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SME Entrepreneurial Orientation, Performance, and the Moderating Role of Firm Resources

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PREFACE AND ACKNOWLEDEMENTS

Whilst finishing a Master in Business and Administration, I'm now proudly looking back at five intense, exciting and challenging years of studies. This journey of learning has proven to be steep and during the process I've gained valuable economic and managerial insight within the field of business. Looking ahead, I'm confident this base of knowledge will prove very useful in facing the forthcoming. In writing the master thesis, my field of interest have been oriented within the field of strategic management, as I've taken a particular interest in the resource-based view and of what resources stimulate sustained competitive advantages for the firm. In so doing, I've gained valuable skills within research and academic writing.

I'd like to give thanks to my supervisor, Professor Jökull Hafthor Johannesson, for proposing this interesting field of research and for guidance and encouragement during the process. Finally, I want to direct a huge thanks to my wife, Ida, for showing great patience, tolerance and encouragement during the entire work-process. Your exceptional efforts during this semester, largely taking the responsibility and care of our kids and household, has made it possible for me to carry out this thesis. Whilst yourself finishing a Bachelor's degree, you've shown exceptional resilience and stamina. You're amazing.

ABSTRACT

The effects of entrepreneurial orientation on firm performance are grounded and well established. However, when accounting for potential factors having a moderating effect on this relationship, most scholarly attention has been given environmental factors, thus consequently, potential organizational implications on this relationship have been neglected. In response, this article discusses what role specific organizational factors play in moderating the relationship between entrepreneurial orientation and performance. Representing firm resources, data on intellectual and financial resources are analyzed. A conceptual framework explaining the relationships between EO, performance and firm resources is introduced and explained. Findings presented suggests that a firm's intellectual capital, in terms of professional employees and skilled workers, positively and significantly influences the EO-performance relationship in SMEs. Noteworthy, however, is that although intellectual capital seems to play a key moderating role, merely increasing the level of employees' education does not show similar traits. Finally, and surprisingly, no relationship of significance was found delegating predictive powers to financial resources in light of the EO-performance relationship.

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1 INTRODUCTION

1.1 PREVIOUS RESEARCH AND PROBLEM STATEMENT

A lot have been written about the concept of entrepreneurial orientation (EO) and of its effect on small- and medium size enterprises' (SME) performance. Because of solid research, the EO-performance relationship is thus well established. Previous research, however, have been predominated in developing knowledge on what role environmental factors play in this regard (Capon, Farley, & Hoenig, 1990). What remains unanswered, is which, and to what extent, organizational factors moderates this relationship. Taking a resource based view of the firm (RBV), this thesis puts four specific firm resources under the loupe and investigates their moderating abilities between EO and performance. Limited by the scope of the dataset, financial and intellectual resources were picked as specific firm resources for the analysis.

1.2 RESEARCH OBJECTIVE

The objective of the thesis is to determine if specific firm resources have any predictive powers of significance on the relationship between EO and SME performance, and if so, to what degree.

1.3 RESEARCH QUESTION

How does SMEs financial and intellectual resources moderate the relationship between EO and performance?

1.4 CONTRIBUTION OF THE STUDY

Based on seminal work on the EO construct presented by e.g. Covin and Slevin (1989); Lumpkin and Dess (1996); Miller (1983), this thesis attempts to build upon this body of literature by clarifying the moderating effects of financial and intellectual firm resources. In light of acknowledged theory surrounding the RBV of the firm (Barney, 1991), the aim is to contribute towards a greater understanding on how to utilize this theory in the strategy-making process towards gaining and sustaining a competitive advantage. Thus, a deeper knowledge about the value of specific firm resources would serve as very important for managers in evaluating its resource allocation. Entrepreneurs will also benefit from knowing what resources enchants the entrepreneurial spirit and fosters better performance.

2 THEORETICAL FRAMEWORK

2.1 PERFORMANCE

Measuring performance is not a straightforward operation. As performance is not a clearly defined concept, many strategies have been used when extracting firm performance. Some rely purely on financial figures, others on firm growth or even customer satisfaction. Additionally, researchers meet serious problems when extracting measures for performance from SMEs, as they are often reluctant to disclose information related to performance and financials (Nakos, Brouthers, & Brouthers, 1998). Though commonly used, performance is measured in a variety of ways and thus, no exact formula or single-index can be attained to serve as a general alpha. Rather, measuring performance must be evaluated case-by-case, where one looks at reasonable variables. However, some variables are more commonly used than others and multiple indicators should often be included. Rather than simply accounting for sales- or firm growth, new investments, patents filed, long term positive NPV-projects etc. should be considered as well.

Dess, Lumpkin, McNamara, and Eisner (2014) suggests two approaches of evaluating firm performance. Financial ratio analysis and a wider stakeholder perspective. The former is a numerical valuation based on historical evidence as it purely relies on financial figures in calculating performance. Typically, these figures are extracted from the balance sheet, income statement and cash flow statement. Among many, some useful ratios involving these figures are return on assets (ROA), return on investments (ROI), profit margin, price to earnings ratio (PE ratio) and asset turnover. Financials should not be regarded in isolation, however, but rather be evaluated compared with historical performance and industry norms. Failing to do so exposes the risk of predicting flawed measures of performance as important comparisons are ignored (Dess et al., 2014). The second method incorporates the wider stakeholder perspective and attempts to remedy the myopia problem caused by purely relying on accounting measures. Although more comprehensive, this way of calculating performance have sharply increased in later years, with tools such as the balanced scorecard and the beyond budgeting-philosophy at large (Merchant & Van der Stede, 2012). In this model, the goal is to combine past performance with prospects to get a complete picture of the current position of the firm. As such, tools like SWOT-analysis may serve useful in painting a complete picture.

2.2 ENTREPRENEUIRAL ORIENTATION

In the literature concerning strategy and firm management a line has been drawn between the concepts of entrepreneurship and of entrepreneurial orientation (EO). As the former describes new entry and the content of entrepreneurial decisions, the latter describes how these new entries are undertaken (Lumpkin & Dess, 1996). The concept of EO emerged from the previous and already well-established literature concerning strategic management as scholars recognized a need for purifying the elements surrounding EO (Mintzberg, 1973; Rauch, Wiklund, Lumpkin, & Frese, 2009). Three firm-specific characteristics, first introduced by Miller (1983), have been regarded as the norm when clarifying the EO construct, being innovation, risk-taking and proactiveness (Wiklund, 1999; Wiklund & Shepherd, 2003, 2005). Later, Lumpkin and Dess (1996) expanded these characteristics to also include autonomy and competitive aggressiveness. Although receiving massive response on their paper, many scholars still rely on Millers (1983) three original dimensions of EO. In the following, each of these five dimensions proposed by Lumpkin and Dess (1996) are portrayed, giving an in-depth understanding of the elements underlying EO.

2.2.1 AUTONOMY

Although scholars disagree about the importance of autonomy as a component of EO, some argue that no firm can develop a true entrepreneurial orientation without establishing an independent and autonomous spirit that supports the creation of new entry (Lumpkin, Cogliser, & Schneider, 2009; Lumpkin & Dess, 1996). Thus, environments such as these, where individuals and teams are allowed and encouraged to make decisions independently, stimulate innovativeness and entrepreneurial actions within the firm. Furthermore, they argue that the mere availability of resources, actions of rivals or internal considerations within the firm is not enough to develop an EO in and of itself. Throughout the entire process, for agents to be autonomous they need to remain free to make decisions and act independently. Autonomy is about an individual or a team's independence and autonomy to bring forth and pursuing new ideas and bringing these to life (Lumpkin & Dess, 1996). Some critiques argue, however, that autonomy should be regarded purely as a *consequence* of entrepreneurship, and not as a component in itself (Lumpkin et al., 2009). Regardless, autonomy seems to play an important role in the context of EO as it's needed to exercise a firms strengths and reaching for opportunities, as well as being an important component when developing new ventures (Kanter, North, Bernstein, & Williamson, 1990).

2.2.2 INNOVATIVENESS

Innovation is an action to change the organization, being as a response to internal or external changes in the environment. Since the environment is in continuous change, firms must adopt innovations to keep up and preferably that gives a competitive advantage (Hult, Hurley, & Knight, 2004). Innovativeness are used to describe both technological and administrative innovations, yet other distinctions are sometimes also used (Kimberly & Evanisko, 1981; Lumpkin & Dess, 1996). Thus, it reflects the firm's ability to participate and engage in new ideas, services and technological processes (Lumpkin & Dess, 1996).

Innovativeness is a firm's capacity to engage in and support innovation, such as new ideas and processes that may result in new services and products (Hult et al., 2004; Lumpkin & Dess, 1996). A useful distinction of innovation is divided into technological innovation and administrative innovation, or product-market innovation (Kimberly & Evanisko, 1981; Lumpkin & Dess, 1996). Innovativeness represent an important part of the EO-construct since it reflects the firm's ability to pursue new opportunities, which is very important (Lumpkin & Dess, 1996). Innovativeness take form in several ways, and are not consistent between firms, meaning that firms and its agents take on different levels of innovativeness. As Lumpkin and Dess (1996) describes it, one might look at innovativeness as occurring along a continuum ranging from a simple willingness to try new products etc., to an active passion for developing new skills and master the latest technology and products.

2.2.3 RISK-TAKING

For any business to operate, some level of risk must be included, and thus there are no such thing as a zero-risk business (excluding public sector businesses). However, risk-taking in an EO perspective aims to circle out those firms that show an extra willingness to take additional risk to pursue opportunities. By taking on extra risk, a firm typically endures heavy debt or makes large resource commitments in the pursuit of seizing higher market-shares and thus higher returns (Lumpkin & Dess, 1996). Traditionally, risk in the financial aspect has been regarded as a measure of the probability of default in payment by debt recipients. This way, risk has been a static, metric figure to help financial institutions calculate interest rates and lending policy. This stands in sharp contrast to the EO view which regards risk as a willingness to *venture into the unknown.* Risk is in fact regularly used to describe entrepreneurship as entrepreneurs differs from hired employees in that they accept the riskiness of self-employment (Lumpkin & Dess, 1996).

Risk measured in financial terms, stated as a metric figure, are scaled from "low-risk" to "high-risk" investments. Typically, low-risk are regarded as investments in safe deposits such as banks and treasury bills. In fact, such placement of money is typically regarded as safe and risk-free investments, although there is some theoretical risk still involved. High-risk, on the other hand, are investments in uncertain stocks and bonds, or taking on excessive debt (Lumpkin & Dess, 1996). Measuring risk in an EO-perspective, however, are not as straight-forward. According to Lumpkin and Dess (1996), the approach presented by Miller (1983) of how to scale risk in an EO-perspective, are widely used and well accepted. Here, managers are asked about the firms attitude to engage in risky projects, and their preferences when it comes to taking risk to achieve firm objectives.

2.2.4 PROACTIVENESS

Lumpkin and Dess (1996) refers to *Webster's Ninth New Collegiate Dictionary (1991: 937)* when citing the definition of proactiveness*:* "acting in anticipation of future problems, needs, or changes". A proactive firm is a leader rather than a follower because it undertakes new opportunities, even if it's not the first to do so. Thus, proactiveness relies to the firm's ability to seize market opportunities by the establishment of new entry (e-channel, 5.10.2015). By acting on such opportunities the firm can shape the environment, influence trends and may sometimes even create demand. Proactiveness should not, though, be confused by *competitive aggressiveness,* as proactiveness aims to describe *how* demand are met, while competitive aggressiveness is about *competing* for demand (Lumpkin & Dess, 1996).

2.2.5 COMPETITIVE AGGRESSIVENESS

Outperforming competitors in the marketplace is the essence of competitive aggressiveness. New firms are in a vulnerable position and thus exposed to a high risk of being outperformed by established firms. Thus, competitive aggressiveness has an important position among the dimensions of EO. This is supported by the findings of Lumpkin and Dess (2001) and their factor analysis that showed that both competitive aggressiveness and proactiveness are distinct dimensions of EO. For firms to possess competitive aggressiveness it must continuously and directly challenge its competitors in order to achieve a competitive advantage and improved position to be able to outperform its rivals (Lumpkin & Dess, 1996). Stated differently, it refers to a firm's response to competitive threats (e-channel, 5.10.2015; Lumpkin & Dess, 2001). Also, competitive aggressiveness reflects an ability and acceptance towards competing in unconventional ways, rather than solely relying on traditional ways of competing (Lumpkin & Dess, 1996).

