and therefore it should be measured using multiple factors. A questionnaire is a suitable and the most often used data collection method to measure firms' action aggressiveness of several competitive actions (e.g., Chen et al., 2010b; Lumpkin & Dess, 2001).

Further, it is also important to recognize the multidimensional nature of firm performance (Lumpkin & Dess, 1996). Many times, competitive actions may lead to favorable outcomes on one performance indicator and unfavorable outcomes on a different performance dimension. Investments often require resource commitment that might decrease short-term profitability but enhance sales growth in the long run. That is why, it is important to consider a wider range of performance construct to help understand how an organization or a business unit is performing. Focusing on a too narrow range of performance construct may mislead theory building. (Lumpkin & Dess, 2001). Performance measurements such as ROI (return on investment), ROA (return on assets), profit margin and market share are the most highly used performance indicators among scholars.

Because of the multidimensional nature of action aggressiveness and firm performance, the scales are developed according to the prior research. Additionally, in order to carefully evaluate the effects of several industry-related and organizational moderators, the following moderators need to be measured: firm size and age, industry growth and market position. The scale development and measures are discussed in the following subchapters.

4.1.1 Scale development

In the baseline model of this study, there are two multidimensional constructs: action aggressiveness is the main independent variable and firm performance dependent variable. The scale of action aggressiveness is adapted from Chen et al. (2010b) and the scale of firm performance is developed similarly by using three widely accepted performance measures ROI, ROA and relative profit margin. Both of the constructs applied in this study are introduced in Table 1.

Table 1. The key constructs and items measured

Construct	**Indicators**
Action aggressiveness (Chen et al., 2010b) *My company initiates far more numbers/faster of actions than direct rivals concerning…*	Expanding to new markets (frequency) New product launches (frequency) New service offering (frequency) Expanding to new markets (speed) New product launches (speed) New service offering (speed)
Firm performance *My company's ROI/ROA/Relative profit margin is far higher than our direct rivals.*	ROI ROA Relative profit margin

The scale of action aggressiveness is assessed using a self-report measure, in which both the action volume and speed are measured with the three items. The seven-point Likert-scale where value 1 (far fewer or far slower than direct competitors) and value 7 (far more or far faster than direct competitors) is used to measure the defined three competitive actions. Finally, only one scale of action aggressiveness is developed using the mean values of each individual scale.

The literature of competitive dynamics questions if the highly used performance indicator, market share, hides the truth about the real profits and thus, leads managers

to an unprofitable direction (Lumpkin & Dess, 1996). That is why this study focuses on other common performance indicators. The scale of the dependent variable, firm performance, is developed using the mean values of three widely accepted indicators of financial performance (Chen et al. 2010b; Ferrier et al., 1999): return on investments (ROI), return on assets (ROA) and relative operating profit. These indicators of performance are measured with a seven-point Likert-scale asking how well a company performs comparing to its competitors. The scale ranges from (1) much better than the competitors' do to (7) much worse than the competitors'. Finally, only one scale of firm performance is developed using the mean values of each individual performance scale.

4.1.2 Moderators

In order to examine how different industry-related and organizational factors impact the profitability of action aggressiveness, several moderators need to be measured. The prior research on competitive dynamics has found that industry growth, market position, firm age and firm size affect the profitability of competitive actions and hence, most likely influence the profitability of competitive aggressiveness. The measures of the moderators are defined next.

The level of industry growth changes along with the industry life cycle. The four main stages in the industry life cycle are measured by using a 4-point multiple-choice question to receive the information about the level of industry growth. The multiple-choice question asks which of the following most describes the industry of your company: (1) new markets, (2) growing markets, (3) stable markets and (4) declining markets. The scale of industry growth ranges from (1) growing and developing industries to (4) declining and established industries.

Market position is also measured as a 4-point multiple choice-question asking the size of the firm's market share: (1) a smaller market share, (2) the third or second largest market share, (3) the largest market share and (4) the only seller in the industry. The scale of market position ranges from (1) market followers with smaller market shares to (4) monopoly position with 100% of the industry's market shares.

Finally, the firm size and age both are measured as scale variables. The scale of firm size is ranging from (1) under 10 employees to (8) over 250 employees and measured with an 8-point multiple-choice question in the survey. The scale of firm age ranges from the (1) 0-5 year-old companies to (5) over 50-year-old companies. The firm age is calculated separately for each respondent starting from the year of establishment of the respondent firm.

