

**REPUBLIC OF TURKEY
ÇUKUROVA UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION**

**ENTREPRENEURIAL ORIENTATION AND BUSINESS PERFORMANCE:
AN INTEGRATIVE MODEL PROPOSITION AND EMPIRICAL ANALYSIS**

Osama ELBELBESSI

A Ph.D DISSERTATION

ADANA / 2018

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To Directorate of Çukurova University Social Sciences Institute:

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Osama ELBELBESSI

ABSTRACT**ENTREPRENEURIAL ORIENTATION AND BUSINESS PERFORMANCE:
AN INTEGRATIVE MODEL PROPOSITION AND EMPIRICAL ANALYSIS****Osama ELBELBESSI****Dissertation for the Degree of Doctor of Philosophy, Department of Business
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This study aimed to examine the level of entrepreneurial orientation (EO) of 128 medium-sized manufacturing companies in Adana, and its potential influence on their performance. A study model consisted of business strategy, organizational structure, environmental uncertainty, firm resources, industry life cycle, and firm performance was developed based on previous researches. The impact of each of business strategy, organizational structure, environmental uncertainty, firm resources, and industry life cycle on both entrepreneurial orientation and on EO-firm performance was investigated separately. Research findings suggest that entrepreneurial oriented firms perform better than conservative firms. Moreover, organizational structure, environmental dynamism and hostility, and non-financial resources had impact on the level of entrepreneurial orientation in the manufacturing companies. Research findings suggest that environmental hostility has a moderation affect in the relationship between entrepreneurial orientation and firm performance. Thus, in benign environments the EO and relative competitive performance relationship will be stronger. Entrepreneurial firms are also more likely to be prospectors and analyzers rather than reactors. Prospectors perform better than reactors.

Keywords: Entrepreneurial Orientation, Business Strategy, Organizational Structure, Environmental Uncertainty, Firm Resources, Industry Life Cycle, Firm Performance.

ÖZET

GİRİŞİMCİLİK YÖNELİMİ VE İŞLETME PERFORMANSI: BÜTÜNLEŞTİRİCİ MODEL ÖNERİSİ VE AMPİRİK BİR ÇALIŞMA

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Bu çalışmada, işletmelerin girişimcilik yönelimi ile işletme performansı arasındaki ilişkinin incelenmesi amaçlanmıştır. Çalışmada, daha önceki yazından yola çıkarak işletme stratejisi, organizasyon yapısı, çevresel belirsizlik, firma kaynakları, endüstri yaşam döngüsü ve firma performansı kavramlarının oluşturduğu kuramsal bir model geliştirilmiştir. Rekabet stratejilerinin, organizasyon yapısının, çevresel belirsizliğin, firma kaynaklarının ve işletmenin ürettiği ürünlerin endüstri yaşam döngüsündeki yerinin hem girişimcilik yönelimi hem de girişimcilik yönelimi ve işletme performansı ilişkisi üzerindeki etkileri ayrı ayrı incelenmiştir. Araştırma sonuçları girişimcilik yönelimi olan işletmelerin muhafazakâr firmalara göre daha iyi performans sergilediğini göstermektedir. Ayrıca, örgüt yapısı, örgüt çevresi ve firma kaynakları imalat işletmelerinin girişimcilik yönelimini etkilemektedir. Çevresel düşmanlık/tehlikenin girişimcilik yönelimi ve performans ilişkisinde düzenleyici rolü bulunmaktadır. Buna göre, daha tehlikesiz çevrelerde girişimcilik yönelimi ve performans ilişkisi daha güçlü olacaktır. Girişimcilik yönelimi yüksek firmalar tepkici tipolojiden çok atılgan ve analizci tipolojide olmaktadır. Atılgan tipolojideki firmalar tepkici tipolojideki firmalardan daha iyi performans göstermektedirler.

Anahtar Kelimeler: Girişimcilik Yönelimi, İşletme Stratejisi, Organizasyon Yapısı, Çevresel Belirsizlik, Firma Kaynakları, Endüstriyel Yaşam Döngüsü, Firma Performansı.

GENİŞLETİLMİŞ ÖZET

GİRİŞİMCİLİK YÖNELİMİ VE İŞLETME PERFORMANSI: BÜTÜNLEŞTİRİCİ MODEL ÖNERİSİ VE AMPİRİK BİR ÇALIŞMA

GİRİŞ

Araştırma Amacı ve Önemi

Bu araştırmanın amacı, orta ölçekli işletmelerde girişimcilik yönelimi ve firma performansı ilişkisi üzerindeki yazına katkıda bulunmaktır. Bu amaca yönelik olarak, girişimcilik yönelimi-firma performansı ilişkisi için bütünleyici bir model önerilmiştir. Bu model, bazı örgütsel (işletme stratejisi, organizasyon yapısı, firma kaynakları gibi) ve bağlamsal değişkenlerin (çevresel belirsizlik, endüstri yaşam döngüsü gibi) girişimcilik yönelimi ile girişimcilik yönelimi ve firma performansı arasındaki ilişkiyi nasıl etkileyebileceğine dair anlayışımıza katkıda bulunmaktadır.

Mevcut yazın, girişimcilik yöneliminin firma verimliliğini ve performansını artıran en önemli unsurlar arasında olduğunu göstermektedir (Uddin, Bose ve Yousuf, 2015). Bazı çalışmalar, girişimcilik yönelimi ve firma performansı arasında pozitif bir ilişki olduğunu bildirirken, diğerleri bu ilişkiyi büyük olasılıkla büyüklük, organizasyon yapısı, işletme stratejisi, strateji oluşturma süreçleri, firma kaynakları, kültür ve üst yönetim takım özellikleri gibi örgütsel değişkenlerle dinamizm, karmaşıklık ve endüstri gibi bağlamsal değişkenlerin etkilerinden dolayı tam anlamıyla açıklayamamaktadır. Az sayıdaki çalışmada ise farklı örgütsel ve bağlamsal faktörlerin girişimcilik yönelimi-firma performansı üzerindeki düzenleyici ve aracı etkileri ayrı ayrı incelenmekle birlikte bu ilişkileri bütünleştiren kuramsal bir model için henüz bir fikir birliği oluşmamıştır. Ayrıca, önceki araştırmalar ağırlıklı olarak gelişmiş piyasa firmalarına odaklanmış, ancak gelişmekte olan piyasa firmalarına daha az odaklanmıştır. Bu nedenle, bu çalışma en az iki nedenden dolayı önemlidir. İlk olarak, gelişmekte olan bir pazar bağlamında girişimcilik yönelimi-firma performansı ilişkilerini inceler. İkincisi, girişimcilik yönelimi-firma performansının değerlendirilmesinde, işletme stratejisi, organizasyon yapısı, çevresel

belirsizlik, endüstri yaşam döngüsü ve firma kaynakları gibi çeşitli organizasyonel ve bağlamsal faktörleri ele alır.

Araştırma Sorusu

Girişimcilik araştırmacıları, girişimcilik yöneliminin nasıl ve neden oluştuğunu açıklamak için bireysel, örgütsel veya çevresel bakış açılarıyla alternatif perspektifler geliştirmişlerdir (Lumpkin ve Dess, 1996). Bu perspektifler ışığında bu araştırmaya yön veren araştırma sorusu aşağıdaki biçimde ifade edilmiştir. İşletme stratejisinin, organizasyon yapısının, çevrenin, endüstri yaşam döngüsünün ve firma kaynaklarının her biri ne derece girişimcilik yönelimi ile ilişkilendirilebilir? İşletme stratejisi, organizasyon yapısı, çevre, endüstri yaşam döngüsü ve firma kaynakları girişimcilik yönelimi-firma performans ilişkisini etkiler mi?

ARAŞTIRMANIN YÖNTEMİ

Araştırma Modeli

Birçok araştırma, girişimcilik konusunda yaygın olarak kabul gören kuramsal bir modelin eksikliğinden bahsetmektedir (Beaver ve Jennings, 2005). Bu araştırmada, Covin ve Slevin (1991), Lumpkin ve Dess (1996, 2001), Moreno ve Casillas (2008), Slotwinski (2010), ve Anderson ve Eshima (2013) gibi önceki araştırmalara dayanarak, girişimcilik yönelimi, işletme stratejisi, organizasyon yapısı, çevresel belirsizlik, endüstri yaşam döngüsü ve firma kaynakları arasındaki potansiyel ilişkiler incelemek için araştırma modeli oluşturulmuştur.

Veri Toplama

Adana'da faaliyet gösteren orta ölçekli işletmelerin tam listesi Adana Sanayi Odası'ndan temin edilmiştir. Araştırma için veri toplama sürecinin etkinliğini ve kalitesini arttırmak için hizmet alımına gidilmiştir. Bunun için araştırma tekniklerinde oldukça deneyimli bir araştırma firması seçilmiştir. Anket formu kullanılarak işletmelerden girişimcilik yönelimi, işletme stratejisi, örgütsel yapıları, üretimlerinin endüstri yaşam döngüsündeki evresi, çevresel belirsizlik, firma kaynakları ve firma performansı ile ilgili

veri toplanmıştır. Anket formunda yer alan sorulara üst kademe yöneticiler (firma sahibi, genel müdür, yönetim kurulu başkanı vb.) ile orta kademe yöneticilerin (üretim, tedarik, pazarlama, ve araştırma ve geliştirme müdürleri) en doğru cevapları verebileceği düşünülmüş ve her firmadan bu profildeki bir yöneticinin cevap vermesi yeterli görülmüştür. Adana’da faaliyet gösteren orta ölçekli imalat şirketleri üzerine yapılan anket çalışması, Ekim-Aralık 2018 tarihleri arasında toplam üç ay süre içerisinde tamamlanmıştır.

Veri Analizi

Toplanan veriler, SPSS 25 programı kullanılarak analiz edilmiştir. İlk olarak, girişimcilik yönelimi, iş stratejisi, organizasyon yapısı, çevresel belirsizlik, endüstri yaşam döngüsü, firma kaynakları ve firma performansı arasındaki ilişkileri açıklamak için Pearson korelasyon analizi kullanılmıştır. İkinci olarak, firma büyüklüğü, firma yaşı, sektör, işletme stratejisine göre işletmelerin girişimcilik yönelimi seviyesi ve firma performansının farklılaşp farklılaşmadığını incelemek için bağımsız örneklem T-testi, tek yönlü varyans analizi (ANOVA) ve Welch ve Brown-Forsythe testleri gerçekleştirilmiştir. Üçüncü olarak, girişimcilik yönelimi-firma performansı ve iş stratejisi-firma performansı ilişkilerini ve organizasyon yapısının, çevresel belirsizliğin, endüstri yaşam döngüsünün ve firma kaynaklarının girişimcilik yönelimi-firma performansı ilişkisi üzerindeki etkilerini incelemek için hiyerarşik regresyon analizi yapılmıştır. Dördüncü, girişimcilik yöneliminin iş stratejisi türü üzerindeki etkisini multinominal lojistik regresyon analiziyle incelenmiştir.