Interestingly, Lumpkin and Dess (2001) found that proactiveness and competitive aggressiveness make unique contributions to firm success. Rather than finding covariance between the variables, they found no significant correlation between the two, indicating that these dimensions of EO vary independently.

Hypothesis 1: In SMEs, EO is positively related to performance.

2.3 THE EO-PERFORMANCE RELATIONSHIP

A large body of literature have established that EO has a positive effect on SME performance (e.g. Brouthers, Nakos, & Dimitratos, 2015; Covin & Slevin, 1989; Lumpkin & Dess, 1996; Miller, 1983; Wiklund, 1999; Wiklund & Shepherd, 2005). Furthermore, longitudinal studies have proven this positive relationship to grow over time, even when accounting for previous performance (Wiklund, 1999; Zahra & Covin, 1995).

Lumpkin and Dess (1996) introduced a conceptual framework that explains the relationship between EO and performance, moderated by both environmental and organizational factors. By introducing these potential moderator dimensions into the model, the complexity of the EO-performance relationship was increased as compared to earlier conception (Wiklund, 1999). The potential moderating effects of environmental factors have been given wide attention in the literature. Zahra and Covin (1995) argues that environmental factors have particular moderating importance on the EO-performance relationship and that firms operating in hostile environments will benefit greatly by possessing higher levels of EO. This belief is debated, however, as findings presented by Wiklund and Shepherd (2005) argues that environmental factors in itself are insignificant, but are dependent on de business' EO. Nevertheless, the intuition behind the overall model is that firms possessing greater EO thus are likely to perform better than their less entrepreneurial counterparts. The EO-performance relationship has abilities of being sustainable over time, giving the firm payoff in both financial terms and in firm growth (Wiklund, 1999).

Among several organizational factors, firm resources are described as a variable that moderates the EO - performance relationship. As a contribution to the interpretation of the performance-side of the model, several aspects of performance is suggested measured (Lumpkin & Dess, 1996). As short-term performance is affected negatively by heavy investments in e.g. R&D, performance in the long run may still have a positive NPV. Thus, accounting for such irregularities are needed to acquire an accurate measure of firm performance. By this analogy, research attempting to capture the relationships in this model, must consider both traditional

accounting measures, market share, sales growth and other relevant forecasts in the evaluation (Lumpkin & Dess, 1996).

2.4 A TRADITION OF SWOT-ANALYSIS

A very common and useful framework when analyzing a firms internal and external environment, is commonly referred to as the SWOT-analysis. Describing internal factors as strengths and weaknesses and external factors as opportunities and threats, the framework gives an overall picture of the firm's position, compared with competitors. Although its usefulness are somewhat debated, most scholars accept the SWOT-framework as a constructive tool applied in strategic management (Pickton & Wright, 1998). However, the tool does not go into debt analyzing the quality of resources listed as strengths of weaknesses, and thus their relevance on how to achieve competitive advantage over its competitors are hard to distinguish (Barney, 1991).

2.5 A RESOURCE-BASED PERSPECTIVE

Listed as a moderator variable under the organizational domain in the model above (Lumpkin & Dess, 1996), we find firm resources. We interpret this relationship as firm resources having a moderating effect on the relationship between EO and Performance. The resource-based view (RBV) suggests looking within the firm's own resources and capabilities to establish competitive advantage. The RBV approach to strategy-formulation suggests looking at the key relationships within the firm that may develop competitive advantages that can be sustained over time (Grant, 1991). Multiple strategies can be employed as to make use of the potential of a firm's resources, within the limits of what the environments allow. In an attempt of seizing opportunities, firms might be tempted to heavily committing resources as to "stay ahead of the game" or to reduce the chance of failure. Gumpert and Stevenson (1985) argues that this mindset is flawed and unjustified as they present findings indicating no relationship of significance between success and the size of the resource commitment. Linking firm resources to firm strategy, Romanelli (1987) concludes that once a firm have established a method of utilizing its resources, it does best by concentrating on optimizing that specific strategy, rather than constantly changing strategies in a pursuit of "best-practice". Her view concurs with Wiklund and Shepherd (2003) conclusion on knowledge based resources, stating that the most important aspect of firm resources is how management utilizes them, and not the resource itself.

2.6 FIRM RESOURCES

Firm resources are described as all resources that are somewhat permanently tied to the firm and that are unique and rare (Wernerfelt, 1984). By resources it's here referred to all tangible and intangible assets that can be thought of as a strength or weakness. As such, firm resources are all assets, capabilities, organizational processes, information, knowledge etc. that enables the firm to develop strategies. A useful distinction is to divide resources into three distinct areas, being tangible, intangible and organizational capabilities (Dess et al., 2014, p. 83).

2.6.1.1 TANGIBILE RESOURCES

Easily identified resources such as physical and financial assets are categorized as tangible assets. Tangible, in this context, includes a wide range of assets and spans from physical machinery and facilities to patented ideas, cash accounts and equivalents, and even borrowing capacity. Other than financial and physical assets, we also find technological and organizational assets within this domain. Examples being production and planning processes and control systems.

2.6.2 INTANGIBLE RESOURCES

Intangible assets represent all practices, knowledge and routines that a firm and its agents possesses. As such, these resources are not as easily identified and are often difficult for competitors to duplicate as they often require unique people and know-how to achieve. Intangible in this regard are human resources such as the skill of employees, innovation capabilities and the reputation of the firm. Regarding the latter, both brand name, customer loyalty and supplier relationships come into play (Dess et al., 2014, p. 84). Organizational culture has also been highlighted as an important aspect of a firm's resources that can be a source of sustained competitive advantage. If the firms culture is valuable, rare and imperfectly imitable, it may give the firm such an advantage, if nurtured correctly (Barney, 1986).

2.6.3 ORGANIZATIONAL RESOURCES

Some resources are not perceived as tangible or intangible, but rather as resources tied to the business's value chain. These resources are referred to as organizational resources. By using firm-specific expertise, inputs become desired outputs that creates value both for the firm and its stakeholders. As such, by optimizing production methods or "the way of doing things" the firm may benefit from economies of scale and/or economies of scope. Flexible production processes, outstanding customer-service and excellent innovation policy, are thus all examples of such resources (Dess et al., 2014, p. 84). Firm resources are easily confused with firm competence, and the academic literature does not always draw a clear-cut and concise picture

differentiating these concepts. A clear line should, however, be drawn between the two as they are distinctively different. While firm resources are the wide array of resources connected to the firm, firm competence, on the other hand, is regarded as being only one of these resources. These concepts captures the totality of the firm-specific know-how that constitutes a company's knowledge (Prahalad & Hamel, 1990). Within the realm of competence, two different types of competence are often referred to, being firm competence and core competence. While firm competence is used as a proxy for combined competence, core competencies, on the other hand, are a narrow list of a firms rigid and unique skills. Prahalad and Hamel (1990) compared the diversified firm as a large tree. On this three, the root-system are the core competence and know-how that provides stability and nourishment to the firm at large. Core competencies are thus the collective learning and coordination of skills, products and technology within the organization. Further, it involves close communication spanning wider than the organizational boundaries, with an organizational-wide commitment to involvement and knowledge-sharing. Unique individual skills possessed by employees or other stakeholders thus cannot be regarded as a core competence (Prahalad & Hamel, 1990).

> **Hypothesis 2:** In SMEs, higher levels of firm resources will have a positive moderating effect on the relationship between EO and performance.

2.6.4 THE VRIO-FRAMEWORK

Established on the basis of literature surrounding RBV, a framework called VRIO has emerged. VRIO stands for *Valuable, Rare, Inimitable Resources and Organizations* (Cardeal & Antonio, 2012). The framework emerged based on seminal work of Barney (1991, 1995) where he describes what characteristics distinguish resources in quality. The framework guide firms in evaluating its resources in the pursuit of clarifying which resources give potential of achieving sustained competitive advantage. As such, it goes much deeper into what specific resources provide advantages over competitors as compared to the SWOT-analysis. The resource must be valuable in terms of grasping opportunities or by eliminating threats. Additionally, it must be a rare resource as compared by competitors' resources, both current and potential competitors. The resource must be difficult for competitors to imitate and finally, the resource must have no equivalent substitutes (Barney, 1991). Empirical support of the importance of VRIO has been given by Wiklund and Shepherd (2003), where they conclude that the combination of resources (VRI) and organization (O) gives the best prediction of performance. By combining both internal and external analysis of phenomena inside and outside the firm, and by integrating internal and external perspectives, the RBV goes beyond the traditional

SWOT-analysis. The RBV provides key insights on why some firms outperform their competitors, while others stagnate. Additionally, it may prove helpful for businesses when developing strategies on how to benefit from its core competencies (Dess et al., 2014, p. 82).

Resources, like the ones described, can be linked to specific attributes within the internal analysis in the SWOT-framework, namely strengths and weaknesses. Wernerfelt (1984) argues that a goal of any firm thus should be to; *"create a situation where its own resource position directly or indirectly makes it more difficult for others to catch up" (p. 173)* and links this goal to Porter (1980) five competitive forces. According to Wernerfelt (1995), firms are unlikely to succeed if their strategy is not constructed through a resource-based view. Based on this conclusion he argues that the resource-based view is here to stay. There are four attributes used to describe the quality of a given resource. In this framework, quality is used to describe to what degree a resource is useful to gain sustained competitive advantage. To fulfill these attributes, a resource must be valuable, rare and imperfectly imitable. Additionally, there cannot be any equivalent resources that are valuable yet not rare or imperfectly imitable substitutes to the resource (Barney, 1991). If the firms resources doesn't attain these attributes, they may only contribute to achieving competitive parity (Dess et al., 2014, p. 82). Furthermore, one assumes heterogeneity and immobility of resources in the competitive environment to gain sustainable competitive advantage. Notably, firms cannot expect to gain such advantages if resources are highly mobile and evenly distributed between competitors the industry (Barney, 1991). Heterogeneity, in this context, refers to the ability for firms with unequal capabilities to at least break even in a competing marketplace. This way, firms with superior resources will generate an additional surplus and thus will surpass its competitors in terms of performance (Peteraf, 1993). In their longitudinal study, Wiklund and Shepherd (2005) found unexpected evidence supporting a resource-based argument when studying the EO – performance relationship of over 400 Swedish firms. Their findings showed that SME's with limited financial capital and other resource constraints can become superior performers if they enjoy high EO. In such environments, firms with an EO may benefit in terms of the ability to differentiate from competitors (Wiklund & Shepherd, 2005).

2.6.5 CORE COMPETENCIES

Not all resources are equally valuable or give the same competitive advantage for the firm. Some are easily imitable or can easily be substituted as examples. Thus, those resources that gives these advantages are resources that gives better advantages for the firm. Prahalad and Hamel (1990) calls such resources core competencies, as they are resources specific for the

firm. Furthermore, they argue that it's these core competencies that distinguishes one company from its competitors, as all other resources can be adopted, and argues that this is the reason why some firms outperform others with similar characteristics. By looking at the firm as a bundle of competencies rather than a bundle of businesses, the firm is much more eligible to tackle obstacles and changes in the environment.