4.2 Data collection

The research data is collected by a StratMark 2012 survey. The objective of the Start Mark 2012 survey was to collect data from Finnish companies on a larger scale to investigate the current state of strategic marketing in Finland. The data generated by the survey has been used in several studies and publications. The online survey consists of 42 sets of questions in four different topic categories related to marketing and product development. It was sent to all Finnish companies in different industries that employ more than five people and targeted to firms' top management. Most of the questions were multiple-choice questions or seven-point Likert-scale questions where respondents were asked to fill the questionnaire from the perspective of their strategic business units or, in case of small firms, the entire firm. In order to lower the barrier to respond, the survey questions were translated from the original English language to Finnish. Effort was put to the translations trying best not to distort the original meaning. The response rate was approximately 10% and received 954 responses from 21 different industries. After cleaning the responses that were incomplete or easily recognized as false, the final acceptable sample consisted of 821 responses.

The StratMark 2012 survey did not include questions regarding the respondent firms' age, which is one of the main moderators in this study. That is why, firm age data had to be collected afterwards based on the respondents' Business IDs. The Business IDs were obtained by matching the respondent's name and email address with the appropriate company with the help of various Internet sources (e.g., Finnish Business Information

System, company websites). Eventually, the year of establishment of each respondent firm was collected from the Finnish Business Information System. The firm age was then calculated starting from the year of the establishment.

4.3 Sample characteristics

The sample consists of 821 companies in 21 different industries and represents a wide scale of companies operating in Finland. Table 2 summarizes the key characteristics of the sample.

Table 2. Characteristics of the sample

		N	%
Market growth	New markets	76	9.3
	Growing markets	317	38.6
	Stable established markets	345	42.0
	Declining markets	83	10.1
Market position	Market follower	268	32.6
	Market challenger	318	38.7
	Market leader	215	26.2
	Monopoly position	20	2.4
Firm size	Micro (< 10 employees)	164	20.0
	Small (11-50 employees)	339	41.3
	Medium (51-250 employees)	204	24.9
	Large (>= 250 employees)	113	13.8
Firm Age (years)	0-5	127	15.5
	6-15	255	31.1
	16-25	227	27.5
	26-51	139	16.9
	>= 51	73	8.9

Total N 821

Finland is generally seen as a small and concentrated economy due to the small population of 5.5 million inhabitants and a geographically distant location. It is traditionally focused on established engineering industries, such as the forest and metal industries, and the ICT industry. However, in recent years, the markets of the Finnish economy have shifted towards more value-added products and services (OECD Economic Surveys: Finland, 2016). This can also be seen in the sample where the most important Finnish industries are represented: manufacturing (29.5%), information & communication (15.1%), other service (13.2%) and wholesale and retail (11.2%). Even if the majority of the firms in the sample operate in established industries (42%), there is also a good portion of firms in growing markets (38.6%). The distribution of different industries provides excellent data for this multi-industry study.

Contrary to prior research, the objective of this study is to examine not only market leaders but also market challengers and followers. The sample contains firms in all the different market positions measured: 26.2% of the sample are market leaders, 38.7% of the sample are market challengers, and 32.6% of the firms in the sample are in the market follower position. The sample also includes companies of different ages and sizes. Approximately 50% of the sample represents micro- and small-sized companies and the other half, medium-sized and large-sized companies. Additionally, 46.6% of the sample represents companies under the age of fifteen. Only 8.9% of the sample are over 51-years-old, which can be considered normal considering the young age of Finland. Overall, the sample represent the Finnish markets well and gives an excellent sample to test the hypotheses.

4.4 Statistical analysis methods

This chapter discusses the methods of statistical analysis used in this research. One correlation and two multivariate techniques are applied in the data analysis. First, a confirmatory factor analysis (CFA) is conducted to evaluate the appropriateness of the scales of action aggressiveness and performance measurements. Second, Pearson's correlation analysis is conducted to determine the strength and direction of a linear relationship between the variables. Finally, a moderated multiple regression analysis is used to test the hypotheses and evaluate the relationship between action aggressiveness and

firm performance. Next, the methods of confirmatory factor analysis and moderated multiple regression analysis are discussed.

4.4.1 Confirmatory factor analysis (CFA)

Factor analysis is commonly used in marketing research to explain the structure of data by explaining the correlations between variables. Factor analysis summarizes data into a few dimensions by gathering a large number of variables into a smaller set of new latent variables. The high correlations between variables most likely means that they measure the same characteristics. In other words, factor analysis combines similar items into one construct. (Hair et al., 2010:693).

There are two kinds of factor analysis. Confirmatory factor analysis (CFA) investigates the previously defined and hypothesized model structure under each variable. The purpose of CFA is to confirm the reliability of proposed models and constructs based on the previous theory. While in exploratory factor analysis (EFA), the underlying patterns are unknown and the purpose is to discover them from the data itself. Factors can be named only after the factor analysis has been done. (Hair et al., 2010:693).