SONUÇ

Araştırma sonuçları, ilk olarak, orta ölçekli imalat işletmelerinin orta seviyede girişimcilik yönelimine sahip olduğunu göstermektedir. İkinci olarak, girişimcilik yönelimi ile genel performans/amaç yerine getirme arasındaki ilişki eğrisel değil doğrusal bir ilişkidir. Üçüncü olarak, işletmelerin girişimcilik yöneliminin, genel performanslarını ve örgütsel amaçlarını gerçekleştirme üzerinde olumlu etkisi bulunmakta ancak satışlar, kar ve pazar payında artışı ölçen göreceli rekabet performansı üzerinde etkisi bulunmamaktadır. Dördüncü olarak, önceki çalışmaların çoğunun da onaylandığı gibi girişimcilik yönelimi yüksek firmaların Miles ve Snow’un (1978) tipolojisindeki atılgan ve analizci firma

tipolojisine girdikleri gözlenmiştir. Beşinci olarak, organik yapıya sahip işletmelerin girişimcilik yönelimin mekanik yapıya sahip olanlara göre daha yüksek olduğu görülmüştür. Altıncı olarak, dinamik/istkrarlı ve ılımlı/düşmanca boyutlarında incelendiğinde dinamik çevrede faaliyet gösteren işletmelerin istikrarlı çevrede faaliyet gösterenlere göre, ılımlı çevrede faaliyet gösteren işletmelerin de düşmanca çevrede faaliyet gösterenlere göre girişimcilik yönelimlerinin daha yüksek olduğu görülmüştür. Yedinci olarak, araştırma sonuçları, çevresel belirsizliğin (çevresel dinamizm, çevresel heterojenlik ve çevresel düşmanlık), girişimcilik yönelimi ve amaç yerine getirme/genel performans arasındaki ilişkiyi hiçbir şekilde etkilemediği görülmüştür. Ancak, çevresel düşmanlık, girişimcilik yönelimi ile göreceli rekabetçi performans arasındaki ilişkiyi olumsuz yönde etkilemektedir. Sekizinci olarak, firma kaynakları ile işletmelerin girişimcilik yönelimi arasında anlamlı ve olumlu yönde ilişki bulunmaktadır. Finansal kaynakların girişimcilik yönelimini etkilediğine yönelik bir bulgu elde edilememiş olmakla birlikte, teknolojik, servis, sistem, yetenekler şeklinde sınıflandırılan finansal olmayan kaynakların daha fazlasına sahip imalat işletmelerinin diğerlerine göre girişimcilik yöneliminin daha yüksek olduğu görülmüştür. Benzer şekilde, firma kaynakları, girişimcilik yönelimi ve firma performansı arasındaki ilişkiyi etkilememektedir. Dokuzuncu olarak, endüstri yaşam döngüsünün girişimcilik yönelimi ve işletmelerin girişimcilik yönelimi-performans ilişkisi üzerinde hiçbir etkisi yoktur. Sonuncu olarak, bağımsız aile işletmelerinin girişimcilik yöneliminin diğer işletmelerden daha düşük olduğu görülmüştür. Bu bulguların bundan sonra yapılacak görgül araştırmalar için ilginç araştırma sorularına ilham vermesi beklenmektedir.

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Entrepreneurial orientation and its influence on firm performance was an attractive subject especially in Turkey since few studies addressed this subject. This dissertation examined the entrepreneurial orientation-firm performance relationship in medium-sized manufacturing companies in the presence of various organizational and contextual factors including business strategy, organizational structure, environmental uncertainty, industry life cycle, and firm resources. The research lasted for 2 years. During this period, the extant literature on EO-firm performance was reviewed and hypotheses were developed. Data was collected from 128 medium-sized manufacturing companies located in Adana, Turkey. In order to test the proposed relationships, the analyses were conducted through SPSS 25.

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CHAPTER I

INTRODUCTION

1.1. Research Purpose

The aim of this research is to contribute to the extant literature on entrepreneurial orientation (EO), and firm performance relationship in medium-sized enterprises. In order to do this, an integrative model for EO-firm performance relationship is proposed. This model contributes to our understanding of how some organizational (such as business strategy, organizational structure, firm resources) and contextual variables (such as environmental uncertainty, industry life cycle) may simultaneously affect EO, and the relationship between EO and firm performance.

1.2. Research Significance

The extant literature suggests that EO is among the most significant factors that enhance firm productivity and performance (Uddin, Bose, & Yousuf, 2015). While some studies report a positive relationship between EO and firm performance, others fail to prove this relationship probably because of the differing effects of the various organizational (such as size, structure, strategy, strategy-making processes, firm resources, culture, and top management team characteristics) and contextual (such as, dynamism, munificence, complexity, and industry) factors (Lumpkin & Dess, 1996; Wiklund & Shepherd, 2005). Considering the few studies investigated the moderating and mediating impacts of different organizational and contextual factors on EO-firm performance separately, it is noticeable there is no consensus for an ideal integrative model that completely illustrates these relationships. Besides, previous research focused mostly on advanced market firms but less on emerging market firms. Thus, this study is significant for at least two reasons. First, it examines the EO-firm performance relations in an emerging market context. Second, it considers several organizational and contextual factors such as business strategy, organizational structure, environmental uncertainty, industry life cycle, and firm resources.

1.3. Research Method

The research model is designed to investigate the EO-firm performance relationships. A survey on the medium-sized manufacturing companies listed by Industry Chamber of Adana was completed within 3 month during October-December 2018. The collected data were analyzed through using SPSS 25 program. First, Pearson correlation analysis identifies the relationships among EO, business strategy, organizational structure, environmental uncertainty, industry life cycle, firm resources, and firm performance. Second, independent T test, one-way analysis (ANOVA), and Welch and Brown-Forsythe tests examine the differences of the level of the EO and firm performance according to firm size, firm age, industry type, and business strategy. Third, hierarchical regression analyses investigate the EO-firm performance and business strategy-firm performance relationships, and the moderating effects of organizational structure, environmental uncertainty, industry life cycle, and firm resources on EO-firm performance linkage. Fourth, multinomial logistic regression analysis examines the impact of EO on the type of business strategy.

1.4. Research Plan

Chapter I introduces the purpose, significance and the method and plan of the research. Chapter II reviews the previous literature pertaining to EO, business strategy, organizational structure, environmental uncertainty, industry life cycle, and firm resources and their proposed relationships with firm performance. Chapter III explains the research design and the hypotheses. Chapter IV describes the research methods, reports the results of the factor analyses, and the validity and reliability of the measures. Chapter V presents the results of the study. Chapter VI contains the conclusions, limitations, and recommendations for future research.

CHAPTER II

LITERATURE REVIEW

2.1. The Entrepreneurial Orientation

The entrepreneurial behavior of enterprises, and entrepreneurs have become an important and broadly researched topic in the anthropology, psychology, sociology, economics (Brown, 1996, p.11), management, and entrepreneurship literatures over the last thirty years (Wales, Patel, Parida, & Kreiser, 2013). Researchers have used various terminologies, like strategic posture, entrepreneurial orientation, intensity, style, posture, proclivity, propensity, and corporate entrepreneurship in describing, measuring and discussing firm-level entrepreneurship (Covin & Wales, 2012). EO is a broadly accepted construct for measuring a firm's tendency to behave entrepreneurially (Kollmann & Stöckmann, 2014; Stevenson & Jarillo, 1990), and explaining the variances in performance of individuals and firms (Lumpkin & Dess, 1996; Covin & Slevin, 1991).

The roots of EO come from these three disciplines: economics, social psychology, and strategic management, each of them has its certain perspective towards EO (Mitchell, Smith, Morse, Seawright, Paredo, & McKenzie, 2002). The economists have interested in explaining the role of new enterprise in fostering economic progress (Low & MacMillan, 1988), hence the economic approach based researches have focused on the outcomes of the firm such as the growth of assets, employment, market share, physical output, profits, and sales in evaluating their entrepreneurial posture (Covin, Green, & Slevin, 2006). Economists stated that entrepreneur is the person who invests and exploits the available resources, labor, materials, and assets to achieve an incremental fortune, and initiates innovations, changes, and new ventures (Krueger, 2002, p.305). Cantillon (1755) developed an early theory of the entrepreneur. The theory focused on the economic task of entrepreneurs rather than their traits and characteristics. Entrepreneur was considered as a risk taker who attempts to search for any existing opportunity and take the required decisions, practices, and actions to gain higher profit in an unstable market. Entrepreneurship is a self-serving interest that aims to bring a temporary balance between

supply and demand in a certain market to attain his goals (Josien, 2008, p.9). Schumpeter (1934) developed a distinctive approach to entrepreneurship in the “Theory of Economic Development”. The book describes the role and the characteristics of the entrepreneurs. The entrepreneur’s role in the economy is changing the status quo and creating a new flow in the economy. The characteristics of the entrepreneur are innovating, continuous enhancing of existing products and services, creating or penetrating into new markets, and improving production processes and organizational structures inside firm (Nunes, 2016).

Studies stemmed from personal and social psychology perspectives have focused on studying the entrepreneur’s traits and characteristics, rather than the organization (Littunen, 2000). Researchers within these research streams aimed at identifying the traits and characteristics of successful entrepreneurs such as demographic information (family background, age, education, gender, and experience), psychological factors (need for achievement, power, and control), attitudes towards ambiguity and risk-taking, and behavioral variables (initiative and self-confidence) (Hofer & Sandberg, 1987). Psychologists define entrepreneur as the person who is driven by some forces to obtain some benefits and achieve some goals or escape from the responsibilities (Krueger, 2002, p.305). Regarding to strategic management approach, entrepreneurial cognitions are used to identify opportunities and outcomes, success in the start-up process, and making the venture-creation decision (Mitchell, Smith, Morse, Seawright, Peredo, & McKenzie, 2002). Hence, managers in entrepreneurial firms generally behave entrepreneurially through their management styles represented in strategic decisions and operating management philosophies of the firms, but managers in conservative firms are passive, risk-averse, and non-innovative (Covin & Slevin, 1989). Businessmen, considered entrepreneur as an aggressive competitor and a risk taker, others defined entrepreneur as a good investor, capitalist philosopher, and wealth creator who exploits resources and reduces cost and produces jobs (Krueger, 2002, p.305).