2.6.6 SUSTAINED COMPETITIVE ADVANTAGE

Based on seminal work conducted by Barney (1991), its commonly distinguished between resources giving a competitive advantage and those who are source of sustained competitive advantage. Firms first develop sustainable competitive advantages when its resources give grounds for a position that are not easily imitable or substitutable by competitors. According to Barney (1991), a firm achieves sustained competitive advantages when implementing new and value creating strategies not simultaneously being implemented by competitors, and competitors are unable to achieve similar benefits in other ways. A clarification of importance in this regard, is that sustained competitive advantage is not achieved only based on the current competitive environment, but also on potential future environment. Thus, sustained competitive advantage is not achieved even if a firm enjoys competitive and sustained advantages over its competitors in the current, if future potential threats might challenge the position. Sustainable competitive advantage is achieved when competitors either cannot or will not take measures to close the gap. This is one of the most important criterions since if they can or if it's in their best interest to do so, no sustained advantage is achieved (Coyne, 1986). When firms consistently deliver products and services that fulfills most customers buying criterions, the firm endows sustained competitive advantage. This advantage persists in the eyes of the customers, and thus, are not automatically transferable to others (Hall, 1993).

Maintaining sustained competitive advantage does not come without effort. Firms must constantly monitor and evaluate their current position as the competitive environment change over time. This leaves managers with a great responsibility to be aware of their surroundings and to reality-check the sustainability of their current position (Lado & Wilson, 1994).

2.7 FINANCIAL RESOURCES

Having readily access to capital makes the firm able to comprehend unexpected obstacles and buy time when needed. Furthermore, firms experiencing growth are more likely to invest in expanding projects and assets if they have strong financial abilities. Thus, financially stronger firms are more likely to leverage growth opportunities and employ more ambitious strategies

than their less fortunate counterparts. Moreover, financially capable firms experience more trust with investors and are more likely to get external financing by lenders and investors (Cooper, Gimeno-Gascon, & Woo, 1994). Wiklund (1999); Wiklund and Shepherd (2005) reports that financial capital availability influences performance greatly, and even more so than EO. Such firms have the resources enabling the possibility to exercise desired activities and investments, stimulating higher future performance. Noteworthy also, is that entrepreneurs investing greater levels of financial capital into their ventures seems to enchant the engagement and commitment into the business, thus increasing the chance of success (Brüderl, Preisendörfer, & Ziegler, 1992). On another side, Castrogiovanni (1996) proposes that higher levels of the founders initial investment, might also result in a drop in proactive orientation as the importance of planning decreases. In turn, this exposes the firm of a greater risk of inefficiency during the start-up period.

Hypothesis 3: In SMEs, greater financial stability will have a positive moderating effect on the relationship between EO and performance.

Hypothesis 4: In SMEs, greater access to finance will have a positive moderating effect on the relationship between EO and performance.

2.8 INTELLECTUAL RESOURCES

Based on thorough analysis of existing research, evidence show that strong human capital, or human resources, can be a source of sustainable competitive advantage (Wright, McMahan, & McWilliams, 1994). In any case, such resources are always a potential source of sustained competitive advantage, even if the HR construct is complex and not all firms are able to make best use of such resources. Implementing new strategies and innovations thus relies on having the needed intellectual capital to successfully incorporate new practices and production methods (Grant, 1991). Flamholtz (1985) (as cited in Wright et al. (1994)) notes that investments in human capital should be regarded as capital investments as they provide at least the same potential for sustained competitive advantages as does direct capital investments. When investing in human capital, the firm generate revenue flows over several accounting periods. Intangible resources, with a particular emphasis on intellectual capital, have shown to be a superior source of firm value creation in light of the resource-based view (Riahi-Belkaoui, 2003). Moreover, firms fostering the development of social capital, being building strong interpersonal relationships and team relationships, are likely to be more successful (Nahapiet & Ghoshal, 1998). A positive association have been detected linking diversified organizational

structures to higher levels of external EO. Consequently, having a specialized and professional staff, stimulates innovation and external influence due to greater networks of professional contacts (Zahra, 1991).

Regarding education, performance have shown to be enchanted in firms experiencing higher levels of education. Stimulating problem-solving and patience, resulting in such firms achieving better levels of performance and survival rate (Cooper et al., 1994). Though, in a study linking both intellectual and financial capital to small venture survival rates, Castrogiovanni (1996) proposes that a slack of proactiveness is created if the founder(s) possesses explicit knowledge, as it might stimulate greater belief in one's own abilities as well as easier receiving goodwill by others. Therefore, knowledge may serve as a double-edged sword as it reduces the need for a strategic planning, thus in turn fostering slower learning and efficiency in the firm.

Research conducted on how intangible resources are linked to sustained competitive advantage, lead to Hall (1993) proposing a framework linking the concepts where he suggests that the sustainability of competitive advantage is based on the sustainability of the key attributes of the products/services and with the durability of the key intangible resources, as compared with one's competitors. Furthermore, his findings show that a firm's products most important attributes giving competitive advantage is quality, availability, image and price.

> **Hypothesis 5:** In SMEs, the level of employee's education will have a positive moderating effect on the relationship between EO and performance.
>
> **Hypothesis 6:** In SMEs, growth in professional and skilled workers will have a positive moderating effect on the relationship between EO and performance.

2.9 CONCEPTUAL FRAMEWORK

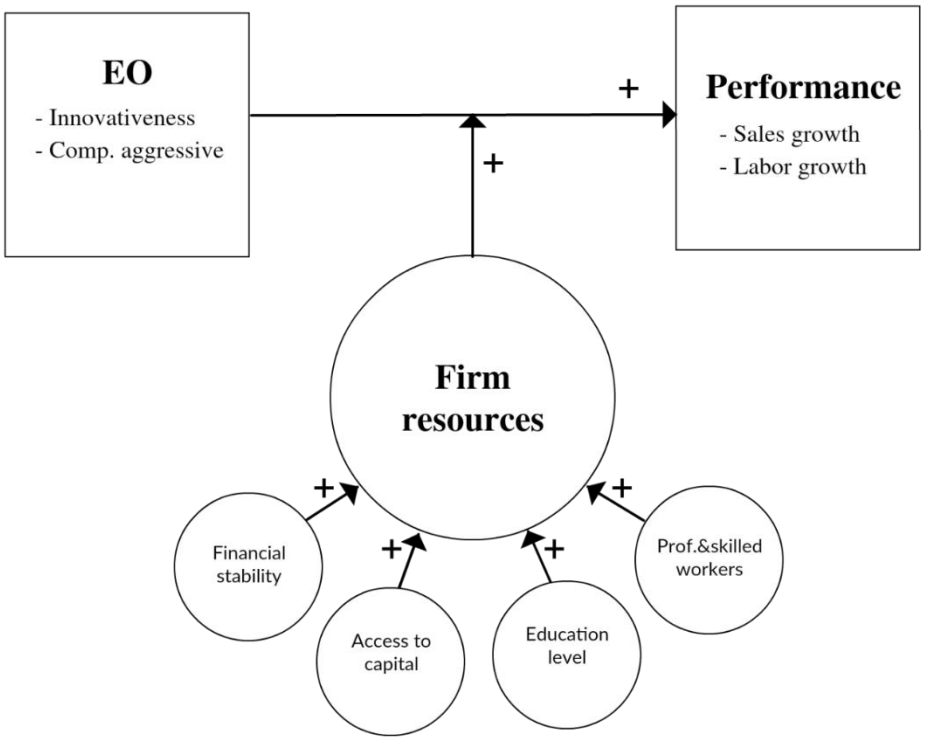

FIGURE 1: Conceptual framework - EO-Performance moderated by firm resources.

Based on the hypothesized relations proposed, connecting EO, firm resources and performance, a pictorial summary are given explaining these relations, as shown in figure 1. Notably, all signs are positive, indicating that all predictors are assumed having a positive impact on performance or the EO-performance relationship.

Hypothesis 1 portrays a simple linear relation between two variables, being EO having a positive relationship to performance. Formally, this relationship is represented by the following equation;

$$Y_i = \beta_0 + \beta_1 x_{1i} + \varepsilon_i$$

where Y_i represents the dependent variable *performance*, β_0 represents the constant term, β_1 represents the coefficient of the independent variable, x_{1i} represents the independent variable and finally, ε_i representing the error term. Except for hypothesis 1, all the hypothesis presented in chapter 2 involves an interaction term, or moderator variable. Formally, these hypotheses are modelled;

$$Y_i = \beta_0 + \lambda_0 x_{1i} + \lambda_1 (x_{1i} \cdot x_{2i}) + \lambda_2 x_{2i} + \varepsilon_i$$

where β_1 has been replaced by $(\lambda_0 + \lambda_1 x_{2i})$, plus added the moderators direct effect on the dependent variable, written $\lambda_2 x_{2i}$.

3 METHODS

3.1 SOURCE OF DATA

All data have been gathered from the publicly available database; Enterprise Surveys (ES), administered by The World Bank (www.enterprisesurveys.org). The ES database are free and easily accessed for researchers, requiring only a pre-registration to acquire a license of usage. The database is a representative collection of firm-level surveys in the private sector that cover a broad range of topics regarding business environments (Surveys). The German enterprise survey collected in 2005 was selected as the source of data, as Germany represents a high-income OECD-country, and thus, are comparable with other western countries. Additionally, the 2005 German dataset does *not* follow the global methodology usually followed by surveys collected through ES. As ES are predominantly focused on developing economies, their global methodology includes few questions regarding firm resources and of entrepreneurial orientation as such. However, the German survey deviates from this norm, covering a broader range of questions concerning the level of the firm's resources and of their innovative and competitive environment. Furthermore, the German survey treats SMEs as firms with less than 250 employees, rather than less than 100 employees, as ES's global methodology does. This is in line with the European commission's definition of SMEs and is consistent with how similar research previously have defined SMEs (Brouthers et al., 2015).

The original dataset collected from ES of the 2005 German survey, consisted of a total of 1.196 firms and 380 variables. Of these, 124 firms were removed as they were identified as "large", being a total stock of employees of 250 or above, as defined by the European commission. All entries with missing values on one or more of the critical variables were also removed, as done in a related study (Russo & Fouts, 1997). Such entries amounted to a total of 613 observations and were eliminated from the analysis. Thus, the final sample size were 459 firms with complete data. Roughly two thirds of the original sample size were thus disregarded. The remaining observations with complete data still provided solid ground for a satisfying analysis, compared with similar conducted research (Brouthers et al., 2015; Russo & Fouts, 1997).

The industries in which the firms operate, were grouped into two distinct categories, being service- and manufacturing firms. Firms operating in wholesale- and retail trade, real estate, hotels- and restaurants and other services made up the group in the former category. Within the latter, firms in mining- and quarrying, construction and manufacturing, were grouped.

All data have been processed though the statistical software Stata 14. Tables, as presented in this thesis, have been generated with Excel 16. All Stata-codes used to derive results are given in detail in the appendix.

3.2 USE OF METHODS

The methods used follow the example of similar researchers studying related topics (Brouthers et al., 2015; Russo & Fouts, 1997; Subramaniam & Youndt, 2005). Multiple regression analysis has been conducted, measuring the relationship between the dependent and independent variables using ordinary least square methods, as well as the effect of various interactions representing firm resources. The results are presented in in hierarchical regressions, giving a structured and explanatory picture explaining changes in coefficients, standard deviation and significance levels of all variables related to the dependent variable. A widely used method by researchers when collecting measures of EO is by using Likert scale questionnaires, as suggested by e.g. Covin and Slevin (1989) Miller and Friesen (1982), and Lumpkin and Dess (1996) (Brouthers et al., 2015; Covin & Wales, 2012; Wiklund, 1999). This makes intuitive sense as it allows respondents to express their attitude towards a variety of statements regarding non-metric concepts, such as EO (Sekaran & Bougie, 2013). This is typically done by a 5- or 7-point scale ranging from "strongly disagree" to "strongly agree". In this study, however, such measure of firm EO is not attainable through data collected by the Enterprise surveys, and thus, alternative measures have been used.