The first approach mentioned CFA is the right method for the factor analysis since the variables belonging to each factor has been determined in the prior research. The construct fit and suitability of the scales in the baseline model are tested with SPSS Amos 23.0 software before using it in multiple regressions analysis. The results of the CFA are presented in Chapter 5.

4.4.2 Moderated multiple regression (MMR)

Multiple regression analysis investigates the relationship between one scale dependent variable and one or more scale independent variables. In the multiple regression analysis, there are two important objectives; one objective is to find independent variables that are most likely to explain the variation in the dependent variable. In order to find the independent variables with most the predictive power, a researcher can test multiple alternative models. Another objective is to examine the relationship between independent

and dependent variables. After confirming the mutual relationship between the variables, the regression analysis examines whether the strength of the relationship is negative or positive. This is how a researcher is able to predict how much a change in the independent variable contributes to the change in the dependent variable. (Hair et al., 2010:169-170).

Multiple regression analysis is also applied to investigate how the relationship between independent and dependent variable changes if a third variable, a moderator, is included in the model. In other words, a moderated multiple regression analysis is used to determine whether the relationship between two variables depends on (is moderated by) the value of a third variable. An analytical method to determine if a moderator effect exists is to use an interaction term in a multiple regression analysis. A researcher creates the interaction term by multiplying the independent variable and moderator variables together. (Distantik, D. & Sivan, L., 2014). Then the interaction term is added to the multiple regression model to predict the dependent variable the following way:

$$Y = (B0) + (B1)\ X1 + (B2)\ X2 + (B3)\ X1*X2$$

The effect between X1 and X2 on Y corresponds to the B3 slope. If the interaction term B3 is statistically significant it means that, the effect of X2 on Y depends on the level of X1. If B3 is positive (the interaction term is positive), it indicates that the more positive X2 is the more positive becomes the effect of X1 on Y. Conversely, if the interaction term B3 is negative, then the more positive X2 is the more negative the effect of X1 on Y becomes. (Distantik & Sivan, 2014).

First, this study examines how firms' action aggressiveness (independent variable) is related to firm performance (dependent variable). Secondly, this study examines does the relationship between action aggressiveness and performance change depending the industry-related and organizational moderators: firm age, firm size, industry growth and market position. Moderation effects are tested in the multiple regression analysis by using the interaction terms as described. The results of the moderated multiple regression analyses are introduced in the next chapter.

5. RESULTS

This chapter presents the results from the confirmatory factor analysis, Pearson's correlation test and the moderated multiple regression analysis that is conducted to test Hypotheses 1-5.

5.1 Confirmatory factor analysis (CFA)

Before testing the hypothesis, the measurement model's validity and reliability need to be addressed (Hair et al., 2010:693). The main objective of a confirmatory factor analysis (CFA) is to evaluate whether a construct fits the proposed model. Hence, CFA is conducted using the Amos 23.0 software to examine whether the hypothesized theoretical specification matches with the empirical data. The two key constructs, action aggressiveness and firm performance, are both included in one multifactorial confirmatory factor analysis model. The moderators are measured with a single item and hence they are not included in the factor analysis. Table 3 summarizes the results of CFA.

The important objective of CFA is to evaluate the construct validity of the proposed theoretical specification. The model's validity is evaluated with a procedure suggested by Fornell & Lacker (1981) by assessing reliability, average variance extracted and discriminant validity of each construct. Construct validity are assessed to prove that the set of items measured actually reflects the latent variables (constructs). One important component of construct validity is convergent validity that is measured with factor loadings. All items in the CFA shows loadings above the ideal threshold of 0.7 meaning that the items are appropriate for measuring the latent variable.

Table 3. Results of confirmatory factor analysis (CFA)

Construct[a]	**Loadings***	**AVE**[b]	**C.R**[b]	**Item**
Action aggressiveness		0.58	.93	
	.71			Expanding to new markets (frequency)
	.75			New product launches (frequency)
	.82			New service offerings (frequency)
	.72			Expanding to new markets (speed)
	.72			New product launches (speed)
	.84			New service offerings (speed)
Performance		.86	.99	
	.82			Relative profit margin
	.99			ROI
	.96			ROA

*All the loadings significant at $p < 0.01$

[a] Model fit indices: $\chi^2 = 397.031$ df = 23, $\chi^2/df = 17.262$ $p < 0.001$, RMSEA = 0.12; CFI = 0.94; TLI = 0.91

[b] AVE = Average variance extracted, CR = Composite reliability.