EO is commonly considered as firm-level entrepreneurship which concentrates on opportunity recognition and exploitation (Lechner & Gudmundsson, 2014). It refers to the behavioral tendency, managerial philosophy, processes, practices, and decision-making activities that lead to penetrate into new or existing markets with new or present goods or services. Furthermore, EO is represented in the tendency to conduct autonomously,

innovation and take risking, aggressive acting toward rivals, and proactiveness towards market opportunities (Lechner & Gudmundsson, 2014; Anderson & Eshima, 2013; Lumpkin & Dess, 1996). Thus, firms with entrepreneurial posture tend to undertake high-risk ventures with probability of high returns, operate in unstable environment, be aggressive in pursuing opportunities, engage in product–market innovation, and are pioneers in market with new product offerings since they are first to exploit the opportunities, and beat rivals to achieve future growth and outcomes. In contrast, conservative firms are not aggressive, preferring to operate in a stable environment with low risk and minimum business-oriented changes, and aiming to achieve personal revenues (Wales, 2011; Morris, 1998, p.3; Covin & Slevin, 1991).

Scholars of EO have often considered three major dimensions of the construct: innovativeness, risk taking, and proactiveness (Chirico, Sirmon, Sciascia, & Mazzola, 2011; Kreiser, Marino, & Weaver, 2010; Covin et al., 2006; Miller, 1983). Early studies considered EO as a uni-dimensional construct such as innovativeness, risk taking, and proactiveness, and these variables could be combined into one variable in order to examine the firm's EO, however later researches suggested that EO was represented in a multi-dimensional construct, and its dimensions are independent of each other (Chirico et al., 2011; Casillas & Moreno, 2010). All of these dimensions may be presented when a firm engages in new entry, but the successful new entry may be taken place when some of these factors exist (Covin & Wales, 2001). Miller (1983) defined entrepreneurial firm as that one regularly engaged in innovative endeavors at great risk before its competitors, therefore a firm must be rich in all three dimensions to be considered entrepreneurial. Lumpkin and Dess (1996) added new two dimensions: competitive aggressiveness and autonomy to Miller's three dimensions, they stated firms can be entrepreneurial if they have high level of any of these dimensions (Casillas & Moreno, 2010; Lumpkin & Dess, 1996), thus, some entrepreneurial firms show a high propensity to innovation accompanied with low levels of risk, whereas others may experience high risk but with little proactiveness (Casillas & Moreno, 2010). Most researches argued that EO can be operationalized and measured through risk-taking, innovativeness, proactiveness, competitive aggressiveness, and autonomy (Hughes & Morgan, 2007).

Risk taking is defined as the tendency to take brave actions such as entering obscure new markets, investing a large amount of firm's resources and capabilities to unknown ventures without certain knowledge of their outcomes, or heavy borrowing (Lumpkin & Dess, 2001). It is related to an individual or organizational readiness to trade off between resources to get the desirable outcomes (Lumpkin & Dess, 1996). The risks taken by entrepreneurial organizations fall into three risk categories: first, the financial risk takes places when firm lends heavily to fund venture, and borrows heavy debts due to the intense financial pressure on firm. The second type of risk is the excessive commitment of resources into a certain investment and venture. Third, risk relates to the uncertainty associated with entering new market and engaging in new ventures (Baird & Thomas, 1985). Other researchers classified the risks that organizations and their executives may face into three types: business risk, financial risk, and personal risk. Business risk is the risk of engaging into ambiguous markets, or involvement in new technologies. Financial risk is investing an important amount of resources or borrowing heavily for growth. Personal risk is referred to a person who takes the decisions and carrying out the strategy, so any potential failure in the decision may lead to personal consequences and influence severely on the firm (Dess & Lumpkin, 2005).

Innovation is an important way for achieving competitive advantages over rivals and desirable outcomes (Dess & Lumpkin, 2005). It is the readiness and capability of the firm to undertake new ideas, experimentation, invention, and creative processes (Kollmann & Stöckmann, 2014). Innovation was classified into product-market innovation, technological innovation, and administrative innovation. Product-market innovation entails processes related to functions such as marketing or advertising tasks, product design and market research (Miller & Friesen, 1978), technological innovation is characterized by practices and research and engineering efforts focusing on product or market development, administrative innovation related to creation, novelty in management systems, organizational structure, and control mechanisms (Dess & Lumpkin, 2005; Lumpkin & Dess, 1996) Accordingly, innovativeness includes engaging in and supporting new ideas, experimentation, novelty, and creative processes that lead to new products, services, and technological processes, furthermore acquiring and developing the latest technologies and production methods in manufacturing.

Proactiveness indicates the firm's expected position, and behavior regarding the future needs and wants in the market, thus acquisition of a competitive advantage over competitors, and be a market leader who has the vision to exploit the available opportunities to meet the expected future demand. (Dess & Lumpkin, 2005; Wiklund & Shepherd, 2005). It includes initiative and responsiveness to both the environment and competition, and requires organizations to aggressively challenge their competitors, achieve new entry, improve positions, or overcome barriers (Drew, 1995). Firms can be proactive if they search for new opportunity continuously, and introduce new products, services, or technologies ahead of their rivals (Dess & Lumpkin, 2005). Proactiveness requires the engagement of managers in opportunistic expansion by providing the required vision and imagination, focusing on first-mover strategy to benefit from market opportunities, establishing brand recognition by expecting and searching for new opportunities in the market, and engaging in and exploiting opportunities in emerging markets, developing an aggressive competition orientation to identify and be first-mover advantage over their competitors (Lumpkin & Dess, 1996).

Competitive aggressiveness refers to aggressive posture and response aimed to overcome threats in a competitive marketplace, these behaviors can be such as reducing prices and giving up some profitability for the sake of gaining ambitious market share, or acting aggressively in marketing, quality, and manufacturing fields relative to competitors (Hughes & Morgan, 2007). Enterprise competes aggressively by attempt to dominate its industry rivals by proactive and innovative actions and being the first-mover to introduce new products, services, or techniques and get an extremely competitive posture (Covin & Covin, 1990). Accordingly, firms need to defend their competitive position and enhance their entrepreneurial posture in the market through their aggressive behaviors like penetrating markets with extremely lower prices and imitating the strategies, practices, processes or techniques of successful competitors.

Autonomy is tightly associated to the innovative and proactive behavior of the firm (Lumpkin & Dess, 1996). It refers to the authority and independence granted to an individual or team in the firm to develop and improve business from ideas to accomplishment (Soininen, Martikainen, Puumalainen, & Kyläheiko, 2012). According to strategy formulation, theorists identify two types of autonomy. The first type considers the

decisive decision making where a leaders transforms the vision to reality and actions. The second type considers the individual autonomy that supports entrepreneurial behavior, practices, and decision making process at middle and lower level management of the firm (Lumpkin & Dess, 1996).

2.2. The Extant Literature: EO and EO-firm performance relationship

The initial empirical studies of entrepreneurship focused on individual characteristics such as traits and demographic information of entrepreneurs. These studies suggested that an individual's psychological characteristics do not make a person entrepreneurial, likewise, non-behavioral attributes such as culture and firm structure don't lead to an entrepreneurial firm. Instead, actions and behaviors make the firm entrepreneurial. Since these drawbacks and potential problems the individual-level entrepreneurship researches experienced, the interest has moved towards the firm-level entrepreneurship researches, hence firm-level analysis can measure the impact of entrepreneurial orientation (Covin & Slevin, 1991).

In an effort to make a complete picture of the related literatures discussed the Entrepreneurial Orientation (EO), "Google Scholar" search engine was used to identify the highly cited journals addressed EO, and EO-firm performance relationship, which are "*Journal of Small Business Management*", "*Strategic Management Journal*", "*Small Business Economics*", "*Journal of World Business*", "*Journal of Management*", "*Journal of Business Venturing*", "*Journal of Business Research*", "*International Small Business Journal*", "*Family Business Review*", "*Entrepreneurship Theory and Practice*", "*Academy of Management Journal*", "*Strategic Entrepreneurship Journal*", "*The Academy of Management Review*", and "*Journal of Applied Business Research*". A digital database inquiry of these 14 high ranking journals was conducted using these keywords: "*entrepreneurial orientation*", and "*entrepreneurial orientation*" and "*firm performance*". 138 available articles (8 conceptual, and 130 empirical) were found. The majority of the empirical studies were conducted in developed countries (92 studies), while 28 studies were applied in developing countries, and the remaining 10 studies were applied in several countries. After reviewing the available studies resulted from the research process, it is

noticeable that there are five main directions for studying EO as shown in the Appendix XIII.

In the first direction, 92 researches assessed the impact of EO on different variables such as organizational factors: strategy (Hernández-Perlines, Moreno-García, & Yañez-Araque, 2016; Lechner & Gudmundsson, 2014; Moreno & Casillas, 2008), and organizational Commitment (De Clercq, Dimov, & Thongpapanl, 2010), and environmental factors: environmental hostility (Miles, Arnold, & Thompson, 1993), and market-related factors: marketing orientation (Morris & Paul, 1987), marketing competences (Smart & Conant, 1994), and marketing capabilities (Martin & Javalgi, 2016), and organizational learning related factors: organizational learning (Yu et al., 2013; Dada & Fogg, 2016), knowledge management system (Yu, Dong, Shen, Khalifa, & Hao, 2013), individual-level learning/team-level learning (Brettel & Rottenberger, 2013), experimental/acquisitive learning (Zhao, Li, Lee, & Bo Chen, 2011; Kreiser, 2011), learning capability (Anderson, Covin, & Slevin, 2009), and learning orientation (Wang, 2008), and, and networking: network resource acquisition (Jiang, Liu, Fey, & Jiang, 2018), and firm performance/indicators: profitability (Lisboa, Skarmas, & Saridakis, 2016; Baker & Sinkula, 2009; Slater & Narver, 2000), sales growth (Messersmith & Wales, 2011), and firm growth (Altinay, Madanoglu, Vita, Arasli, & Ekinici, 2016).