3.3 DEPENDENT VARIABLE

As illustrated in the conceptual framework depicted in chapter 2, the dependent variable of interest in this study is performance. As performance is a concept in which is difficult to accurately and universally define (Nakos et al., 1998), perceptual measures of performance are commonly used (Brouthers et al., 2015; Capon et al., 1990). As no solid, numerical figure were given as estimates on performance in the dataset, such as ROA or profitability, measures of growth have been used as proxies of performance. Sound research suggests that measures of growth are valid indicators of firm performance (Brouthers et al., 2015; Capon et al., 1990; Cooper et al., 1994; Lumpkin & Dess, 1996; Rauch et al., 2009). Both Capon et al. (1990) and Lumpkin and Dess (1996) explicitly portrays measures of growth as indicators of firm performance in their conceptual frameworks concerning explanatory effects on firm performance. Although acknowledging that growth is commonly used and may be more accurate than accounting measures of financial performance, Zahra (1991) warns of myopic

behavior by firms as they might be tempted to trade-off long-term growth in the pursuit of short term profits (Wiklund & Shepherd, 2005).

A combined measure of sales- and labor-growth was assessed to get a satisfying proxy of firm growth and thus for firm performance. Noted however, should be that previous research have regarded these figures as characteristics on both explanatory variables and of performance itself (Capon et al., 1990). Alongside the broader concept of performance, firm growth should also be regarded as a multidimensional construct. However, high levels of heterogeneity within the domain of growth measures have been observed in research studying characteristics of high-growth firms (Delmar, Davidsson, & Gartner, 2003). This indicates that high-growth firms do not grow similarly, exposing the possibility of high variations between different growth measures in similarly "successful" firms. For this reason, Delmar et al. (2003) suggests selecting a narrow aspect of growth, specifically by using a single measure of growth. Therefore, both growth measures have also been analyzed separately to account for potential conflicting variance between the measures.

Both measures were calculated using the same mathematical expression, as portrayed in the guidelines to Enterprise Surveys' global methodology. Real annual sales growth was calculated using the following expression;

$$\left(\frac{1}{\mathrm{t}}\right) * \frac{\mathrm{d2}' - \mathrm{n3}'}{\frac{\mathrm{d2}' + \mathrm{n3}'}{2}} * (100)$$

where d2' and n3' denotes values of total sales last fiscal year and total sales three years ago, respectively. Annual labor growth was calculated by using following expression;

$$\left(\frac{1}{t}\right) * \frac{l1' - l2'}{\frac{l1' + l2'}{2}} * (100)$$

After running the formulas on the original variables, both outputs were added together. The combined measure of these estimates was then divided by two, to remain within the domain of percentages (positive and negative values).

3.4 INDEPENDENT VARIABLE

Entrepreneurial orientation is regarded as the sole independent variable in this study. As such, all five components of EO as suggested by Lumpkin and Dess (1996) should preferably be included. To precipitate, these factors are autonomy, innovativeness, risk-taking, proactiveness and competitive aggressiveness. Finding measures of all five dimensions, however, was not attainable through the 2005 German ES survey, thus only some dimensions of EO had to be selected. Studying only particular dimensions of EO is common and it seems not to have been established a standard across studies in terms of measuring EO (Rauch et al., 2009). Due to considerations taken as to what data was available from the survey, this paper has taken measures of innovativeness and of competitive aggressiveness in the construction of the independent variable, EO.

Innovativeness was assessed trough a two-step process. In the survey, firms answered the following question; *Has your firm developed successfully a major new product line?* If yes, they were given a value of 1, if not they were given the value of 2. Firms answering yes, were regarded innovative. For the purpose of keeping signs positive, as formulated in hypothesis 1, this variable was recoded as a dummy variable, giving non-innovative a value of 0. Moreover, all firms labeled as innovative were then asked to answer how important this initiative had been for the survival of the firm, collected through a Likert-scale ranging from 1-5 (5 being very important). The final variable displaying innovativeness thus consisted of non-innovative firms, coded as 0's, and innovative firms distributed on a scale from 1 to 5, based on importance of innovativeness.

Competitive aggressiveness was attained as an average score based on the firm's response regarding the importance they felt international and domestic pressure played on the firm's decisions about *"developing new products or services and markets"*. The data were collected using 5-point Likert-type scales ranging from 1, not at all important, to 5, very important. Competitive aggressiveness was considered increasing with the direction of the scale, as firms operating in hostile environment are perceived as being competitive and aggressive. The firms were also directly asked about the exact number of their competitors, but unfortunately, this question was very poorly answered. This would be a good measure indicating how competitive aggressive the firm are, but was considered disregarded due to the low response-rate.

Finally, the independent variable EO was established by taking the average score of innovativeness and competitive aggressiveness.

3.5 MODERATOR VARIABLES

As depicted in figure 1, firm resources are thought of as the variable moderating the relationship between EO and performance, and thus, it's being regarded as the moderator variable. In light of Lumpkin and Dess (1996) conceptual model, firm resources are one of many organizational variables that presumably moderates this relationship. Acknowledged theory, as presented in the former, indicates that firm resources are positively related with performance, and thus, firms with readily and high levels of resources should outperform those who doesn't, keeping all other factors constant.

Several variables were identified as describing a firm's resources, within the limits of what the data provided evidence. In total, four variables were identified as describing firm resources, being financial stability, financial capacity, skill- and education of workforce. Tangible assets were measured through financial capacity and financial stability, where the former was attained from the firms access to finance. This variable was reverse coded to range from 1, being firms that struggle to get financing, to 4, firms with easy access to external financing of new projects. This way, financially strong firms would attain higher values, and the coefficient would show positive sign if the regression confirmed the hypothesis'. Financial stability was assessed through a yes/no question asking whether the firm had paid any obligations pas due, during the last 36 months. Coded as a dummy variable, firms were given a value of 0 if they had no past-due payments and 1 if they had paid one or more obligations past due. Thus, deviating from the other variables so far, this was negatively coded, as 1 was indicating financially unstable firms. Conversely, those firms who had paid all obligations prior due, were given the value of 0, indicating financially stable firms.

Within the domain of intangible resources, growth in professional employees and growth in employees with university degree or higher were used. Both variables are calculated using the same formula as for sales- and labor growth, thus giving annualized growth in professional employees and employees with minimum university degree, respectively.

No variables expressed in the data gave any ground to estimate measures of organizational resources, thus this aspect of firm resources was ignored.

3.6 CONTROL VARIABLES

There were in total assigned four control variables to the regression. The controls were picked on the basis of previous research findings regarding factors having a contingent effect on performance (Brouthers et al., 2015; Capon et al., 1990; Russo & Fouts, 1997). Three areas of

significance are commonly referred to when attaining determinants of firm performance, being strategy-related, organizational and environmental factors, e.g. as conceptualized by Capon et al. (1990). Within the first domain, data on firm advertising were included as a control variable. This measure was attained through dividing projected spending on advertising on projected total income same year, thus giving a projected investment percentage as a function on projected total income. Within the organizational domain, growth in capacity utilization was used as a singular proxy. It was estimated as an annualized percentage of growth, ranging 36 months back in time. Growth in capacity utilization was calculated using the same formula as for sales- and labor growth;

$$\left(\frac{1}{t}\right) * \frac{cu1' - cu2'}{\frac{cu1' + cu2}{2}} * (100)$$

Capacity utilization was the only variable showing significance in Capon et al. (1990) research-findings, as well as it showed sound and significant predictive powers in the models presented in this article. Another commonly used control variable when controlling for determinants of performance, is firm size, but was decided not included in the final regression. The preliminary tests showed no significant deterministic relationship on performance, as did the findings of both Brouthers et al. (2015) and Russo and Fouts (1997). This also supports the findings of Capon et al. (1990), who disregarded firm size as a determinant as it showed no significance on performance in their analysis. The age of the establishment was included to account for potential explanatory effects age might have on performance, and was measured by how many years the firm had been operating. Older and more experienced firms may exhibit certain characteristics that in turn may influence performance (Capon et al., 1990; Wiklund, 1999; Wiklund & Shepherd, 2003, 2005). Finally, the environmental domain was captured through a dummy variable taking the value of 1 if the firm operated within a service-related industry, and 0 if within manufacturing industry. This to detect any industry-specific characteristics differentiating the industries, as done in similar research (Brouthers et al., 2015). Specifically, manufacturing firms consisted of; mining, construction and manufacturing, and service-firms consisted of; transporting-, real-estate-, wholesale- and retail-firms, hotels & restaurants and "other services".

4 RESULTS

The correlation matrix is given in Table 1. Advertising and service indicates only minor correlations. CU growth showed the greatest correlation to performance (0.439) (not counting

the constituent terms, sales and labor growth). Additionally, all interaction terms, except for EO-eg showed meaningful correlations to performance (0.118 – 0.166). This indicates an initial support of hypothesis 1 and 2. Noteworthy also, is that age showed a significantly negative correlation to performance (-0.261). As the variable performance is a unidimensional construct developed as the average of sales- and labor growth, it's interesting to notice potential differences in these values. Between the variables constituting performance, sales- and labor growth, the correlation is 0.349. EO gives a minor correlation with labor growth (0.059), but gives roughly triple values when compared to sales growth (0.184). The same trend goes for the interaction terms EO-fu (0.059 vs 0.197) and EO-pg (0.09 vs 0.164). This is consistent with the modest Cronbach's' alpha that was found between the variables (0.50). Despite some variation, the remaining correlations shows a similar trend.

Table 1
Correlation matrix

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1.	Age	1.00										
2.	Advert	-0.03	1.00									
3.	CU_gr	-0.16	0.02	1.00								
4.	Industry	-0.23	-0.10	0.01	1.00							
5.	EO	-0.10	0.03	0.08	-0.15	1.00						
6.	EO-fu	-0.05	0.01	0.08	-0.09	0.68	1.00					
7.	EO-af	-0.16	-0.01	0.06	-0.11	0.93	0.57	1.00				
8.	EO-eg	0.02	-0.01	0.09	-0.02	-0.00	-0.09	0.02	1.00			
9.	EO-pg	-0.03	0.00	0.07	0.03	-0.15	-0.04	-0.15	0.03	1.00		
10.	L_gr	-0.18	0.09	0.28	0.06	0.06	0.06	0.09	-0.06	0.15	1.00	
11.	S_gr	-0.24	0.02	0.42	0.04	0.18	0.20	0.16	0.04	0.06	0.35	1.00
12.	Perf	-0.26	0.06	0.44	0.06	0.16	0.17	0.16	0.00	0.12	0.76	0.88

TABLE 2: Correlation matrix

Table 2 gives a short description of each of the variables in the regressions, in addition to providing the sources underlying their relevance. Table 3, 5 and 6 gives the hierarchical regressions with both performance and its constituent terms as the dependent variable (tables respectively), presented in blocks noted as models 1 to 6. Model 1 in each table consists purely of the control variables, model 2 includes EO, and finally, models 3 to 6 portrays the effect of each of the interaction terms consisting of various firm resources.

Table 2
Variables – explained

Type	Variables	Explained	Source(s)
Contr.	*Age*	Age of establishment	Capon et al. (1990); Wiklund (1999); Wiklund & Shepherd (2003, 2005);
	Advert	Projected spending on advertizing next fiscal year, as proportion of total sales income current year.	Capon et al. (1990); Russo & Fouts (1997);
	CU_gr	Growth in capacity utilization, last 36 months	Capon et al. (1990);
	Industry	Dummy variable giving service-firms the value of 1.	Brouthers et al. (2015); Capon et al. (1990); Wiklund (1999); Wiklund & Shepherd (2005);
Indep.	*EO*	Entrepreneurial Orientation. Proxy consisting of innovativeness and competitive aggressiveness. Innovativeness: "percieved importance of innovative actions". Comp. agg "percieved importance of pressure"	Brouthers et al. (2015); Lumpkin and Dess (1996); Miller (1983); Rauch et al. (2009);
Inter.	*Firm Resource*	Financial instability: "dummy variable. 1 if firm have payed obligations overdue". Access to finance: "percieved difficulty of accessing external financing". Education growth: "growth in workers with a minimum of university degree". Pro&Skill gr.: "Growth in professional workers or skilled workers".	Dess et al. (2014); Miller (1983); Miller and Friesen (1982);
Dep.	*Perf*	Unidimentional proxy of performance consisting of sales- and labor growth	Capon et al. (1990); Lumpkin and Dess (1996); Zara (1991); Wiklund & Shepherd (2005); Rauch et al. (2009); Cooper et al. (1994); Delmar et al. (2003)

TABLE 3: Variables – explained

Within the group of control variables, age and capacity utilization stands out as highly significant ($p < 0.01$) in all models (one exception in table 6, model 4, giving age < 0.05). The remaining two controls did not show any significance within the cut-off limits in table 3 or 5, but advertising showed minor significance linked to labor growth in model 6 ($p < 0.1$). Combined, the total variance in performance accounted for by all control variables amounted to a total of 23.3 % (adj. R^2 = 22.3 %), with a highly significant F-statistic of the total regression in table 3 ($p < 0.01$). The regression indicates a highly significant coefficient of EO on performance ($p < 0.01$), building support for hypothesis 1. Surprisingly however, it does not indicate similar support in all the models including interaction terms. In model 3 and 4, modeling financial instability and access to finance, no significance is detected between EO and performance. However, model 5 and 6 shows highly significant coefficients of EO ($p < 0.01$). The general tendency is that EO shows significance in models portraying employer qualifications, but not when it comes to financials.