The important objective of CFA is to evaluate the construct validity of the proposed theoretical specification. The model's validity is evaluated with a procedure suggested by Fornell & Lacker (1981) by assessing reliability, average variance extracted and discriminant validity of each construct. Construct validity are assessed to prove that the set of items measured actually reflects the latent variables (constructs). One important component of construct validity is convergent validity that is measured with factor loadings. All items in the CFA shows loadings above the ideal threshold of 0.7 meaning that the items are appropriate for measuring the latent variable.

The composite reliabilities (CR) reveal a good internal consistency with values above 0.80 and hence exceed the benchmark of 0.60 recommended by Bagozzi & Yi (1988). The average variance extracted (AVE) for constructs are greater than the minimum threshold of 0.50. The results indicate that more than 50% of variance is captured by the construct and hence, less of the variance can be indicated to be due to measurement error (Fornell &

Lacker, 1981). Finally, discriminant validity of the model is also assessed according to Fornell & Lacker (1981). The AVEs of the constructs are compared to the squared correlation between the two constructs: action aggressiveness and firm performance. The squared correlation is 0.135 and thus, the AVEs (0.58 and 0.86) exceed the squared correlation indicating a good discriminant validity and the discriminant validity is proved.

Further, several fit measures are tested to evaluate how well the empirical data fits with the research model. Overall, the fit indices present an acceptable fit for the model. Chi-square value is a traditional measure for evaluating overall model fit (Bagozzi & Yi, 1988). Even though Chi-square test suggest rejecting the model ($p < 0.001$), the large sample size ($N = 821$) may affect the results. The χ^2-test is very sensitive to sample size, which has aroused discussion and doubts concerning the reliability of the Chi-square test when testing larger sample sizes. A larger sample size increases the probability that χ^2-test rejects the model whether the model is right or false (Bagozzi & Yi, 1988). That is why several other fit measures are also evaluated. Tucker-Lewis index (TLI) = 0.91 presents acceptable fit for the model (thresholds > 0.90). The comparative fit index (CFI) = 0.94 also indicates acceptable fit (thresholds > 0.90). The root mean square error of approximation (RMSEA) = 0.12 indicates a poor fit and is above the threshold of 0.05 but considered adequate in the light of acceptable values of TLI and CFI.

After the theoretical specification is confirmed to be appropriate for the current research, the new constructs, action aggressiveness and firm performance, are developed by using the average values of the individual items. The constructs are used in the Pearson's correlation analysis and in the moderated multiple regression analysis to test Hypotheses 1-5.

5.2 Descriptive statistics and correlations

Pearson's correlation test is conducted to determine the strength and direction of linear relationships between the variables. More specifically, the correlation coefficient summarizes the strength of association between two independent variables and provides evidence for further evaluations. It varies between - 1.0 and + 1.0: values close to - 1.0 or

+ 1.0 indicate a strong association (Hair et al., 2010:334). Table 4 presents the correlation matrix, means and standard deviations for all constructs and variables used in this study.

Overall, the average firm performance is 4.41 (out of 7) representing a relatively good level of performance and action aggressiveness 4.54 (out of 7) indicating that firms compete slightly more aggressively than their direct rivals. On average, the firms in the sample are relatively young (2.7 out of 5) and medium-sized (4.54 out of 8). The average market position can be categorized as the position of a market challenger (2.01 out of 4). On average, the firms in the sample operate in industries where the industry growth is either slowing down or is stable (2.53 out of 4).

The results show important correlations between firm performance and other variables. First, firms' action aggressiveness correlates significantly with firm performance ($r = 0.135$, $p < 0.01$) pointing out that 13.5% of firm performance can be explained by the firm's action aggressive behavior. In addition, the results propose that a better market position explains a major portion of a firm's higher performance ($r = 0.202$, $p < 0.01$) and older firms are slightly more profitable than younger firms ($r = 0.058$, $p < 0.05$). Accordingly, under most circumstances, firms that have achieved a high share of the markets are considerably more profitable than their smaller-share rivals.

Table 4. Descriptive statistics and correlations

Variables	**Mean**	**S.D.**	**1**	**2**	**3**	**4**	**5**
1.Performance	4.41	1.29					
2.Aggressiveness	4.42	1.04	.135**				
3.Firm age	2.71	1.17	.058*	-.078**			
4.Firm size	4.18	1.97	.024	.081	.142**		
5.Industry growth	2.53	0.80	.014	-.162**	.202**	.141**	
6.Market position	2.01	0.83	.202**	.161**	.021	.23**	.022

N = 821, *p < 0.05, **p < 0.01 (2-taled)

The correlations also give relevant information relating to firms' competitively aggressive behavior. Firm age significantly correlates with action aggressiveness ($r = -0.078$, $p < 0.01$). Results indicate that younger firms are slightly more aggressive even though older firms are a bit more profitable. Additionally, market growth and better market position significantly correlate with action aggressiveness. The results suggest that firms in challenger positions compete slightly more aggressively ($r = 0.161$, $p < 0.01$) and aggressive behavior is slightly more common in the growing markets ($r = -0.162$, $p < 0.01$).