In the second direction, 23 articles tried to detect the antecedents of EO such as culture: national culture (uncertainty avoidance, individualism, masculinity, and power distance) (Kreiser, Marino, Dickson, & Weaver, 2010), clan/ adhocratic/ hierarchical/ market organizational culture (Engelen, Flatten, Thalmann, & Brettel, 2014), and group/ hierarchical/national/development culture (Engelen, Gupta, Strenger, & Brettel, 2015), behaviors and characteristics of CEOs: self-evaluation of CEO (Simsek, Heavey, & Veiga, 2010), CEO tenure (Boling, Pieper, & Covin, 2016), and the foundation of CEO (Deb & Wiklund, 2017). While other studies investigated the impact of various factors on EO like internal knowledge sharing (Clercq, Dimov, & Thongpapanl, 2013/2015), formalization level (Clercq, Dimov, & Thongpapanl, 2013), family involvement (Madanoglu, Altinay, & Wang, 2016), international joint ventures/ firm size/age (Luo, Zhou, & Liu, 2005), and strategic reactivity (Green, Covin, & Slevin, 2008), and family involvement in the board (Bauweraerts & Colot, 2017).

In the third direction, 7 studies were assessed the moderating impact of EO on the relationship between two factors such as knowledge-based resources-firm performance relationship (Wiklund & Shepherd, 2003), market orientation-firm performance relationship (Li, Zhao, Tan, & Liu, 2008; Bhuian, Menguc, & Bell, 2005), absorptive capacity-financial performance relationship (Wales, Parida, & Patel, 2013), family involvement in management-risk of business failure relationship (Revilla, Pérez-Luño, & Nieto, 2016), and relational/ transactional/ ideological attributes-organizational attractiveness relationship (Moser, Tumasjan, & Welp, 2017).

In the fourth direction, 11 articles addressed EO as a mediator, and investigated its mediating impact of EO on the relationship between two different variables such as national culture-entrepreneurship relationship (Lee & Peterson 2000), internal locus of control/ self-efficacy-firm performance relationship (Poon, Ainuddin, & Junit, 2006), first international market entry-international level /scope of firm relationship (Ripollés-Meliá, Menguzzato-Boulard, & Sánchez-Peinado, 2007), (reliance on family ties/ access to co-ethnic networks / access to mainstream networks)-employment and sales growth relationship (Wang & Altinay, 2010), ownership concentration/ CEO ownership-internationalization relationship (Liu, Li, & Xue, 2011), ownership type-firm performance relationship (Miller, & Breton-Miller, 2011), human capital/social capital-firm performance relationship (Miao, Coombs, Qian, & Sirmon, 2017), and environmental munificence/hostility/dynamism/complexity-firm performance relationship (Rosenbusch, Rauch, & Bausch, 2013).

In the fifth direction, 5 researchers examined EO in different positions as independent, moderator, and dependent variables, whereas, Wales, Gupta, and Mousa (2011) developed a framework assumed the moderating impact of leadership, team, organization, culture, organizational learning, environment, strategy, networking, human resources on the relationship between EO-outcome, and the direct impact of EO on innovation, networking, environment, strategy, organizational structure, learning, resources, and firm performance. Furthermore, Wales et al. (2011) contended that each of CEO characteristics, top management team, top manager characteristics, strategy, culture, organizational resources, environment, governance, human resources management, leadership, organization, and networking were antecedents of EO. Tang and Hull (2012)

investigated the moderating impact of competitive position on the relationship between EO and environmental hostility, as well as the moderating effect of EO on environmental hostility-market strategy relationship. Boso, Story, and Cadogan (2013) studied the influence of the (EO-market orientation interaction) on firm performance, and the moderating impacts of social and business networks on the relationship between (EO-market orientation interaction) and firm performance. Altinay, Madanoglu, Vita, Arasli, and Ekinici (2016) investigated the impact of EO on firm growth, the reciprocal effect between EO and organizational learning capability, and the mediating influence of organizational learning capability on EO-firm growth relationship. Swoboda and Olejnik (2016) studied the relationship between EO-international performance, and between EO-scanning and planning Processes, and the mediating impact of EO on the relationship between the scanning of information/ planning process, and international performance.

Among the 138 articles discussed EO, 65 studies investigated the direct or indirect influence of EO on firm performance or its relative indicators (sales growth, profitability, etc.). Figure 1 summarizes the most investigated variables during studying EO-firm performance/related indicators. There is two main streams of studies addressed the EO-firm performance relationship.

First stream of studies assessed the direct EO-firm performance/relative indicators linkage. Most of them approved the direct influence of EO on firm performance (Tang, Tang, Marino, Zhang, & Li, 2008; Keh, Nguyen, & Ng, 2007; Wiklund & Shepherd, 2003), international performance (Hernández-Perlines, Moreno-García, & Yañez-Araque, 2016; Swoboda & Olejnik, 2016; Jantunen, Puumalainen, Saarenketo, & Kyläheiko, 2005), profitability (Baker & Sinkula, 2009), and sales and market share growth (Altinay, Madanoglu, Vita, Arasli, & Ekinici, 2016), while other studies didn't find any impact of EO on profitability (Baker & Sinkula, 2009; Slater & Narver, 2000), sales growth (Messersmith & Wales, 2011), and employment growth (Altinay et al., 2016). In the same context, some researchers investigated the moderating impact of seventh main factors such as *organizational factors*, *environmental factors*, *market-related factors*, *organizational learning*, *networking*, *culture*, and *managerial behaviours* on the direct relationship between EO/ its dimensions and firm performance/relative indicators. First, researchers investigated the moderating impact of *organizational factors* such as Lumpkin and Dess

(1996) suggested the moderating influence of organizational structure on EO-firm performance/relative indicators relationship. Messersmith and Wales (2011) confirmed the moderating impact of work system on EO-sales growth relationship. Wales et al. (2011) proposed the moderating impact of structural organicity on EO-outcome. Núñez-Pomar, Prado-Gascó, Sanz, Hervás, and Moreno (2016) approved firm size had a moderating impact on EO-firm performance relationship, whereas small firms rather than large firms moderated EO-firm performance relationship. Lumpkin and Dess (2001) found that industry life cycle moderated proactiveness-firm performance relationship, where proactiveness-firm performance relationship was stronger in early stages of industry life cycle. Wales et al. (2011) proposed the moderating impact of business strategy, and human resource on EO-outcome, Anderson and Eshima (2013) found intangible resources had a moderating impact on EO-firm growth. Covin et al. (2006) found that operating and strategic decisions and formation mode of strategy moderated EO-firm growth relationship. Anderson and Eshima (2013) found firm age moderated the relationship between EO and firm growth. On the contrary, Wiklund and Shepherd (2005) found financial resource didn't moderate EO-firm performance relationship. Second, Moreno and Casillas (2008) couldn't find any moderating influence of firm resources on EO-firm growth. Second, researchers investigated the moderating influence of *environmental factors* on EO-firm performance/relative indicators relationship, therefore, Lumpkin and Dess (2001) posited that environmental dynamism moderated proactiveness-firm performance relationship, and environmental hostility moderated (proactiveness and competitive aggressiveness)-firm performance relationship. Moreno and Casillas (2008), and Casillas, Moreno, and Barbero (2010) approved the moderating effects of environmental dynamism and hostility on EO-firm growth relationship. Wales et al., (2011) proposed the moderating impact of environment on EO-outcome relationship, however, Wiklund and Shepherd (2005) couldn't approve the moderating impact of environmental dynamism on EO-firm performance relationship. Thanos, Dimitratos, and Sapouna (2017) failed to confirm the positive impact of international hostility on international EO-international performance relationship, but they approved the negative moderating impact of international hostility on international EO-international performance relationship in higher politicization (employees' preferences of their own benefits over the firm's interest). Saeed, Yousafzai, and Engelen (2014)

confirmed the moderating impact of economic and political context on EO-firm performance relationship. Lomberg, Urbig, Stöckmann, Marino, and Dickson (2016) found that the relationship between EO and firm performance varied among high-tech, low-tech, and multiple Industries. Gupta and Gupta (2015) approved that environment with high volatile demand and extreme competition strengthened EO-firm performance relationship. Gupta and Batra (2016) found that demand growth and intensive competition had the moderating impact on EO-firm performance relationship. On the contrary, Pearce II, Fritz, and Davis (2009) couldn't confirm the moderating impact of munificent environment on EO-firm performance relationship. Martin and Javalgi (2016) failed to approve the moderating impact of extreme competition on EO-international new ventures performance relationship. Third, researchers investigated the moderating influence of *market-related factors* on EO-firm performance/relative indicators relationship. Hence, Brouthers, Nakos, and Dimitratos (2015) approved that participation in research and marketing alliances moderated EO-firm performance relationship. Cadogan et al. (2016) detected that market orientation moderated the J-shaped relationship between export entrepreneurial oriented behavior and export performance. Fourth, researchers investigated the moderating influence of the *organizational learning* on EO-firm performance/relative indicators relationship. Covin et al. (2006) found that firms with lower proficiency at learning from their strategic failures had a strong EO-sales growth relationship compared to those with higher proficiency at learning from strategic failures, Wales et al. (2011) proposed the moderating impact of organizational learning on EO-outcomes relationship. Fifth, researchers investigated the moderating influence of *networking* on EO-firm performance/relative indicators relationship. Hence, Stam and Elfring (2008) stated that firms with much rather than little bridging ties had strong EO-firm performance relationship. Wales et al. (2011) proposed the moderating impact of networking on EO-outcome relationship. Wales, Parida, and Patel (2013) found that technology and network capability moderated EO-firm performance relationship. Boso et al. (2013) approved that social and business networks positively moderated the relationship between (EO-market orientation interaction) and firm performance relationship. Su, Xie, and Wang (2015) detected that political networking negatively, and business networking positively moderated EO-new venture performance relationship, while financial networking had an inverse U-shaped moderating impact on

EO-new venture performance relationship. Sixth, researchers investigated the moderating influence of *culture* on EO-firm performance/relative indicators relationship. Hence, Wales et al. (2011) proposed the moderating impact of national culture on EO-outcome relationship, Kreiser et al. (2013) contended that individualism moderated the U-shaped relationship between innovativeness/proactiveness and firm performance relationship. Saeed et al. (2014) found both uncertainty avoidance and power distance had moderating impacts on EO-firm performance relationship, while collectivism partially moderated EO-firm performance relationship. Semrau, Ambos, and Kraus (2016) found that performance-based culture positively moderated the relationship between EO and firm performance. Seventh, researchers investigated the moderating influence of *managerial behaviors* on EO-firm performance/relative indicators relationship. Hence, Lumpkin and Dess (1996) proposed the moderating influence of managers' needs to achievement and acceptance to ambiguity on EO-firm performance/relative indicators relationship. Engelen et al. (2015), found that top managers who had clear vision and behaved as transformational leaders, positively moderated EO-firm performance relationship. Mousa et al. (2015) found that the external board activities of top management team moderated the negative relationship between EO and the raised rate of capital in young firm. Deligianni, Dimitratos, Petrou, and Aharoni (2016) found that decision rationality of high level managers moderated the EO-international performance relationship. Tang, Tang, and Cowden (2016) approved that self-enhancing values of CEO negatively moderated the relationship between EO and firm performance, Messersmith and Wales (2011) found that partnership philosophy (considering employees as an important part in firm's success) positively moderated EO-firm sales growth relationship. Thanos et al. (2017) failed to approve the negative moderating impact of politicization (employees' preferences of their own benefits over the firm's interest) on international EO-international performance relationship.