Table 3

Hierarchical regression results (performance)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Control variables	EO	Financial instability	Access to finance	University growth	Pro&skill growth
Control variables						
Constant_	2.83***	1.38*	1.37*	1.40*	1.40*	1.21
	(0.62)	(0.82)	(0.82)	(0.82)	(0.82)	(0.82)
Age	-0.09***	-0.08***	-0.08***	-0.08***	-0.08***	-0.08***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Advertising	1.77	1.73	1.74	1.82	1.71	1.70
	(1.46)	(1.45)	(1.45)	(1.46)	(1.45)	(1.44)
Capacity utilization gr.	0.71***	0.70***	0.70***	0.70***	0.71***	0.69***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Industry	0.24	0.51	0.48	0.52	0.51	0.51
	(0.57)	(0.58)	(0.58)	(0.58)	(0.58)	(0.58)
Indep. variable						
EO		0.65***	0.26	0.34	0.65***	0.75***
		(0.25)	(0.33)	(0.44)	(0.25)	(0.25)
Moderator variable						
# EO*Firm resource			0.53*	0.11	-0.01	0.05**
			(0.31)	(0.13)	(0.02)	(0.02)

R^2	0.233	0.245	0.250	0.246	0.246	0.255
ΔR^2		0.012	0.005	0.001	0.001	0.012
F-test for ΔR^2	34.45***	7.05***	2.98*	0.73	0.61	6.22**
Adj. R^2	0.223	0.236	0.240	0.236	0.236	0.245

N = 459
SD (standard errors) in paranthesis
* - p < .10
** - p < .05
*** - p < .01

TABLE 4: Hierarchical regression (performance)

Only two of the interactions gave values of significance in the regression on performance. Professional employer growth had the highest significance ($p < 0.05$), giving support to hypothesis 6. Thus, the initial results indicate that for SMEs, increasing the level of professional and skilled workers will lead to higher performance. Surprisingly, no values of significance were found in any of the regressions giving growth in employees' education any explanatory powers on performance. Nevertheless, table 6 shows a weak negative value of minor significance ($p < 0.1$) regarding education growth influencing EO and labor growth. Thus, no support of hypothesis 5 was found. However, this results indicates that there exist important differences between the categories "professional" and "educated", as the former gave values of much higher significance.

Change in R^2 is roughly one percent in model 6. Considered that the model includes several control variables, this modest change in R^2 is still a noteworthy change. However small, the increment in explained variance is significant, thus collinearity does not seem to be a problem (Russo & Fouts, 1997). The variance inflation factors (VIFs) had a mean below 3 in all mean tests, and under 6 in all individual tests, which indicates that multicollinearity is not a major problem for the model (individual VIF-tests are given in appendix). Although disputed, a common tolerance-level of VIF-values have been set to 10, though many authorities operates with cut-offs as low as 3 or 4 (O'brien, 2007; Sekaran & Bougie, 2013). In any case, most of the VIFs of interest for this paper were comfortably within conservative norms, as shown in table 4 below.

Table 4
Mean VIF-values

EO-perf	M.VIF
Financial inst.	1.34
Access to fin.	1.81
Educ. Growth	1.05
Prof. Growth	1.06

S_gr-perf	M.VIF
Financial inst.	1.34
Access to fin.	1.81
Educ. Growth	1.05
Prof. Growth	1.06

L_gr-perf	M.VIF
Financial inst.	1.34
Access to fin.	1.81
Educ. Growth	1.05
Prof. Growth	1.06

Innov-perf	M.VIF
Financial inst.	1.73
Access to fin.	2.89
Educ. Growth	1.05
Prof. Growth	1.07

Comp-perf	M.VIF
Financial inst.	1.22
Access to fin.	1.31
Educ. Growth	1.05
Prof. Growth	1.05

TABLE 5: VIFs, mean-values

Given the lack of significance in both model 3 and 4, depicting interaction terms of financial resources, the null in both hypothesis 3 and 4 are failed to be rejected. This indicates that, based on findings presented in this paper, financial capacity does not possess predictive powers on the relationship between EO-and performance.

Tables 7 and 8 (given in appendix) displays both EO constituent terms, namely innovativeness and competitive aggressiveness, as independent variables regressed on performance as dependent variable. Between the two, innovativeness was the only variable showing a significant ($p < 0.01$) relation to performance. This discrepancy illustrates that innovativeness and competitive aggressiveness capture different aspects of EO and are not highly correlated (0.03) and with an insignificant Cronbach's alpha (0.29). Surprisingly, of the four interaction terms, education growth was the only variable showing significance ($p < 0.01$) as a moderator, even if the coefficient was minor (-0.04). The cosign of the value was small, but negative! These findings lead towards an understanding that leveraging education might discourage the innovative abilities of the firm, and consequently harming performance.

Table 5

Hierarchical regression results (sales growth)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Control variables	EO	Financial instability	Access to finance	University growth	Pro&skill growth
Control variables						
Constant_	4.10***	1.60	1.58	1.60	1.59	1.49
	(0.87)	(1.15)	(1.15)	(1.15)	(1.15)	(1.16)
Age	-0.11***	-0.10***	-0.10***	-0.10***	-0.10***	-0.10***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.027)	(0.03)
Advertising	0.50	0.42	0.45	0.44	0.43	0.41
	(2.05)	(2.03)	(2.02)	(2.04)	(2.03)	(2.03)
Capacity utilization gr.	0.96***	0.94***	0.93***	0.94***	0.93***	0.93***
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Industry	-0.09	0.38	0.33	0.38	0.39	0.38
	(0.81)	(0.81)	(0.81)	(0.81)	(0.81)	(0.81)
Indep. variable						
EO		1.12***	0.45	1.09*	1.12***	1.87***
		(0.34)	(0.46)	(0.61)	(0.34)	(0.35)
Moderator variable						
# EO*Firm resource			0.91**	0.01	0.01	0.04
			(0.43)	(0.18)	(0.02)	(0.03)
R^2	0.211	0.257	0.237	0.229	0.229	0.321
ΔR^2		0.010	0.001	0.000	0.000	0.002
F-test for ΔR^2	30.29***	10.69***	4.56**	0.01	.060	1.39
Adj. R^2	0.204	0.249	0.226	0.219	0.219	0.221

N = 459

SD (standard errors) in parenthesis

* - p < .10

** - p < .05

*** - p < .01

TABLE 6: Hierarchical regression (sales growth)

Table 6

Hierarchical regression results (labor growth)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Control variables	EO	Financial instability	Access to finance	University growth	Pro&skill growth
Control variables						
Constant_	1.56**	1.16	1.16	1.19	1.20	0.94
	(0.70)	(0.93)	(0.93)	(0.93)	(0.93)	(0.93)
Age	-0.06***	-0.06***	-0.06***	-0.05**	-0.06***	-0.06***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Advertising	3.04*	3.03*	3.03*	3.21*	3.00*	2.99*
	(1.64)	(1.64)	(1.64)	(1.64)	(1.63)	(1.62)
Capacity utilization gr.	0.47***	0.47***	0.47***	0.47***	0.48***	0.45***
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Industry	0.57	0.64	0.64	0.66	0.63	0.64
	(0.64)	(0.65)	(0.66)	(0.65)	(0.65)	(0.65)
Indep. variable						
EO		0.18	0.07	-0.40	0.18	0.31
		(0.28)	(0.38)	(0.49)	(0.28)	(0.28)
Moderator variable						
# EO*Firm resource			0.15	0.21	-0.03*	0.07***
			(0.35)	(0.15)	(0.02)	(0.03)
R^2	0.106	0.106	0.107	0.110	0.112	0.123
ΔR^2		0.001	0.000	0.004	0.006	0.017
F-test for ΔR^2	13.39***	0.42	0.17	2.03	2.84*	8.73***
Adj. R^2	0.098	0.097	0.095	0.099	0.100	0.112

N = 459

SD (standard errors) in paranthesis

* - p < .10

** - p < .05

*** - p < .01

TABLE 7: Hierarchical regression (labor growth)

5 DISCUSSION

The findings indicate that only financial stability and growth in professional workers have a moderating effect on the EO-performance relationship of significance. Breaking down the performance construct, it's clear that these results are linked to different performance measures, as financial instability affected sales growth and growth in professional workers affected labor growth. Furthermore, the findings indicate that intellectual resources influence performance to a greater degree than does financial resources. This is evident as growth in professional workers showed a small but significant change in performance.

Intellectual resources, measured by growth in professional workers was found to be significantly and positively associated with performance. These findings concur with Flamholtz (1985) (as cited in (Wright et al., 1994)), who states that intellectual capital gives at least as good potential for advantages as financial resources. These findings are also in line with findings presented by Hall (1993) where he concludes that employee know-how is one of the most important intangible resources in predicting a firm's success. Empowering the base of knowledge and the specific skill required to establish core competencies in the firm are key to grow sustained competitive advantage, even more so than taking a market perspective (Prahalad & Hamel, 1990). Noteworthy, however, is that merely increasing the stock of educated workers does not seem to stimulate the same results, as education growth showed no significance to performance (except minor significance of labor growth), and thus there seems to be a key difference between these two aspects of intellectual capital. Intuitively, this indicates that performance is stimulated by growing the stock of workers with specific set of knowledge or skills, and not the general education level of the work-force. These findings contradicts Cooper et al. (1994) findings linking higher levels of education to higher levels of performance. Based on these findings, hypothesis 5 are rejected, whilst hypothesis 6 are given support. This distinct difference of importance between these aspects of intellectual capital might be because of a difference in tacit industry know-how providing advantages due to specific knowledge held by professional workers (Cooper et al., 1994). Model 6 assigns significant moderating powers to professional employees, whilst maintaining a high significance level of EO. This is congruent with Zahra (1991) findings linking the specialization of a firms staff to higher association with EO. Industry-specific knowledge also provides better foundation for survival in start-up firms, and might also play a role explaining the above findings (Castrogiovanni, 1996). Moreover, these findings, aligned with the findings of Wiklund and Shepherd (2003) indicate that there's

a two-way positive link connecting EO and knowledge-based resources, as their findings showed that entrepreneurial firms were better at utilizing their pool of knowledge.

Regarding financial resources, access to finance failed to prove any moderating abilities in any of the tables presented. This is surprising, as a large and developed body of literature have previously established this relationship (Brüderl et al., 1992; Cooper et al., 1994; Wiklund, 1999). Specifically, it contradicts Wiklund (1999) claiming that financial capital enhances performance greatly as they have the means to engage in opportunities with positive NPV. It also contradicts Cooper et al. (1994), whose findings show that financially confident firms exhibit more trust by external investors and consequently resulting in higher performance. Subsequently, following this body of literature, financial instability should thus give significant and negative values. Conversely, however, the opposite was observed as financial instability gave positive values on the EO-performance relationship ($p < 0.1$). Empirically, these results indicate that financial instable firms are prone to outperform their financially confident counterparts. However counterintuitive, these findings might be explained by Castrogiovanni (1996) argument stating that financially more well-off firms may suffer from a slack in being proactive. In turn, this might arguably explain the slower growth of such firms. The generally low findings of significance regarding firm resources are notably in line with the initial findings of Miller and Friesen (1982), who found that, for entrepreneurial firms, resources had a negative moderating effect on the performance of entrepreneurial firms. Their suggested explanation for this effect is that highly entrepreneurial firms are more prone to excessively deplete resources on new technology and designs, thus not extracting the resources' full potential.