Overall, the Pearson's correlation test provides important evidence for further evaluations. The results highlight that variables correlate with action aggressiveness and performance in opposite directions. Conditions that correlate positively with firm performance correlate negatively with action aggressiveness and vice versa. The only exception is firm size that correlates positively with firm performance and action aggressiveness.

5.3 Moderated multiple regression analysis

A moderated multiple regression analysis is conducted to test hypothesis H1-H5 and determine whether the independent variable action aggressiveness explains a significant variation in the dependent variable – firm performance under various circumstances. Because the problem of multicollinearity is highly common in moderated multiple regression analysis, it is discussed before testing the hypotheses.

5.3.1 Multicollinearity in multiple regression

Multicollinearity occurs when two or more independent variables are highly correlated together and not only with the dependent variable (Distantik & Sivan, 2014). The correlations between variables can influence the regression model in a way that increased collinearity can decrease the unique variance explained by the independent variable. It influences on the predictive power of the model (Hair et al., 2010:165). In a moderated multiple regression analysis, the interaction term (x1x2) often correlates with the independent variables (x1 or x2 or both of them) and very likely causes multicollinearity

(Distantik & Sivan, 2014). To detect the collinearity, the variance inflation factor (VIF) is evaluated. The threshold value for the VIF is often set to 10, and exceeding values indicate higher correlation between independent variables. When the independent variable is uncorrelated with other variables, the VIF gets the value of one (Hair et al., 2010:204).

To avoid multicollinearity many scholars mean-centralize their scales. However, the study of Echambadi and Hess (2007) proves that the logic behind mean-centering is incorrect. The mean-centering often reduces covariance between the linear independent variable and the interaction terms, but it does not add any new information to the estimation (Echambadi & Hess, 2007). Echambadi and Hess (2007) point out that the mean-centering does not actually solve the problem of multicollinearity but instead hides the problem by showing acceptable VIF-values. However, they also clarify that the mean-centering does not change the results and that it only distorts the VIF-values. That is why there is no need to re-evaluate the previous research with mean-centralized values.

The moderated regression models in this study also show a small multicollinearity problem even though the Pearson's correlation analysis did not present any high correlations above 0.70 between the variables. Taking the discussion of the multicollinearity and the study of Echambadi & Hess (2007) into consideration, this study reports the real VIF-values even though the models are conducted with a mean-centralized scale of action aggressiveness. With the method of dummy-coding, the multicollinearity can be reduced among independent variables but not totally avoided. The moderator variables are dummy-coded with 0/1 coding. Generally, code 1 means 'unit belongs to category x' and 0 means 'unit does not belong to category x'. Dummy-codes are developed according to Hypotheses 2-5 to test the moderation effects. With dummy-coding, the VIF-values that range between 1 to 19.707 show some collinearity between the interaction terms and must be taken into consideration.

5.3.2 Testing the hypotheses

Several models are ran to examine the relationship between action aggressiveness and performance under different industry-related and organizational conditions. The standardized coefficients (β) show the strength and direction of the relationship between the independent variables and the dependent variable (Hair et al. 2010:197). Table 5 summarizes the results of the moderated multiple regression analyses. The moderator variables are dummy coded with 0/1 coding (1 = belongs to the category). Categories used in the models are marked in parenthesis.

Hypotheses 1-5 are first tested in separate models and only later, brought into the same Model 6 in order to test the combined effect of all moderators on action aggressiveness and performance. The interpretation of the results is based on the final Model 6. The regression Model 6 is statistically significant ($p < 0.01$) with R^2 value of 0.070, hence the model explains approximately 7 percent of the variance in firm performance.

Hypothesis 1 proposed that action aggressiveness relates positively to firm performance. In Model 6 the coefficients for action aggressiveness is positive ($\beta = 0.112$) and marginally significant ($p < 0.10$). In Model 1 and Models 3-4 the relationships is also positive and statistically significant ($p < 0.01$), which supports H1. Because one of the interaction terms, firm size, is also statistically significant in Model 2 and Model 6, it can be argued that the main relationship between action aggressiveness and firm performance is context dependent. Hence, H1 is only partially supported.