The second stream of studies investigated the indirect impact of EO on firm performance/relative indicators, where studies investigated the mediating impact of four factors (*organizational factors*, *market-related factors*, *organizational learning*, and *networking*) on the relationship between EO/ its dimensions and firm performance/relative indicators. First, the studies assessed the mediating influence of *organizational factors* on EO-firm performance/relative indicators relationship. Lumpkin and Dess (1996) proposed

that integrating activities among business units in firms mediated EO-firm performance/relative indicators relationship. Moreno, and Casillas (2008) failed to confirm the mediating impact of business strategy on EO-firm performance/relative indicators relationship. Second, the studies investigated the mediating influence of *market-related factors* on EO-firm performance/relative indicators relationship. Vega-Vázquez, Cossío-Silva, and Revilla-Camacho (2016) found that market orientation mediated EO-firm performance relationship. Third, the studies examined the mediating influence of *organizational learning* on EO-firm performance/relative indicators relationship. Wang (2008) approved that learning orientation positively mediated EO-firm performance relationship. Alegre and Chiva (2013) found that organizational learning capability had a mediating impact on EO-firm performance relationship. Fourth, the studies investigated the mediating influence of *networking* on EO-firm performance/relative indicators relationship. Jiang et al. (2018) found that network resource acquisition from outside the firm mediated the relationship between EO and firm performance. Furthermore, other studies considered EO as a moderator, and examined its indirect impact on firm performance/relative indicators. Therefore, Wiklund and Shepherd (2003) approved that EO moderated knowledge based resources-firm performance/relative indicators relationship. Richard et al. (2004) found innovativeness and risk taking had positive and negative moderating impact on the nonlinear relationship between racial and gender heterogeneity among managers-firm performance relationship respectively. Bhuian et al. (2005) approved the moderating impact of EO on the inverse U-shaped relationship between market orientation and business performance, while Tang, Tang, Marino, Zhang, and Li (2008) found that innovativeness and proactiveness positively moderated market orientation-firm performance relationship. Wales, Parida, and Patel (2013) had a moderating impact of EO on absorptive capacity of knowledge-financial performance relationship.

In this study, the following organizational factors: business strategy, organizational structure, firm resources, environmental uncertainty, and industry life cycle are comprised in the model of EO-firm performance relationship to investigate their impacts on both EO, and EO-firm performance relationship. In addition to the previous review, further deep research for “EO” & “business strategy”, “EO” & “organizational structure”, “EO” & “firm

resources”, “EO” & “environmental uncertainty”, and “EO” & “industry life cycle” are conducted.



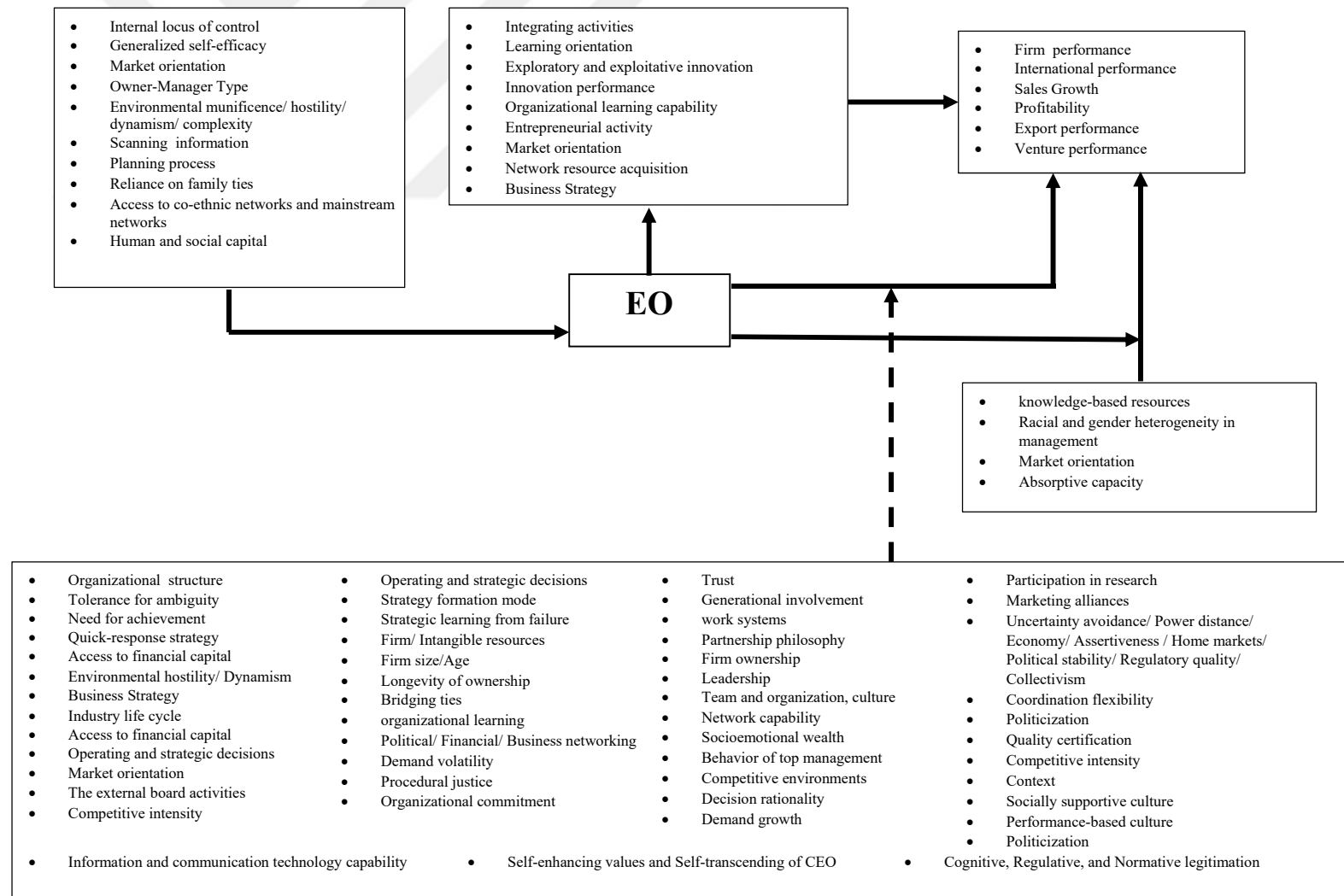


Figure 1. EO-firm performance model

2.2.1 EO, Business Strategy, and Firm Performance

Business strategy is the process of identifying primary long-term objectives of the firm and implementing all the required actions and allocation the resources for carrying out the firm's goals (Ike, 2017, p.6). Selecting a business strategy is one of the most significant decisions in the organizations (Borch, Huse, & Senneseth, 1999). Several typologies studied various aspects of organizational behavior (Snow & Hrebiniak, 1980). Most researches have relied on Porter's competitive strategies or Miles and Snow's organizational strategies to measure the organizational strategy adopted by firms (Slotwinski, 2010). According to Porter, business-level strategies are low cost leadership, differentiation, and focus, whereas cost leaders are price leaders focusing on cost control to be the lowest cost producers relative to their competitors. They unlikely develop or launch new products, but they achieve an above-average revenues on investment in an industry by investigating existing products, dominating high market share, and accessing to raw materials. Differentiation strategy focus on product or service developments based on innovativeness in product design or brand image, technology, product features, customer services, and distribution channels. Differentiator firms offer high-quality products supported by good service to build customer loyalty which is considered as a competitive barrier and enables them to charge at premium prices and get more profits. Focus strategy is highly customer-oriented and concentrate on a narrow niche such as a limited customer group, a specialized product line, or a particular geographical area. This strategy requires a complete knowledge of customers in the specific segment, therefore a focuser may attempt to achieve a cost advantage or a product or service advantage through differentiation within a targeted market segment (Lumpkin & Dess, 2006; Frambach, Prabhu, &Verhallen, 2003). Porter's framework overlaps with Miles and Snow's typology. Hence, Porter's strategy of differentiation, and cost leadership resembles Miles and Snow's prospector and defender strategies respectively (Kim, Nam, & Stimpert, 2004). Miles and Snow posited organizational strategies as defender, prospector, analyzer, and reactor (Snow, & Hrebiniak, 1980). Defender strategy is focused on the optimal usage of resources in a stable environment. Defenders usually ignore the development and movements outside of their domains. Instead, they prefer to get their goals through market penetration and limited product development, and try to create a stable environment by protecting their market

share and invest through stability, reliability, and efficiency. Over time, defender is able to maintain a small niche within the industry which competitors hardly can penetrate (Moreno, Casillas, 2008; Miles, Snow, Meyer, & Coleman, 1978). Prospector firms strongly search for new opportunities and chances, start primary product changes, as well as emphasize on product and market effectiveness in order to get market changes based upon distinctive competences such as general management, product research and development, market research, and basic engineering. The analyzer strategic type is a hybrid of defender and prospector strategies. It has a two-dimensional focus as the firm engages in both large production and research and development of new products and markets. Analyzers were almost behave as defenders in producing their established products or services. They also imitate only the most successful innovations developed by key prospectors in the industry for their new products. They rely on qualified staff to support product innovations so that products could be produced efficiently by the new technology, and be marketed heavily. Reactors generally do not follow any certain strategy, they generally keep their directions unless being forced to change by the environment. Organizations were often forced into this strategy when their top managers failed to develop the special competences, organizational structures, and management processes required by a particular strategy. They respond inappropriately to environmental changes and uncertainty, and generally have poor performance (Tang & Tang, 2012; Lindow, Stubner, & Wulf, 2010; Snow & Hrebiniak, 1980). Although most researchers have used both Miles and Snow's and Porter's strategies in their studies, there is no clear consensus identifies the best suited for entrepreneurial studies. However, Miles and Snow may offer some advantages because the strategies are well grounded in organizational adaptation theories, and widely used in entrepreneurial literature, and have proven to be reliable in testing theories (Slotwinski, 2010).

Some researchers argued the moderating impact of business strategy on EO-firm performance, while other argued the mediating influence on this relationship (Hernández-Perlines et al, 2016). On the one hand, Tang and Tang (2012) showed the moderating effects of strategy on inverted U curve EO-firm performance relationship. They found that prospector and analyzer strategies alleviated the inverted U shape of EO-firm performance significantly.