6 CONCLUSIONS

Research and analysis conducted for this paper leads to a support of previous research stating that EO is positively related to performance. The motivation of this specific study was to examine to what degree specific firm resources moderate the EO-performance relationship. Comparing intellectual and financial resources, findings presented show that intellectual resources is the only significant predictor variable, though with a modest change in explained variance. However, this seems only to be apparent in terms of professional knowledge and skilled workers, thus education in general does not give the same advantage. These findings contribute to the knowledge underlying the O in the VRIO-framework, explaining important nuances within the domain of intellectual resources and its relation to performance. Emphasis are given however, on the limited scope in which performance have been measured, looking

singularly at growth measures of sales and labor. This might, in turn, bias the results favorably in terms of the effect of fostering intellectual capital. Nevertheless, though measured similarly, growth in professional and skilled workers distinctively gave better moderator abilities, as compared to general education. Therefore, the findings are indicating important tendencies.

Finally, financial resources do not seem to moderate the EO-performance relationship in any significant manner. Neither firms experiencing readily access to capital or firms enjoying financial stability managed to provide any moderating abilities of significance.

7 LIMITATIONS

Although providing interesting results contributing to the body of knowledge concerning firm resources' role in the EO-performance relationship, the study suffers from several, and potentially serious, limitations.

First, natural limitations were endured by solely relying on pre-gathered data on firm characteristics, through the Enterprise Surveys. Since both the dependent and independent variables were unidimensional constructs, a variety of variable indicators should preferably be included in both measures. Unfortunately, this was not possible, as only few variables gave information on the firm characteristics of interest. Thus, findings presented in this paper, must be handled with caution, as they do only measure a sub-part of both performance and EO. What's more, performance in this study was solely relying on growth measures. Although following sound literature by doing this (Delmar et al., 2003), other commonly used aspects of performance are simultaneously neglected as a whole. Future research giving weight to other aspects of performance, such as financial accounting measures, are therefore encouraged to develop a more complete picture.

Second, a closer look at the findings reveals that the entire effect intellectual resources have on performance is explained through the labor growth component of performance. This in turn, might explain intuitively why we observe significant observations within this area, as intellectual resources were measured as a growth term. Backward induction leads thus to an intuitive cause-and-effect understanding, as both these variables measure components of the same construct. Rather than enchanting performance, these findings might be explained as "growing the stock of professional workers will lead to a greater stock of workers". Thus, caution should be taken in assigning too much explanatory powers to the effect of hiring professional workers based on this study.

Third, as the data analyzed solely stems from SEMs from the German surveys, the findings cannot be generalizable to a larger area, without great uncertainty. Similar research needs to be conducted in other western industries to gain a cross-country understanding about EO, performance and the effect of firm resources. Even less, are the findings useful in describing dynamics of emerging economies and developing countries outside the western world, as likewise concluded by Brouthers et al. (2015).

Forth, caution is advised when comparing studies of SMEs, as the definition of an SME varies across studies and institutions. In this study, the European Union's definition of SME has been followed, being within the range of 2-250 employees. However, several other definitions are commonly used, including 2–100 (Enterprise Surveys' global methodology) and 2-500 (United States) (Brouthers et al., 2015).

Fifth, few firms reported other than 0 in the dummy variable portraying financial instability. This means that all firms that paid obligations "on time" were classified within the same financial group. At best, this gives a less than optimal distinction between the financial abilities of the firms, as many financially worse-off firms will still be able to pay their obligations on time. Furthermore, it doesn't provide the reasoning for why firms pay overdue. This might too be a source of bias because there are several reasons why firms might pay overdue, other than purely financial shortcomings. Administrational problems, disputed payments and sloppy time management are only but few potential other reasons for paying overdue. However, the variable "access to finance" provides a better predictor of the firm's financial situation, even though it did not give results of significance in the models.

8 FUTURE RESEARCH – RECOMANDATIONS

Given the large sacrifice that was made in this study, on variables representing key aspects in the conceptual framework, further research is therefore encouraged to aim on capturing the totality of the concepts, giving a clearer picture on how firm resourced moderates the EO-performance relationship in SMEs. Furthermore, future research should aim their attention on what specific firm resources that give foundation towards achieving sustained competitive advantage. As these are advantages not easily imitated by competitors, deeper knowledge would therefore also capture managers interest as well as scholarly interest in further contributing to this body of literature.

9 LIST OF REFERENCES

Barney, J. B. (1986). Organizational culture: can it be a source of sustained competitive advantage? *Academy of management Review, 11*(3), 656-665.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of management, 17*(1), 99-120.

Barney, J. B. (1995). Looking inside for competitive advantage. *The Academy of Management Executive, 9*(4), 49-61.

Brouthers, K. D., Nakos, G., & Dimitratos, P. (2015). SME entrepreneurial orientation, international performance, and the moderating role of strategic alliances. *Entrepreneurship Theory and Practice, 39*(5), 1161-1187.

Brüderl, J., Preisendörfer, P., & Ziegler, R. (1992). Survival chances of newly founded business organizations. *American sociological review*, 227-242.

Capon, N., Farley, J. U., & Hoenig, S. (1990). Determinants of financial performance: a meta-analysis. *Management science, 36*(10), 1143-1159.

Cardeal, N., & Antonio, N. S. (2012). Valuable, rare, inimitable resources and organization (VRIO) resources or valuable, rare, inimitable resources (VRI) capabilities: What leads to competitive advantage?

Castrogiovanni, G. J. (1996). Pre-startup planning and the survival of new small businesses: Theoretical linkages. *Journal of management, 22*(6), 801-822.

Cooper, A. C., Gimeno-Gascon, F. J., & Woo, C. Y. (1994). Initial human and financial capital as predictors of new venture performance. *Journal of business venturing, 9*(5), 371-395.

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic management journal, 10*(1), 75-87.

Covin, J. G., & Wales, W. J. (2012). The measurement of entrepreneurial orientation. *Entrepreneurship Theory and Practice, 36*(4), 677-702.

Coyne, K. P. (1986). Sustainable competitive advantage—What it is, what it isn't. *Business Horizons, 29*(1), 54-61. doi:http://dx.doi.org/10.1016/0007-6813(86)90087-X

Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of business venturing, 18*(2), 189-216.

Dess, G. G., Lumpkin, G. T., McNamara, G., & Eisner, A. B. (2014). *Strategic management: Creating Competitive Advantages*: McGraw-Hill Education.

e-channel (Producer). (5.10.2015, 10.4.2017). MC: Predicting Success: Thomas Lumpkin - the Five Qualities of an Entrepreneurial Organization. [Video file] Retrieved from https://www.youtube.com/watch?v=yWBnz7K2MgM

Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. *California management review, 33*(3), 114-135.

Gumpert, D. E., & Stevenson, H. (1985). The heart of entrepreneurship. *Harvard Business Review, 63*(2), 85-94.

Hall, R. (1993). A Framework Linking Intangible Resources and Capabiliites to Sustainable Competitive Advantage. *Strategic management journal, 14*(8), 607-618.

Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial marketing management, 33*(5), 429-438.

Kanter, R. M., North, J., Bernstein, A. P., & Williamson, A. (1990). Engines of progress: Designing and running entrepreneurial vehicles in established companies. *Journal of business venturing, 5*(6), 415-430.

Kimberly, J. R., & Evanisko, M. J. (1981). Organizational innovation: The influence of individual, organizational, and contextual factors on hospital adoption of technological and administrative innovations. *Academy of management journal, 24*(4), 689-713.

Lado, A. A., & Wilson, M. C. (1994). Human Resource Systems and Sustained Competitive Advantage: A Competency-Based Perspective. *The Academy of Management Review, 19*(4), 699-727. doi:10.2307/258742

Lumpkin, G. T., Cogliser, C. C., & Schneider, D. R. (2009). Understanding and measuring autonomy: An entrepreneurial orientation perspective. *Entrepreneurship Theory and Practice, 33*(1), 47-69.

Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of management Review, 21*(1), 135-172.

Lumpkin, G. T., & Dess, G. G. (2001). Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of business venturing, 16*(5), 429-451.

Merchant, K. A., & Van der Stede, W. A. (2012). *Management Control Systems: Performance Measurement, Evaluation and Incentives*: Pearson Education.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management science, 29*(7), 770-791.

Miller, D., & Friesen, P. H. (1982). Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. *Strategic management journal, 3*(1), 1-25.

Mintzberg, H. (1973). Strategy-making in three modes. *California management review, 16*(2), 44-53.

Nahapiet, J., & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage. *The Academy of Management Review, 23*(2), 242-266. doi:10.2307/259373

Nakos, G., Brouthers, K. D., & Brouthers, L. E. (1998). The impact of firm and managerial characteristics on small and medium-sized Greek firms' export performance. *Journal of global marketing, 11*(4), 23-47.

O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity, 41*(5), 673-690.

Peteraf, M. A. (1993). The Cornerstones of Competitive Advantage: A Resource-Based View. *Strategic management journal, 14*(3), 179-191.

Pickton, D. W., & Wright, S. (1998). What's swot in strategic analysis? *Strategic change, 7*(2), 101-109.

Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.

Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation. *Harvard Business Review, 68*(3), 79-91.

Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future. *Entrepreneurship Theory and Practice, 33*(3), 761-787.

Riahi-Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: A study of the resource-based and stakeholder views. *Journal of Intellectual Capital, 4*(2), 215-226. doi:doi:10.1108/14691930310472839

Romanelli, E. (1987). New venture strategies in the minicomputer industry. *California management review, 30*(1), 160-175.

Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of management journal, 40*(3), 534-559.

Sekaran, U., & Bougie, R. (2013). *Research Methods for Business: A Skill-Building Approach. Sixth Edition*. Chichester, United Kingdom: John Wiley & Sons Ltd.

Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of management journal, 48*(3), 450-463.

Surveys, E. Survey Methodology. Available from The World Bank Enterprise Surveys Retrieved 2017, from The World Bank http://www.enterprisesurveys.org/methodology

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal, 5*(2), 171-180.

Wernerfelt, B. (1995). The Resource-Based View of the Firm: Ten Years After. *Strategic management journal, 16*(3), 171-174.

Wiklund, J. (1999). The sustainability of the entrepreneurial orientation--performance relationship. *Entrepreneurship: Theory & Practice, 24*(1), 37-48.

Wiklund, J., & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic management journal, 24*(13), 1307-1314.

Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of business venturing, 20*(1), 71-91.

Wright, P. M., McMahan, G. C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: a resource-based perspective. *International journal of human resource management, 5*(2), 301-326.

Zahra, S. A. (1991). Predictors and financial outcomes of corporate entrepreneurship: An exploratory study. *Journal of business venturing, 6*(4), 259-285.

Zahra, S. A., & Covin, J. G. (1995). Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. *Journal of business venturing, 10*(1), 43-58.