Hypothesis 2 suggests that firm size positively moderates with the relationship between action aggressiveness and performance. As mentioned, the results support H2. The coefficients for the interaction term firm size (medium-large) x action aggressiveness is positive ($\beta = 0.121$) and statistically significant ($p < 0.01$). The result indicates that the larger the firm the more positive becomes the effect of action aggressiveness on performance.

Hypothesis 3 suggests that firm age positively moderates the relationship between action aggressiveness and performance. Unlike hypothesized, firm age does not moderate

significantly and the values range from negative to positive very close to zero in Model 6 (β = -0.013, p > 0.10) and in Model 3 (β = 0.007, p < 0.10). Thus, H3 is not supported.

Table 5. Results of moderated multiple regression analysis.

	Performance			
	Stand. B	VIF	R^2	R^2 Change
Model 1			.018	.018
Action aggressiveness	.135**	1.000		
Model 2			.024	.009
Action aggressiveness	.056	1.648		
Firm size (medium-large)	.017	20.345		
Firm size (medium-size) x aggress.	.125**	21.212		
Model 3			.020	.000
Action aggressiveness	.138**	1.115		
Firm age (> 15y)	.072*	17.242		
Firm age (> 15y) x aggress.	.007^{+}	17.146		
Model 4			.028	.023
Action aggressiveness	.163**	1.628		
Industry growth (stable markets)	.063^{+}	20.990		
Industry growth (stable markets) x aggress.	-.040	20.990		
Model 5			.058	.061
Action aggressiveness	.117**	1.436		
Market position (market leader)	.207**	17.689		
Market position (market leader) x aggress.	.003	18.592		
Model 6			.070	.080
Action aggressiveness	.112^{+}	2.525		
Firm size (medium-large)	-.026	21.556		
Firm size (medium-size) x aggress.	.121**	22.523		
Firm age (> 15y)	.068	17.610		
Firm age (> 15y) x aggress.	-.013	17.546		
Market position (market leader)	.211**	20.727		
Market position (market leader) x aggress.	-.019	21.931		
Industry growth (stable markets)	.039	20.884		
Industry growth (stable markets) x aggress.	-.060	21.264		

N = 821, $^{+}$ p < 0.1, *p < 0.05, **p < 0.01

Hypothesis 4 argues that industry growth positively moderates the relationship between action aggressiveness and performance. Like hypothesized, the results indicate that market growth would positively moderate the relationship of action aggressiveness and performance showing a negative moderation effect of the interaction term (stable markets)

in Model 4 (β = -0.040, p > 0.10) and in Model 6 (β = -0.019, p > 0.10). However, in the both models the moderation effect is not significant and thus, H4 is not supported.

Finally, Hypothesis 5 suggests that market position positively moderates the relationship between action aggressiveness and performance. The coefficients of the interaction term varies very close to zero in Model 5 (β = 0.003, p > 0.10) and is negative in Model 6 (β = -0.019, p > 0.10). However, the moderation effects are not significant and hence, H5 is not supported. The results support the indications from the correlation test showing that a better market position correlates positively with firm performance in Models 5 and 6 (β = 0.206, β = 0.211, p < 0.01).

6. DISCUSSION

This study sheds light on the research on competitive dynamics in relatively unexplored context – Finnish markets by investigating firms' competitive aggressiveness and firm performance in a variety of industries. Both industry-related and organizational factors are investigated within broader industry variations trying to understand under which conditions it is more profitable for firms to compete aggressively.

In the line with the prior research, the main relationship in the baseline model is significant suggesting that competitive aggressive behavior increases firm performance. Because, the results shows also a significant positive moderation effect of firm size, the main relationship can be considered to be context dependent and thus, is only partially supported. The results indicate that under the most circumstances the competitive aggressiveness leads to better performance. However, some industry-related and organizational conditions may strengthen or weaken the profitability of aggressive approach.

Comparing the results to the previous studies (e.g. Chen et al., 2010b), the industry-related factors seem to moderate differently in the Finnish markets than in the diverse and large

U.S. markets. The previous empirical studies highlight the significance of industry-related factors explaining the higher profitability of competitive actions (Derfus et al., 2008; Ferrier et al., 2001). However, this study did not find a significant evidence of industry-related factors influencing the profitability of the competitive aggressiveness. Industry growth seems to have positive influence on the relationship (even though not significant) but market position does not show any moderation effect ranging from positive to negative close to zero.