On the other hand, Lumpkin and Dess (1996) proposed that the relationship between EO and competitive strategy is important to understand firm performance, and entrepreneurial firms probably take risky actions, and identify opportunities derived from technological development, and be proactive and the first-mover to exploit the available opportunities in the market through the design and marketing of new products. Dess and Lumpkin (1997) found that entrepreneurial orientation was strongly associated with performance when it was accompanied with both the compatible strategy and environmental conditions. For instance, entrepreneurial firms with a marketing differentiation strategy in an uncertain or heterogeneous environment would possess higher performance. Moreno and Casillas (2008) discussed the relationship between the entrepreneurial orientation of the firm and the type of strategy used. The greater the firm's entrepreneurial orientation, the more likely it engages in a prospector strategy, but there isn't significant relationship between the growth of the firm and the type of strategy used. Lechner and Gudmundsson (2014) assessed how dimensions of EO affects competitive strategy directly and firm performance indirectly. They found that each entrepreneurial orientation dimension has different impacts on competitive strategy (cost leadership and differentiation strategy) and the positive effects of cost leadership and differentiation on performance. Innovativeness is highly related to differentiation strategy. Risk-taking and competitive aggressiveness are negatively associated with both differentiation and cost leadership strategies. Both differentiation and cost leadership strategies are positively related to performance.

2.2.2. EO, Organizational Structure, and Firm Performance

Organizational structure can be defined as the arrangement of workflow, communication, and authority relationships in an organization, structure can also be classified in terms of the organizational departments, such as functional structure, product structure, and matrix structure (Covin & Slevin, 1991). Burns and Stalker (1961) classified the structure according to its technology as mechanistic and organic structure. Mechanistic structure tends to be highly centralized and formal authority, and is characterized by a high degree of specialization, division of labor, vertical interaction, and communication. In contrast, organic structure tends to be decentralized and informal and characterizes by more

loose task differentiation, less clear hierarchy, a relatively higher degree of autonomy, lateral interaction and an equal distribution of knowledge and information through the organizational networks (Jogarathnam & Tse, 2006; Lumpkin & Dess, 1996).

Several scholars have addressed the topic of the entrepreneurship-organizational structure relationship, EO should be associated with the flexibility represented in organic structures (Khandwalla, 1977), low structural formalization, decentralization, and low complexity (Covin & Slevin, 1991). Therefore the entrepreneurial orientation of firm flourishes in association with particular organizational structures, an entrepreneurial orientation is positively associated with higher firm performance when it is managed through an organic structure than mechanistic structure. Hence, organic structure supports the systematic discovery of innovative opportunities and fosters opportunities through facilitation and motivation that managers required to be able to adapt themselves to the changing conditions (Jogarathnam & Tse, 2006; Covin & Slevin, 1991). Some researchers argued that alignment between strategy and organizational structure leads to high organizational performance. Hence, defenders require a highly centralized organizational structure in order to be effective, prospectors require a highly decentralized organizational structure in order to remain adaptable and responsive, and analyzers require a moderately centralized organizational structure that permits the necessary degree of flexibility, but reactors isn't associated with any type of organizational structure (Miles et. al., 1978). Kreiser & Davis (2010) studied the impact of organizational structure, environment on EO-firm performance. They proposed four groups of conditions in which firms can achieve higher performance: first, dynamic and munificent environments, highly innovative and proactive firms with moderate-to-high risk taking, and organic structure, second, stable and munificent environments, moderate-to-high innovative and proactive firms with moderate risk taking, and combination of mechanistic and organic structure, third, dynamic and hostile environments, moderate-to-high innovative and proactive firms with moderate risk taking, combination of mechanistic and organic structure, fourth, stable and hostile environments, low proactive, innovative, and risk taker firms with mechanistic structure. Therefore, researcher proposes that organic structure support the EO-firm performance relationship compared to the mechanistic structure.

2.2.3. EO, Environmental Uncertainty, and Firm Performance

The environment has been considered one of the significant contingencies in organization theory and strategic management (Lumpkin & Dess, 2001), it has played an essential role in the study of entrepreneurship, as a lot of researches referred to environment's impact on the existence and effectiveness of entrepreneurial actions and ventures (Covin & Slevin, 1991), Miller and Friesen (1978) used dynamism, heterogeneity, and hostility dimensions to measure the uncertainty in the environment. Dynamism defined by the rate of uncertain and unpredictable changes in a firm's environment that hampers the manager to expect the events in the future. The uncertainty appears from a lack of information and knowledge about future events such as variation in customer needs, strategies of competitors and suppliers, and technology (Wiklund & Shepherd, 2005; Lumpkin & Dess, 2001). Heterogeneous environment is a diverse and complex environment that provides the firm with opportunities for innovation in developing different products and services to meet the various customer needs across markets (Zahra, 1991). Hostility refers to an undesirable environmental situation that represented by intense competition, scarce resources and opportunities, as well as economic, political, and legal constraints, low loyalty of customers, and the serious results come from wrong strategic decisions (Rosenbusch, Rauch, & Bausch, 2013; Casillas, Moreno, & Barbero, 2010).

Several studies suggest that EO-firm performance relationship is moderated by environmental uncertainty (Covin & Slevin, 1991). Entrepreneurial firms usually are existed in dynamic and hostile environments associated with large opportunities and risky conditions, in which their managers can grow rapidly and exploit opportunities to achieve higher rewards (Peterson. R., & Berger, 1971). Dynamism, hostility, and heterogeneity are commonly used to measure the influence of environment on EO-Firm performance relationship (Casillas et al., 2010; Slotwinski, 2010; Casillas & Moreno, 2008; Wiklund & Shepherd, 2005; Zahra & Garvis, 2000; Lumpkin & Dess, 2001; Wiklund & Shepherd, 2005, Zahra, 1993; Miller & Friesen, 1982). Environmental heterogeneity, dynamism, and hostility were significantly and positively related to pioneering, innovation, and risk taking (Miller, 1983). Miller and Friesen (1982) identified the positive relationship between both of environmental dynamism and heterogeneity, and firm's entrepreneurial position. Khandwalla (1987), found that firms can successfully compete in high technological or

dynamic environments and overcame the difficult conditions through taking risky decisions and actions, and innovative behavior, and being proactive towards the available opportunities in the market. Kreiser, Marino and Weaver (2002) found innovation were negatively associated with environmental hostility. There was a curvilinear relationship between risk-taking and hostility, where extreme levels of hostility or munificence discourage risk-taking action.

Firms that behave more proactively and aggressively and take risks in dynamic environment will perform better, as dynamic environment is associated by high degrees of innovation and demands that firms expect and act accordingly to meet customer needs (Casillas et al., 2010; Lumpkin & Dess, 2001), firms which are high risk takers and proactive in dynamic environment are capable of exploring and exploiting a greater diversity of potential opportunities that lead to higher performance, on the contrary, in stable environment, firms tend to maintain their competitive position or to improve it slightly, where potential fewer opportunities lead to unrelated business activities which may affect on their performance (Casillas et al., 2010). Corporate entrepreneurship is a successful practice among firms operating in hostile environments compared to benign environments (Zahra & Covin, 1995), thus firms applying a high entrepreneurial position achieve a higher performance in hostile environment, while a more conservative firms perform better in a more benign environment (Covin & Slevin, 1989). In extremely hostile environments, the innovative firms will have greater degrees of performance and growth, since they are greatly oriented to innovation and exploit the limited existing opportunities to get higher performance. Risk averse firms have a lower growth, than risk taker firms. In this environment, only businesses that show proactive behaviour have the ability to obtain higher growth rates compared to their competitors and the rational uses of the scarce resources to develop and implement their strategies and decisions (Casillas et al., 2010). In contrast to what most researchers found, Moreno & Casillas (2008) found the insignificant impact of environmental dynamism and hostility on EO-firm performance relationship. Becherer and Maurer (1997) also failed to prove the moderating impact of environmental hostility on the relationship between entrepreneurial orientation and the firm's profits, since extensive risk taking, proactiveness, and greater innovation can be very dangerous in highly competitive environments (Miller & Friesen, 1983).

2.2.4. EO, Industry Life Cycle, and Firm Performance

Industry life cycle describes the changes that industries, organizations, and products undergo over time, as they require different strategies, organizational resources to compete during life cycle stages (Harrison & John, 2013, p.109). Industries and products generally go through four development stages: introduction, growth, maturity, and decline (Grant, 2016, p.207). Each phase begins and ends with a point of inflection, where the pattern of demand, strategy and competition change (Rao, Rao, & Sivaramakrishna, 2009, p.335).

The typical shape of demand takes S-curve as shown in figure 2. In the introduction stage, the demand and the growth rate is low. During the growth stage, demand increase greatly. When market saturates, the growth rate slows down, but demand grows. If the customers' needs changes, or the offered products are substituted by new ones, the industries go to the decline stage where demand shrinks (Gupta, Gollakota, & Srinivasan, 2007, p.67).

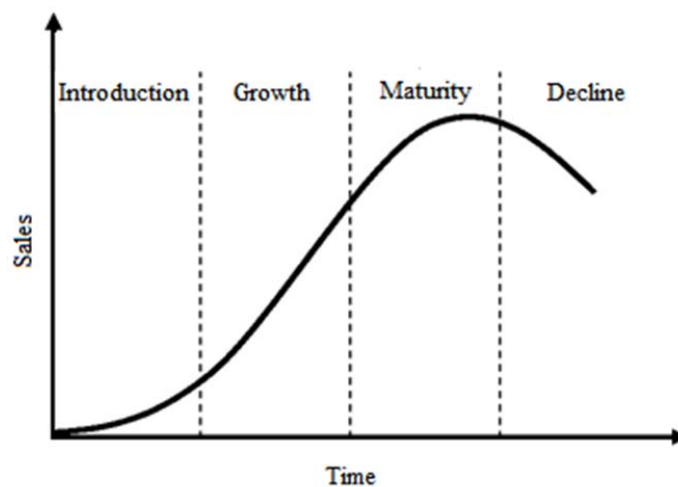


Figure 1. Industry Life Cycle (Grant, 2010, Pg.271)

The nature of the innovation and technological development changes through stages of the industry life cycle. In the introduction stage there is a heavy investment on technology, products and services still subjecting to the experimentation due various designs of the product. Once one of these designs become a dominant, the growth stage starts, associated with increasing emphasis on process innovation, and less emphasis on product innovation. In the maturity stage, product development tends to be marginal

because of the great emphasis on process leading to the efficiency. During the decline phase characterizes with lower investment in the technology (Rao et al., 2009. p.335), investment will be limited to the firms whose have a leadership positions in the industry (Gupta et al., 2007, p.67).