10 APPENDIX

10.1 DERIVING TABLES AND FIGURES

All data used in this paper are downloaded from The World Banks *Enterprise Surveys*, reached at; www.enterprisesurveys.org (requires researcher access). Specifically, the *German Enterprise Survey of 2005* was downloaded and used in the work with this thesis. All data have been analyzed through the statistical software, Stata 14, and tables have been generated through Excel 16. nestreg: reg perf (RnD advert cu_gr service r_invest) (lncomp_press) (comp_af)

10.1.1 STATA-CODES

The below listed set of codes (cleansed), have been used to access all data as presented in this paper. To access the exact same output, insert these codes into Stata, after downloading and opening the Germany 05-dataset, available at www.enterprisesurveys.org (requires user access).

```
* Generating variables to be used in proxy for "dependent variable"; Performance
gen s_gr=q55b1
replace s_gr=0 if q55a1==3
replace s_gr=-s_gr if q55a1==2
label var s_gr "Annualized sales growth, last 36 months"
generate l_gr = (1/3)*(q66a-q66b)/((q66a+q66b)/2)*(100)
label var l_gr "Annualized labor growth, last 36 months"
* Generating dependent variable; Performance
gen perf=(s_gr+l_gr)/2
label var perf "Unidimentional proxy for alpha, including sales- and labor growth"
* Generating control variables
gen age=2005-s1a
gen advert=q58b/q57b
label var advert "Projected spendings on advertising and marketing as fraction of total
sales"
gen cu_gr = (1/3)*(q65a-q65b)/((q65a+q65b)/2)*(100)
label var cu_gr "Estimated growth in use of capacity (facilities/man power) during the last
36 months"
gen industry=.
replace industry = 0 if s3==1
replace industry = 0 if s3==2
replace industry = 0 if s3==3
replace industry =1 if s3==4
replace industry =1 if s3==5
```

```
replace industry =1 if s3==6
replace industry =1 if s3==7
replace industry =1 if s3==8
label var industry "Dummy variable giving industry firms the value of 1"
* Generating variables to be used in "independent variable"; EO
gen comp_press =(q63a+q63b)/2
label var comp_press "Average pressure from domestic and foreign competitors. Increasing
scale"
gen innov1=.
replace innov1=1 if q60a1==1
replace innov1=0 if q60a1==2
label var innov1 "1 if firm have successfully dev. major new prod. line"
gen innov2=.
gen imp_of_innov1=q60b1
replace imp_of_innov1=0 if q60b1==.
label var imp_of_innov1 "Perceived importance of introd. of new product"
* Generating indepentent variable; EO
gen EO=(comp_press+imp_of_innov1)/2
label var EO "Entrepreneurial Orientation, calculated as follows;
(comp_press+imp_of_innov1)/2"
* Generating variables of "firm resources" to be used as interactions
gen f_unst=q31a
replace f_unst=0 if q31a==1
replace f_unst=1 if q31a==2
label var f_unst "Dummy var giving firms value 1 if payed overdue, during the last 36 m."
gen ac_finance=q54a
replace ac_finance=. if q54a==5
label var ac_finance "How problematic access to finance are perceived by the firm,
increasing diff"
generate edu_gr = (1/3)*(q69a4-q69b4)/((q69a4+q69b4)/2)*(100)
label var edu_gr "Growth in eployees with university degree or higher, during last 36 m."
gen prof_gr = (1/3)*((q68a2+q68a3)-
(q68b2+q68b3))/(((q68a2+q68a3)+(q68b2+q68b3))/2)*(100)
label var prof_gr "Growth in professionals and skilled workers, during last 36 m."
* Sorting dataset and deleting all observations with missing values, as defined by variables
above.
sort s4a
drop in 1073/1196
sort s_gr
drop in 1070/1072
sort perf
drop in 1069
sort advert
drop in 1010/1068
sort cu_gr
```

```
63  drop in 1006/1009
64  sort industry
65  sort comp_press
66  drop in 998/1005
67  sort imp_of_innov1
68  sort EO
69  sort f_unst
70  sort ac_finance
71  drop in 997
72  sort edu_gr
73  drop in 513/996
74  sort prof_gr
75  drop in 460/512
76  * Generating interactions/moderator variables between firm resources and EO
77  gen EO_fu= EO* f_unst
78  label var EO_fu "Interaction betw. EO and f_unst"
79  gen EO_af= EO* ac_finance
80  label var EO_af "Interaction betw. EO and ac_finance"
81  gen EO_eg= EO* edu_gr
82  label var EO_eg "Interaction betw. EO and edu_gr"
83  gen EO_pg= EO* prof_gr
84  label var EO_pg "Interaction betw. EO and prof_gr"
85  * Checking Cronbachs' alpha, between sales- and labor growth
86  alpha s_gr l_gr
87  * Checking Croncachs' alpha, between competittive aggressiveness and innovativeness
88  alpha comp_press imp_of_innov1
89  * Running correlation matrix
90  corr age advert cu_gr industry EO EO_fu EO_af EO_eg EO_pg perf
    * Generating hierarchical regression, based on perf as dep var and EO as indep var.
91  Checking for multicollinearity
92  nestreg: reg perf (age advert cu_gr industry ) (EO) ( EO_fu)
93  vif
94  nestreg: reg perf (age advert cu_gr industry ) (EO) ( EO_af )
95  vif
96  nestreg: reg perf (age advert cu_gr industry ) (EO) ( EO_eg )
97  vif
98  nestreg: reg perf (age advert cu_gr industry ) (EO) ( EO_pg )
99  vif
100 nestreg: reg perf (age advert cu_gr industry ) (EO)
    * Generating hierarchical regression, based on s_gr as dep var and EO as indep var.
101 Checking for multicollinearity
102 nestreg: reg s_gr (age advert cu_gr industry ) (EO) ( EO_fu)
103 vif
104 nestreg: reg s_gr (age advert cu_gr industry ) (EO) ( EO_af )
```

```
vif
nestreg: reg s_gr (age advert cu_gr industry ) (EO) ( EO_eg )
vif
nestreg: reg s_gr (age advert cu_gr industry ) (EO) ( EO_pg )
vif
* Generating hierarchical regression, based on l_gr as dep var and EO as indep var.
Checking for multicollinearity
nestreg: reg l_gr (age advert cu_gr industry ) (EO) ( EO_fu)
vif
nestreg: reg l_gr (age advert cu_gr industry ) (EO) ( EO_af )
vif
nestreg: reg l_gr (age advert cu_gr industry ) (EO) ( EO_eg )
vif
nestreg: reg l_gr (age advert cu_gr industry ) (EO) ( EO_pg )
vif
* Generating interactions/moderator variables between firm resources and innovativeness
gen innov_fu = imp_of_innov1*f_unst
label var innov_fu "Interaction betw. imp_of_innov1 and f_unst"
gen innov_af = imp_of_innov1*ac_finance
label var innov_af "Interaction betw. imp_of_innov1 and ac_finance"
gen innov_eg = imp_of_innov1*edu_gr
label var innov_eg "Interaction betw. imp_of_innov1 and edu_gr"
gen innov_pg = imp_of_innov1*prof_gr
label var innov_pg "Interaction betw. imp_of_innov1 and prof_gr"
* Generating correlation matrix on innovativeness as independent variable
corr age advert cu_gr industry imp_of_innov1 innov_fu innov_af innov_eg innov_pg perf
* Generating hierarchical regressions, based on innovativeness as independent variable,
checking for multicollinearity
nestreg: reg perf (age advert cu_gr industry ) (imp_of_innov1) ( innov_fu )
vif
nestreg: reg perf (age advert cu_gr industry ) (imp_of_innov1) ( innov_af )
vif
nestreg: reg perf (age advert cu_gr industry ) (imp_of_innov1) ( innov_eg )
vif
nestreg: reg perf (age advert cu_gr industry ) (imp_of_innov1) ( innov_pg )
vif
* Generating interactions/moderator variables between firm resources and competitive
aggressiveness
gen comp_fu = comp_press*f_unst
label var comp_fu "Interaction betw. comp_press and f_unst"
gen comp_af = comp_press*ac_finance
label var comp_af "Interaction betw. comp_press and ac_finance"
gen comp_eg = comp_press*edu_gr
label var comp_eg "Interaction betw. comp_press and edu_gr"
gen comp_pg = comp_press*prof_gr
```

```
label var comp_pg "Interaction betw. comp_press and prof_gr"
* Generating correlation matrix on competitive aggressiveness as independent variable
corr age advert cu_gr industry comp_press comp_fu comp_af comp_eg comp_pg perf
* Generating hierarchical regression, based on competitive aggressiveness as independent var. Checking for multicollinearity
nestreg: reg perf (age advert cu_gr industry ) (comp_press) ( comp_fu )
vif
nestreg: reg perf (age advert cu_gr industry ) (comp_press) ( comp_af )
vif
nestreg: reg perf (age advert cu_gr industry ) (comp_press) ( comp_eg )
vif
nestreg: reg perf (age advert cu_gr industry ) (comp_press) ( comp_pg )
vif
```

10.2 ADDITIONAL REGRESSIONS

Table 7

Hierarchical regression results (innovativeness)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Control variables	EO	Financial instability	Access to finance	University growth	Pro&skill growth
Control variables						
Constant_	2.83***	2.23***	2.21***	2.16***	2.19***	2.23***
	(0.62)	(0.66)	(0.66)	(0.66)	(0.66)	(0.67)
Age	-0.08***	-0.8***	-0.08***	-0.8***	-0.08***	-0.08***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.19)
Advertising	1.77	1.77	1.84	1.88	1.74	1.77
	(1.46)	(1.45)	(1.45)	(1.45)	(1.44)	(1.45)
Capacity utilization gr.	0.71***	0.70***	0.70***	0.70***	0.70***	0.70***
	(0.07)	(0.07)	(0.07)	(0.72)	(0.07)	(0.07)
Industry	0.24	0.42	0.47	0.45	0.48	0.42
	(0.57)	(0.58)	(0.58)	(0.57)	(0.57)	(0.58)
Indep. variable						
Innovativeness		0.35**	0.08	-0.28	0.39***	0.35**
		(0.14)	(0.25)	(0.36)	(0.14)	(0.15)
Moderator variable						
# Innov*Firm resource			0.38	0.24*	-0.04***	-0.00
			(0.28)	(0.13)	(0.02)	(0.02)
R^2	0.233	0.243	0.246	0.249	0.255	0.243

ΔR^2		0.01	0.000	0.01	0.012	0.000
F-test for ΔR^2	34.45***	5.92**	1.84	3.63*	7.11***	0.01
Adj. R^2	0.226	0.234	0.236	0.239	0.245	0.233

N = 459

SD (standard errors) in paranthesis

* - p < .10

** - p < .05

*** - p < .01

TABLE 8: Hierarchical regression (innovativeness)

Table 8

Hierarchical regression results (competitive aggressiveness)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Control variables	EO	Financial instability	Access to finance	University growth	Pro&skill growth
Control variables						
Constant_	2.83***	1.33	1.52	1.33	1.31	1.47
	(0.62)	(1.13)	(1.13)	(1.13)	(1.31)	(1.12)
Age	-0.08***	-0.08***	-0.09***	-0.08***	-0.08***	-0.08***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Advertising	1.77	1.69	1.65	1.69	1.70	1.70
	(1.46)	(1.46)	(1.46)	(1.47)	(1.46)	(1.44)
Capacity utilization gr.	0.71***	0.72***	0.71***	0.72***	0.71***	0.70***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Industry	0.24	0.41	0.29	0.41	0.42	0.28
	(0.57)	(0.58)	(0.59)	(0.58)	(0.58)	(0.58)
Indep. variable						
Competitive aggr.		0.55	0.17	0.55	0.55	0.49
		(0.35)	(0.42)	(0.46)	(0.35)	(0.34)
Moderator variable						
# Comp*Firm resource			0.42	-0.00	0.00	0.05***
			(0.27)	(0.10)	(0.01)	(0.01)
R^2	0.233	0.237	0.241	0.237	0.237	0.253
ΔR^2		0.004	0.004	0.000	0.000	0.016
F-test for ΔR^2	34.45	2.51	2.41	0.00	0.16	9.76***
Adj. R^2	0.226	0.229	0.231	0.227	0.227	0.243

N = 459

SD (standard errors) in paranthesis

* - p < .10
** - p < .05
*** - p < .01

TABLE 9: Hierarchical regression (competitive aggressiveness)

10.3 VIF-TABLES

Below are listed all individual VIF-values from the Stata output. Generally, all VIFs are low. The highest values are found under the Innovation – Performance regression, moderated by the education growth variable, giving values up to 6.55.