The explanation behind the contradictory results relating to industry-related factors may be found in the characteristics of Finnish economy, which are important to take into account in the interpretation of the results. The Finnish markets are smaller and several Finnish industries are highly concentrated compared to the U.S. markets where most of the existing studies on competitive dynamics have been conducted. Several important Finnish industries are dominated by a small number of sellers (OECD Economic Surveys: Finland, 2016). As Derfus et al. (2008:75) speculated. "In the case of high market concentration firms closely monitor each other's actions, they are very familiar with each other's capabilities and developments, and are so highly interdependent that they create an environment in which "surprise" actions are rare, and rivals are more likely to counter actions quickly and efficiently, wiping out excessive gains." Indeed, it can be argued that in the small and concentrated Finnish markets, it is more difficult for firms to surprise their competitors and their actions are quickly responded to. The phenomenon is emphasized in the stable markets where the mutual awareness is even higher (Chen et al. 2010b). This might explain why the results indicate that action aggressiveness is slightly more profitable in growing markets than in stable markets. In the growing markets, the mutual awareness is lower because the markets are not yet established and the industry demand is still growing.

Similarly, the competitive benefits from market position may not occur as strongly in highly concentrated markets. The literature suggest that the actions of market leaders are more visible and thus, competitors respond faster eroding the earned advantages. However, in concentrated markets, the differences between market leaders and challengers may be

so small that the moderation effect is not significant. The actions of challengers are as visible as market leaders when there are only a few companies in an industry.

Further, this study shows a significant moderating effect regarding firm size highlighting the importance of a firm's capabilities to initiate profitable competitive moves. The firm size positively influences on the profitability of competitive aggressiveness. These results support the approach of the evolutionary theory and the importance of firms' competence achieved by search and learning. Larger firms have better capabilities to invest on several actions and several actions in turn contribute greater learning (Derfus et al., 2008). Development of new product and service offerings often demand more resources that larger firms are more likely to be able to offer. The results show that firm size also correlates significantly with the number of actions. Barnett and McKendricks (2004) similarly found that large firms are the most likely to develop new products and variants and they had a better chance of being successful in the market competition, because they have enough resources to invest in several actions. Indeed, the results support the suggestion that larger firms have better capabilities to launch new products and services and expand to new markets than their smaller rivals and thus, a better chance to enjoy the first mover advantages. In addition, larger firms with the higher number of employees are more likely to have diverse expertise to direct the competitive moves into the right direction.

This study also suggest that experience alone does not explain the profitability of competitive aggressiveness when the gained industry experience might be a wrong kind in the fast-changing markets. Firm age does not show significant moderation effects. Thus, the experience might not always help firms in directing competitive actions in the right direction. The industry experience gained by years does not affect the profitability of competitive aggressiveness like the firm size does. Smith et al. (1991) ended up in a similar conclusion: education and experience level is related to a manager's knowledge and skill base. Highly educated managers will conduct more thorough information research on which to base decisions on and they are more aware of the benefits of action aggressiveness than less educated managers. Highly experienced managers, on the other hand, will tend to employ a smaller number of exhaustive search procedures and often repeat the moves and actions that have worked well in the past. (Smith et al., 1991). This emphasizes the

importance of the right kind of competence, expertise and resources to initiate profitable competitive actions.

Finally, it is important to notice that this study measures the action aggressiveness using the three widely launched competitive moves which create more sustainable advantages: new product introductions, new service offerings and market expansions. The structure of the scale most likely strengths the main relationship between competitive aggressiveness and performance under investigation. It can be speculated that firms in concentrated markets often try to limit the industry competition especially when it comes to price competition. It is everyone's benefit to maintain higher price levels within an industry and maximize profits. In concentrated industries the actions are more visible are more likely to be responded to. Instead of creating more competition with direct competitive moves such as price changes or marketing campaigns, it might be more profitable to invest in R&D. Especially now when the accelerating complexity of markets forces firms to find new ways to serve better their customers (Day, 2011). When companies try to keep up with the fast technology development, a smaller amount of the limited resources might be available for other actions.

To summarize, this study provides a new kind of insight to the research on competitive dynamics and competitive aggressiveness by focusing on the relatively small and concentrated Finnish markets. The study contributes several suggestions. First, competitive aggressiveness, measured by the higher volume of sustainable actions, is profitable in concentrated industries where the mutual awareness is high. Secondly, in the case of concentrated and small markets, industry factors such as industry growth and market position seem to lose their meaning in explaining the profitability of competitive aggressiveness. Additionally, contrary to the previous research, organizational factors such as the firm size arise to a more vital role in explaining the higher profitability of competitive aggressiveness. It can be explained by the better capabilities to carry out several competitive actions. Finally, as well as in the previous research, the influence of firm age yielded little results indicating that knowledge brought by experience might be the wrong kind in the fast-changing world. Overall, the relationships between competitively aggressive behavior and firm performance is perhaps more complex than previously

imagined. There is no shortcuts or clear rule of thumb when it comes to human factors and firm's capabilities to understand the market place and initiate profitable competitive actions.