The nature and the intensity of competition varies during the four stages of industry life cycle. In the introduction stage, there are few players in the industry, so the completion is low (Gupta et al., 2007, p.68), the emphasis of the firm is directed to understanding the customers' favorable designs, and needs. During growth stage, demand often exceeds supply, competition increases and several industries experience shakeouts that can be appeared as a closure of the firms or the merging activities. As industry matures, small number of firms survive in severe competitive environment. The decline stage can be also so extremely competitive depending on the height of the exit barriers (Rao et al., 2009. p.335). The appropriate strategy for the introduction stage is the differentiation strategy as firms in this periods tend to improve the processes to cut prices and offer quality products. In the growth stage, the differentiation strategy still the appropriate strategy due to the brand loyalty, where firms need to understand preferences and needs of consumers for specific brands that requires strong knowledge, differentiated products and services, and financial resources. Once industry moves into maturity stage where the fierce competition, consumers become price sensitive as they have greater understanding of the products, therefore it is so important to keep the cost at the lowest possible. Accordingly, firms need to follow a hybrid strategy comprises both of differentiation and cost leadership strategies. In the decline stage, the sales and profit lower, while the competition still high. In this period, firm's strategy generally depends on the actions taken by its rivals. Cost leadership and focus strategies are often preferred strategies as firms aim to cut the cost and raise the cash and survive in the short run (Rao et al., 2009. p.335).

Covin & Slevin (1991) suggested that EO is common among firms work in early industry life cycle stages. Hence, new ventures in emerging industries can take advantage and perform better from their entrepreneurial behavior than new ventures in more latter industry life cycle stages (Covin & Slevin, 1990). Studies of the EO-firm performance relationship indicated that the stages of industry life cycle tended to prefer one dimension of entrepreneurial orientation over another. In the early industry development stages, firms

have greater performance when they are proactively oriented. Firms can achieve strong performance if they behave proactively. Proactive behaviors include technological leadership, attaining scarce resources, and imposition of switching costs that help firms seize market share and achieve brand loyalty. On the contrary, proactiveness mayn't be appropriate in established and mature industries. A competitively aggressive strategy was proposed to firms in more mature stages of industry development, thus, in mature industries where there is severe rivalry, firms with competitive aggressiveness strategy are likely to succeed, as firms tend to manage resources and enhance profits made by earlier investments (Lumpkin & Dess, 2001).

2.2.5. EO, Firm Resources, and Firm Performance

Firm resources can be considered as the capabilities, competencies, assets, processes, attributes, information, and knowledge that support a firm to develop and implement strategies that leads to its growth, effectiveness, and efficiency. Firm resources can be classified into four categories: financial capital contains the various monetary resources used to formulate and implement strategies; physical capital includes the applied equipments and technology, geographic location, access to raw materials, communication channels and distribution networks; human capital comprises the experience, intelligent, insight of managers and workers and their relationship; and organization capital includes planning, coordinating systems, culture, image, and reputation (Ishengoma, 2005, p.27). A firm's ability to engage in entrepreneurial behavior relies partially on its resources and competencies which include monetary resources, plant and equipment, human resources, functional-level capabilities such as manufacturing flexibility, organizational-level capabilities as the ability to get a new product to the market, and organizational systems such as marketing research systems. Resources and competencies are considered as facilitators or obstacles of entrepreneurial behavior, and influence the degree of entrepreneurial activities any firm undertakes. Organizations with plentiful resources may have a greater capacity than those with scarce resources to engage in entrepreneurial activity. Accordingly, resources and capabilities possessed by a firm will influence entrepreneurial strategic actions (innovative, proactive, and risk-taking) (Covin & Slevin, 1991), and so the relationship between a firm's EO and performance (Lumpkin & Dess,

1996). While Anderson and Eshima (2013) proved that EO is more positively related to firm growth among firms with an intangible resources (such as intellectual property, specialized knowledge, reputation, etc.) than among firms lack such these resources, Moreno and Casillas (2008) failed to prove the moderating influence of the availability of resources on the EO–firm growth. Furthermore, Wiklund and Shepherd (2005) found that access to financial capital didn't moderate EO-firm performance.



CHAPTER III

RESEARCH QUESTION AND HYPOTHESES

Entrepreneurship researchers have conducted a lot of efforts in order to put on several typologies to explain alternative perspectives of entrepreneurship developed from different individual, organizational, or environmental factors to recognize how and why entrepreneurial orientation occurs. However, there is no broadly consensus regarding characteristics of entrepreneurship which may hinder progress of researchers toward building and testing the theory of entrepreneurship, and so investigating EO-firm performance relationship (Lumpkin & Dess, 1996).

The purpose of this study is to develop an integrative model for EO-firm performance relationship based on the previous studies, as well as examining the efficiency of this model using a sample from Turkish firms work in different manufacturing sectors in the Adana. The primary research question addressed in this study is:

To what degree does each of business strategy, organizational structure, environment, industry life cycle, and firm resources associate with EO, and affect EO-firm performance relationship?.

3.1. Research Model

Studies in business and entrepreneurship areas still largely based on practice, and aren't accompanied by concepts of absolute facts that are found in established fields (Watkins-Mathys & Lowe, 2005), even a lot of developed models are hardly to be tested empirically due to their complexity (Chell, 2007). Furthermore, a lot of researches argued that there is no unique or commonly accepted model and definition for the entrepreneurship (Beaver & Jennings, 2005). Based on the preceding researches such as Covin and Slevin (1991), Lumpkin and Dess (1996, 2001), Moreno and Casillas (2008), Slotwinski (2010), and Anderson and Eshima (2013), the study model was built to investigate the potential relationship among EO, business strategy, organizational structure, environmental uncertainty, industry life cycle, and firm resources as shown in figure 3.

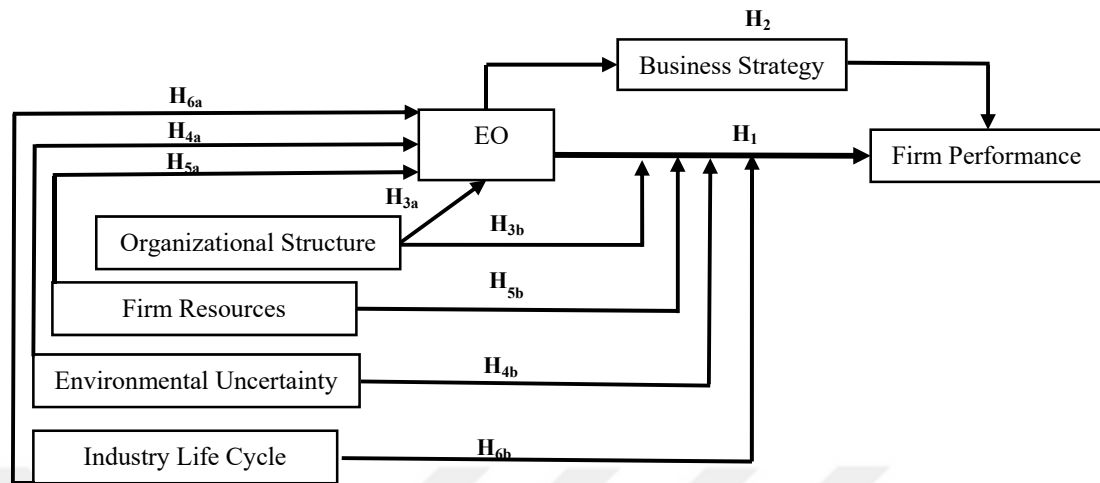


Figure 2. Research Model

3.2. Hypotheses

3.2.1. The Impact of EO on Firm Performance

Regardless of firm's context, some researchers attempted to directly examine the potential influence of EO on the firm performance or on some indicators of performance (firm growth, profitability, sales growth, employment growth, export performance, etc.). Entrepreneurship literatures stated that EO increases the growth, productivity, and performance of the firm (Uddin, Bose, & Yousuf, 2015). For instance, articles such as "Innovate or Die" (Young, 1994) and "Hooray for Risk" (Postrel, 1995) in Forbes magazine referred to the importance of entrepreneurial activities and their positive impact on performance/outcomes (Lumpkin & Dess, 2001). Therefore, firms who are innovative and introduce new products and technology, and the first movers which behave proactively and exploit the available opportunities and dominate the market before their competitors, and engage in risky projects with uncertain outcomes achieve extraordinary performance (Wiklund & Shepherd, 2003).

Most researchers investigated and approved the positive linear relationship between EO/sub-dimensions and outcomes of the firm, Such as, EO-firm performance linkage (Rosenbusch, Rauch, & Bausch, 2013; Miller & Breton-Miller, 2011; Keh, Nguyen, & Ng, 2007; Poon, Ainuddin, & Junit, 2006; Wiklund & Shepherd, 2003) and EO-firm

performance relationship over time (Wiklund, 1999), EO-international performance (Jantunen, Puumalainen, Saarenketo, & Kyläheiko, 2005), EO-export performance (Mostafa, Wheeler, and Jones, 2006) international EO-international performance of family firms (Hernández-Perlines, Moreno-García, & Yañez-Araque, 2016; Swoboda & Olejnik, 2016), EO-firm growth (Soininen et. al., 2012), EO-business performance in the Asian hotels (Jogarathnam & Tse, 2006), proactiveness-firm performance (Lumpkin & Dess, 2001). Conversely, some researchers found contradictory results such as Wang and Altinay (2010) who argued that EO positively associated with employment growth but not with sales growth in ethnic minority small firms. Altinay, Madanoglu, Vita, Arasli, and Ekinci (2016) stated EO is positively associated with sales growth, and market share growth, but not with employment growth of small and medium-sized enterprises. Lisboa, Skarmeas, and Saridakis (2016) proactiveness is positively associated with profitability, while innovativeness, and risk taking wasn't associated with profitability. Stenholm, Pukkinen, and Heinonen (2016) found that innovation was positively related to growth in family firms, but not in nonfamily firms, in contrast, risk taking was positively related to growth in nonfamily firms, but not in family firms, however, proactiveness was positively related to growth in both of family and nonfamily firms. Baker and Sinkula (2009) found that EO hadn't direct association with profitability. Messersmith and Wales (2011) found EO wasn't associated with sales growth of young firms in high technological industry. Naldi, Nordqvist, Sjöberg, and Wiklund (2007) posited that risk taking was negatively with performance in family firms

Despite the majority of studies addressed EO-firm outcomes linkage as a linear relationship, Tang, Tang, Marino, Zhang, and Li (2008) contended that the relationship between EO and firm performance in China was an inverse U-shaped. The economy in China was considered as a transition economy and the environment was dynamic and hostile since it was to some extent subjected to the governmental control and not driven by market decisions and activities (Tang & Tang, 2010). Consequently, Chinese firms with low EO had low performance because of the intensive completion. However, firms with high EO mayn't have competitive advantage needed for risky and innovative projects due to the absence of institutional support and organizational formalization, resulted in low performance, while, firms with medium EO associated with the best firm performance

(Tang et al., 2008). In the same context, Su, Xie, and Li (2011) partially agreed with what Tang et al. (2008) found, hence, Su et al. (2011) approved the inverted U-shape relationship between EO and firm performance in new ventures in China, while the relationship between EO and established firms performance in China is positive linear relationship. Seemingly, most previous studies investigated the linear relationship between EO and firm performance, only few studies done in China examined and approved the inverted U-shape relationship between EO and firm performance. Thus in this study, both linear and curvilinear relationships were investigated, and the following the hypotheses are developed:

Hypothesis 1_a (H_{1a}):

There is a positive linear relationship between EO and firm performance.