Table 9
Individual VIF-values

EO-perf (fu)	VIF	**EO-perf (af)**	VIF	**EO-perf (eg)**	VIF	**EO-perf (pg)**	VIF
EO	1.93	EO_af	3.31	age	1.10	age	1.10
EO_fu	1.88	EO	3.30	industry	1.10	industry	1.10
age	1.10	age	1.13	EO	1.05	EO	1.08
industry	1.10	industry	1.10	cu_gr	1.04	cu_gr	1.04
cu_gr	1.03	cu_gr	1.03	advert	1.01	EO_pg	1.03
advert	1.01	advert	1.02	EO_eg	1.01	advert	1.01
Mean VIF	1.34	Mean VIF	1.81	Mean VIF	1.05	Mean VIF	1.06

EO-S_gr (fu)	VIF	**EO-S_gr (af)**	VIF	**EO-S_gr (eg)**	VIF	**EO-S_gr (pg)**	VIF
EO	1.93	EO_af	3.31	age	1.10	age	1.10
EO_fu	1.88	EO	3.30	industry	1.10	industry	1.10
age	1.10	age	1.13	EO	1.05	EO	1.08
industry	1.10	industry	1.10	cu_gr	1.04	cu_gr	1.04
cu_gr	1.03	cu_gr	1.03	advert	1.01	EO_pg	1.03
advert	1.01	advert	1.02	EO_eg	1.01	advert	1.01
Mean VIF	1.34	Mean VIF	1.81	Mean VIF	1.05	Mean VIF	1.06

EO-L_gr (fu)	VIF	**EO-L_gr (af)**	VIF	**EO-L_gr (eg)**	VIF	**EO-L_gr (pg)**	VIF
EO	1.93	EO_af	3.31	age	1.10	age	1.10
EO_fu	1.88	EO	3.30	industry	1.10	industry	1.10
age	1.10	age	1.13	EO	1.05	EO	1.08
industry	1.10	industry	1.10	cu_gr	1.04	cu_gr	1.04
cu_gr	1.03	cu_gr	1.03	advert	1.01	EO_pg	1.03
advert	1.01	advert	1.02	EO_eg	1.01	advert	1.01
Mean VIF	1.34	Mean VIF	1.81	Mean VIF	1.05	Mean VIF	1.06

Innov-perf (fu)	VIF	**Innov-perf (af)**	VIF	**Innov-perf (eg)**	VIF	**Innov-perf (pg)**	VIF
Innov.	3.07	Innov._af	6.55	age	1.11	age	1.11
Innov._fu	3.06	Innov.	6.54	industry	1.09	Innov.	1.10
age	1.11	age	1.11	Innov.	1.05	industry	1.09
industry	1.09	industry	1.09	cu_gr	1.03	Innov._pg	1.06
cu_gr	1.03	cu_gr	1.03	advert	1.01	cu_gr	1.03
advert	1.01	advert	1.02	Innov._eg	1.01	advert	1.01
Mean VIF	1.73	Mean VIF	2.89	Mean VIF	1.05	Mean VIF	1.07

Comp-perf (fu)	VIF	**Comp-perf (af)**	VIF	**Comp-perf (eg)**	VIF	**Comp-perf (pg)**	VIF
Comp.	1.55	Comp.	1.81	industry	1.11	industry	1.11
Comp._fu	1.50	Comp._af	1.80	age	1.09	age	1.09
industry	1.13	age	1.12	Comp.	1.04	Comp.	1.04
age	1.09	industry	1.11	cu_gr	1.04	cu_gr	1.04
cu_gr	1.03	cu_gr	1.03	advert	1.01	Comp._pg	1.02
advert	1.02	advert	1.02	Comp._eg	1.01	advert	1.01
Mean VIF	1.22	Mean VIF	1.31	Mean VIF	1.05	Mean VIF	1.05

TABLE 10: VIFs, individual variable values

10.4 USED QUESTIONS FROM ES SURVEY

Listed below are all the questions from the 2005 German enterprise survey, that were used in the making of this paper. All questions are displayed as they were framed to the respondents and column-names are kept as they appear in the dataset. Note, however, that the listed questions below only accounts for a small fraction of the total amount of questions in the survey.

S.3	How would you best describe your firm's main area of activity in terms of annual sales? **ONLY ONE ANSWER ALLOWED**

		ISIC DIVISION	s3 120-121
CHECK INDUSTRY QUOTA	Mining and quarrying	Section C: 10-14	01
	Construction	Section F: 45	02
	Manufacturing	Section D: 15-37	03
CHECK SERVICES QUOTA	Transport storage and communication	Section I: 60-64	04
	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	Section G: 50-52	05
	Real estate, renting and business services	Section K: 70-74	06
	Hotels and restaurants	Section H: 55	07
	Other services***	Section O: See note	08
TERMINATE	Health, education, welfare		
	Government agency, public administration		
	Agriculture, hunting, forestry, fishing		
	Electricity, gas, water and waste water		
	Financial intermediation		

***Other services include the following:
Motion picture and video activities, radio and television activities, other entertainment activities, news agency activities, washing and dry cleaning, hairdressing, funeral and related activities, other service activities

S.4	How many full-time employees work for this company today?

		S4a 129	s4b 130
THANK & TERMINATE	None		
	1		
CHECK SIZE:"SMALL FIRM" QUOTA	2-10	1	1
	11-49	2	
CHECK SIZE:"MEDIUM SIZE FIRM "QUOTA	50-99	3	2
	100-249	4	
CHECK SIZE:"LARGE SIZE FIRM "QUOTA	250-499	5	3
	500-999	6	
	1000-9999	7	
THANK & TERMINATE	10,000 or more		

Q.31a	Have you had to resolve an overdue payment in the last 36 months?

		Q31a 508
GO TO Q.31b	Yes	1
GO TO Q.31d	No	2

Q.54	Can you tell me how problematic are these different factors for the operation and growth of your business.

- **INTERVIEWER: SHOW CARD: 21**

	No obstacle	Minor obstacle	Moderate obstacle	Major obstacle	Don't Know		
Access to financing (e.g., collateral required or financing not available from banks)	1	2	3	4	5	**1108**	**Q54a**

Q.55	Over the last 36 months how have the following changed (increased/decreased) and what is the percent of change for your company, in real terms (i.e., after allowing for inflation):

	Increase	Decrease	No change			% change		
Sales	1	2	3	**1131**	**Q55a1**	%	**1132-1134**	**Q55b1**

Q.58	Could you please tell me how much your firm is projected to spend in 2004 on each of the following:

	Local currency (000's)	EUROS (000's)	
New buildings, machinery and equipment			**Q58a 1229-1235**
Research and development (including wages and salaries of R&D personnel, materials, R&D related education and training costs)			**Q58b 1236-1242**
Advertising and marketing (including wages and salaries for in-house advertising & marketing personnel)			**Q58c 1243-1249**

Q.59	What percentage of your total profits earned in 2003 were or will be invested in the firm in 2004?

		Q59a
…..…….. ..%		**1250-1252**
		Q59b
No profit in 2003	1	**1253**

Q.60	Has your company undertaken any of the following initiatives over the last 36 months? **INTERVIEWER: FOR EACH INITIATIVE ANSWERED "YES" ASK**: And how important in retrospect was this initiative for the survival and/or growth of your company over that period?

- **INTERVIEWER: SHOW CARD: 22**
- **Not important: 1, Slightly important: 2, Fairly important: 3, Very important: 4, Extremely important: 5, Don't know: 6**

	Undertaken				How important		
	Yes	No					
Developed successfully a major new product line	1	2	**1254**	**Q60a1**	1 2 3 4 5 6	**1262**	**Q60b1**

Q.63	How would you rate the importance of each of the following factors on key decisions about your business with respect to "Developing new products or services and markets":

- **INTERVIEWER: SHOW CARD: 25**

	Not at all important	**Slightly important**	**Fairly important**	**Very important**	**Don't Know**		
Pressure from domestic competitors	1	2	3	4	5	**1309**	**Q63a1**
Pressure from foreign competitors	1	2	3	4	5	**1310**	**Q63a2**
Pressure from customers	1	2	3	4	5	**1311**	**Q63a3**

Q.65	In your judgement, what is your firm's current output in comparison with the maximum output possible using its facilities/man power at the time? If you are using the facilities/man power to the full, answer 100%; if output was 60% of capacity, answer 60%. What was the capacity utilisation 36 months ago?

	Current capacity of utilisation	Q65a	Capacity utilisation 36 months ago	Q65b
Level of utilisation of facilities/man power	%	1315-1317	%	1318-1320

Q.66	How many permanent, full-time employees does your firm have now and how many did it have 36 months ago? (give an estimate number)

Now	Q66a	36 months ago	Q66b
	1321-1324		1325-1328

Q.68	What percentage of your current permanent, full-time workers are managers, professionals, skilled workers, unskilled workers or non-production workers? What was the percentage 36 months ago?

	Now			36 months ago		
Managers (excluding those involve in shop floor supervision)	%	1337-1339	Q68a1	%	1352-1354	
Professionals (e.g., accountants, engineers, scientists)	%	1340-1342	Q68a2	%	1355-1357	
Skilled workers	%	1343-1345	Q68a3	%	1358-1360	
Unskilled workers	%	1346-1348	Q68a4	%	1361-1363	
Non-production workers (e.g., administration, sales)	%	1349-1351	Q68a5	%	1364-1366	

Q.69	What percentage of the workforce at your firm has education levels up to primary school, a vocational qualification, a secondary school qualification or some university education? What was the percentage in 36 months ago?

	Now			36 months ago		
Up to primary school	%	1408-1410	Q69a1	%	1420-1422	
Vocational qualification	%	1411-1413	Q69a2	%	1423-1425	
Secondary school qualification	%	1414-1416	Q69a3	%	1426-1428	
Some university education or higher	%	1417-1419	Q69a4	%	1429-1431	
CHECK THAT THE TOTALS ARE		100%			100%	

10.5 REFLECTION NOTE

The focus of my master thesis has been to determine what effect firm resources have on the relationship between entrepreneurial orientation and performance in SMEs. By looking at variables representing financial and intellectual resources, hierarchical regressions were run to measure potential effects of the resources. Findings presented in the thesis demonstrate that firm resources do moderate the EO – performance relationship in a positive manner. Noteworthy, however, is that intellectual capital showed significantly stronger predictive powers than did financial resources. Increasing the number of skilled and professional workers seems to have predictive positive impact on performance. The same goes for increasing the educated base of the employees, thus this is noteworthy not as significant. Although supported by a broad base of theory, findings only gave minor values of significance when accounting for financial resources. Thus, findings presented in the paper indicates that financial more well-off firms do not systematically outperform those with harder access to finance and capital.

Within business, the school of strategy and innovation have been given steadily more attention during the last 30 years. Tendencies in research concerning organizational trends and development, indicate that entrepreneurial orientation are being more and more acknowledged by scholars and businesses as an important aspect of the business. Thus, understanding what factors that are moderating this relationship is highly important. Environmental factors have been given some attention during later years, with work exploring variables such as industry characteristics and complexity. However, organizational factors have not been as thoroughly examined. Therefore, research such as this, where specific factors within the organizational domain are studied, will provide a better understanding of the EO-performance relationship.

In a progressively more competitive environment, where the marketplace is pushed more towards the neoclassical equilibrium of price of product equals cost of production. In such environments, knowledge on what firm characteristics that may provide a sustained competitive advantage, may serve extremely useful in meeting fierce competitive environments of both new and established firms.

Concerning innovation, potential area of new developments might be consulting business oriented around giving support and advice concerning what resources a business should employ. Businesses are dynamic and require a custom set of tangible and intangible resources. Knowledge on topics related to entrepreneurial orientation are not commonplace by business leaders in general. Therefore, providing key insight on such issues could be sustainable for the

development of an establishment. Other than establishing a consulting business providing knowledge on the above topic, I see no specific relevance for establishments of individual firms.

Regarding responsibility, it's important to bear in mind that laws regulating competition must be followed, regardless of the knowledge gained through research on sustained competitive advantage. What's more, building encouragement under firms' abilities to be innovative and continuously developing new ideas and products, attention should also be minded on the potential damaging environmental effects this can lead to. By focusing on a sustainable allocation of resources potential negative effects might thus be mitigated.