6.1 Managerial implications

This study has implications for practice. Specifically, the study of competitive aggressiveness provides a number of insights regarding the actions managers can take and under what conditions they should take them to increase their performance. Managers of competing firms in highly concentrated markets or stable industries should be aware of their mutual interdependence and focus on more subtle action to maintain their winning status quo. Fast developing technology, changing trends and new business models create new opportunities for firms to answer and win the first mover advantages. It is important to answer these new opportunities faster than the competitors. However, several new product and service launches as well as expanding to new markets requires resources and competence. Hence, managers should consider developing their competence by hiring people of different kind of expertise, which are needed to answer the changing world. Other studies also suggest that competition may benefit exceptionally from resource building and better resource management (Chen & Miller, 2015; Sirmon et al., 2010).

Most importantly, managers should be prepared to the increasing competition. A substantial portion of U.S. economy today is characterized as hypercompetitive. Wiggins and Ruefli (2005) found evidence to support the notion that managers in the U.S. have responded to the hypercompetitive environment by seeking a series of short-term advantages rather than creating sustainable advantages like before. When several short-term advantages are summed up together, companies create a competitive advantage over time. Subtle competitive actions takes more time to launch and may be considered too much time consuming in the fast competition. It can also be expected that the competition in Finland is increasing, given a rising level of economic activity taking place outside the Finnish markets and the level of global interaction (not to mention the growing popularity of online business). It may also be assumed that increased competition will force Finnish firms to change their competitive strategy to a more aggressive and bolder direction sooner

or later like in the United States. Otherwise, the competition may surprise so-called sleepy firms if managers in Finland are not prepared to expand or change their competitive strategy in a short order. One great example was Lidl's entry to the Finnish retail market in the mid-2000s. The retail industry was considered very oligopolistic. Lidl changed the whole industry forcing the two Finnish giant retailers into a price competition. They woke up to the competition too slowly and lost a great portion of their market share.

6.2 Limitations and future directions

The majority of the empirical studies on the profitability of competitive aggressiveness and competitive dynamics has been conducted within U.S. context. Given the rising level of global business outside the United States and competition escalation, it is necessary to explore applicability in different cultures and markets. As this study revealed, findings in competitive dynamics are context dependent and Finnish markets has its own characteristics that must be taken into account in the interpretation of the results. In addition, different types of competitive moves work differently depending on the market context and concentration. In addition, Finland is considered to be a relatively liberal and capitalistic country where competition is seen acceptable but in some collective cultures competitive aggressiveness may be problematic and may violate the cultural norms. In that case, more subtle competitive moves can be considered more profitable. It is difficult to generalize the results of competitive dynamics because they are dependent on context and culture.

Another concern is the sample of companies in diverse industries used in this study, which could underestimate the industry-related effects. For instance, this study did not measure the level of concentration between different industries, which would have given a better understanding to the subject but instead defined the market concentration by country level. Many Finnish firms are also competing at international level when the markets are highly competitive. A future research could examine more deeply the competitive dynamics between national companies and international companies. In addition, the focus of this research was on the short-term performance and the future research could explore the performance in a longer-term. Are the most active and aggressive firms the best performers

also in the long run? In addition, deeper organizational level research is especially needed in highly concentrated markets. For instance, Chen et al. (2010b) found direct effects of TMT (top management team) integration to a firm's action aggressiveness and performance. As mentioned, competence of managers could significantly affect a firm's capability to conduct profitable competitive moves. Firm's capabilities to carry out competitive moves should be investigated further.

Finally, it can be questioned what actually motivates firms to initiate actions such as new product introductions, new service offerings and market expansions. Is it the competitor's actions or the fast changes in trends and technology, which creates new opportunities, or maybe both? Firms in highly concentrated markets may want to limit the direct competition but instead focus on new market opportunities and the first mover advantages that are more difficult to respond by the rivals. In that case the competition in high-concentrated markets differs from the competition in hypercompetitive markets and can be considered to be more far-sighted. Thus, the question remains partly unanswered: will competitive aggressiveness always lead to a better performance or is a restrained competitive approach more profitable in some situations? The study only explored a part of the competitive moves that create more sustainable advantages. However, it can be questioned if the construct measuring action aggressiveness is sufficient to answer the research question. The results might have been different if the construct would have contained a wider range of competitive actions. Thus, it is important to further investigate different kinds of competitive moves in different industry contexts.

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