Hypothesis 1_b (H_{1b}):

There is an inverse U-shaped curve relationship between EO and firm performance, where firms with moderate level of EO outperform firms with low and high level of EO.

Considering the studies investigated the construct of EO as a multidimensional construct, some studies investigated the EO construct as a latent construct, whereas EO was defined as the common variance among the sub-dimensions of innovativeness, proactiveness, and risk taking. Hence, EO was manifested by its covaried sub-dimensions of innovativeness, proactiveness, and risk taking, and the variance of EO exhibited by the variance in the innovativeness, proactiveness, and risk taking (George, 2011). Other studies such as Lumpkin and Dess (1996) suggested that EO's sub-dimensions may vary independently. As referred by Law, Wong, & Mobley (1998), EO will be represented by the combination of its sub-dimensions: the innovativeness, proactiveness, and risk taking that may or mayn't correlated. Therefore, the entrepreneurial orientation of firms were demonstrated in various levels of innovativeness, proactiveness, and risk taking and classified into different profiling levels (Covin & Wales, 2018). Entrepreneurial firms outperform conservative firms (Anderson & Eshima, 2013). Firms are addressed as entrepreneurial or conservative by identifying the extent to which their top managers are

tended to take risk, innovate to get a good competitive position, whereas top managers in entrepreneurial firms are innovative, proactive and risk taker. While top managers in conservative firms are non-innovative, reactive, and rarely to engage in risky business (Covin & Slevin, 1989). Thus the following hypothesis are developed.

Hypothesis 1_c (H_{1c}):

Firms with various entrepreneurial strategic posture perform differently, where entrepreneurial firms (high innovativeness, high proactiveness, and high risk taking) outperform conservative firms (low innovativeness, low proactiveness, and low risk taking).

3.2.2. The EO-Business Strategy and Business Strategy-Firm Performance Linkages

Business strategy and EO are distinct concepts, whereas EO is a strategy-making-process, while business strategy is the content of EO that describes and channel it, hence, entrepreneurially oriented firms aim to develop specific types of business strategies that lead to different performance (Lechner & Gudmundsson, 2014). According to Porter's (1980) generic strategies, differentiation strategy are closely associated with entrepreneurial activities than cost leadership strategies. Differentiators depend on product development, marketing activities, and effective coordination to create unique products and services for customers. While cost leaders tend to reduce the expenditures, and the investment in research and development (R&D) which in turn reduce the level of innovation of the firm and increase the risk taking level due to the scale of economies compared to the differentiation strategy (Lechner & Gudmundsson, 2014; Dess, Lumpkin, & McGee, 1997). It is noticeable that Porter's (1980) generic strategies can be compared to Miles and Snow's (1978) typology, hence differentiation strategy is equivalent to prospector strategy, cost leadership strategy is equivalent to defender strategy, “stuck in the middle” or no strategy is equivalent to reactor strategy, and analyzer strategy lies between defender and prospector strategy (Borch, Huse, & Senneseth, 1999). Some researchers argued that the impact of business strategy on EO-firm performance link is a mediating impact (Hernández-Perlines et al., 2016; Lechner & Gudmundsson, 2014; Moreno & Casillas, 2008; Borch, Huse, & Senneseth, 1999). Therefore, Moreno and Casillas (2008) found that the greater the firm act

entrepreneurially, the more likely it engages in a prospector strategy. Lechner and Gudmundsson (2014) stated that Innovativeness was highly related to differentiation strategy (prospector strategy), since prospector strategy requires innovative activities lead to new products development that add the value to the customers and achieve a competitive position in the market, but risk-taking was negatively associated with differentiation (prospector strategy), because prospector strategy is preferable strategy to control the fixed cost, where prospectors require few irreversible investments, in contrast to their proposition stated that defenders who are risk takers invest in irreversible resources in order to achieve the economies of scale the results showed inverse relationship between risk taking cost leadership (defender strategy) strategies. But there were no support for the positive relationship between proactiveness and prospector strategy, where the proposition argued that proactive firms are pioneers and first movers to exploit all the opportunities in the market to gain a competitive advantage which is positively associated with prospector strategy. The second proposition referred to the negative relationship between proactiveness and defender strategy also was rejected, where the proposition indicated latent firms require stable market and reducing the cost of the production, sourcing, and distribution channels that positively associated with defender strategy. Both strategies were associated with firm performance. Similarly, Hernández-Perlines et al. (2016) approved the mediating influence of competitive strategy which is a combination between differentiation and cost leadership (analyzer) on the relationship between international EO and international performance of family-owned businesses. While Tang and Tang (2012) argued that influence of business strategy on EO-firm performance link is a moderating influence. The results showed that prospector and analyzer strategies alleviated the inverted U shape of EO-firm performance significantly. However, Linton and Kask (2017) contended that some combinations between EO and business strategy have extraordinary performance, whereas there were two combinations from EO and business strategy associated with higher performance. First, the combination of differentiation strategy, innovativeness and proactiveness. Second, the combination of mixed strategy, risk aversion, reactivity, and low innovativeness. Compatible with most previous studies, this study will investigate the impact of business strategy as a mediator on EO-firm performance relationship. Therefore the hypotheses are listed as below:

Hypothesis 2 (H₂):

Entrepreneurial orientation is positively associated with business strategy.

Hypothesis 2_a (H_{2a}):

The greater the firm's entrepreneurial orientation, the more likely it will be to engage in a prospector strategy.

Hypothesis 2_b (H_{2b}):

Innovativeness is positively associated with a prospector strategy.

Hypothesis 2_c (H_{2c}):

Innovativeness is negatively associated with a defender strategy.

Hypothesis 2_d (H_{2d}):

Proactiveness is positively associated with a prospector strategy.

Hypothesis 2_e (H_{2e}):

Proactiveness is negatively associated with a defender strategy.

Hypothesis 2_f (H_{2f}):

Risk-taking is negatively associated with a prospector strategy.

Hypothesis 2_g (H_{2g}):

Risk-taking is positively associated with a defender strategy.

Hypothesis 2_h (H_{2h}):

All business strategies is positively associated with firm performance.

3.2.3. The Impact of Organizational Structure on EO and EO-Firm Performance linkage

Scholars theoretically have addressed the entrepreneurship-organizational structure relationship, they found that entrepreneurial orientation is positively associated with higher firm performance when firms is managed through an organic structure than mechanistic structure (Jogaratham & Tse, 2006; Lumpkin & Dess, 1996; Covin & Slevin, 1991). Covin & Slevin (1991) stated that organic structures foster the firms to discover and exploit opportunities in the market through facilitation and motivation, and suggested that EO is negatively associated with structural formalization and centralization. kreiser & Davis (2010) theoretically studied the impact of organizational structure, environment on EO-firm performance, and proposed firms can achieve higher performance when they meet one of

the following combinations: first, dynamic and munificent environments, highly innovative and proactive firms with moderate-to-high risk taking, and organic structure; second, stable and munificent environments, moderate-to-high innovative and proactive firms with moderate risk taking, and combination of mechanistic and organic structure; third, dynamic and hostile environments, moderate-to-high innovative and proactive firms with moderate risk taking, combination of mechanistic and organic structure; fourth, stable and hostile environments, low proactive, innovative, and risk taker firms with mechanistic structure. Therefore the hypotheses are developed as below:

Hypothesis 3_a (H_{3a}):

Entrepreneurial orientation is positively associated with organic structure.

Hypothesis 3_b (H_{3b}):

Organizational structure moderates the relation between EO and firm performance, where EO is more positively related to firm performance among firms with organic structures than among firms with mechanistic structures.

3.2.4 The impact of Environmental Uncertainty on EO and EO-Firm Performance

Linkage

Environmental heterogeneity, dynamism, and hostility were positively associated with innovation, and risk taking (Miller, 1983). Miller and Friesen (1982) also proved the positive relationship between both of environmental dynamism and heterogeneity, and firm's entrepreneurial position. Khandwalla (1987), found that firms can successfully compete in dynamic environments through taking risky decisions and actions, and an innovative behavior, and proactive actions in the market. Firms that act more proactively and aggressively and take risks in dynamic environment will perform better (Kreiser & Davis, 2010, Casillas et al., 2010; Lumpkin & Dess, 2001). Firms applying a high entrepreneurial position achieve a higher performance in hostile environment, while a more conservative firms perform better in a more benign environment (Covin & Slevin, 1989). In extremely hostile environments, the innovative firms will have greater degrees of performance and growth, while risk averse firms have a lower growth, than risk taker firms. In this environment, only businesses that show proactive behavior have the ability to obtain

higher growth rates compared to their competitors (Casillas et al., 2010). Rosenbusch, Rauch, and Bausch (2013) found that environmental complexity, dynamism, and munificence are positively related to EO. In contrast to what most researchers' results, Anderson, Kreiser, Kuratko, Hornsby, and Eshima (2015) found environmental hostility is negatively associated with entrepreneurial behaviors (innovativeness and proactiveness). Innovative firms prefer munificent environment rather than hostile environment due to the availability of resources required to new products and technological development. Furthermore, proactive firm are positively associated with firm performance in munificent environment since they can benefit from the available opportunities to attain a competitive advantage in market. Risk-taking firms also have positive linkage with firm performance in munificent environment rather than in hostile environment. Hence, firms avoid to take risk in hostile environment to maintain their survival due to the lack of the resources in the market (Kreiser & Davis, 2010). Conversely, Wiklund and Shepherd (2005) found that environmental dynamism didn't moderate EO-firm performance. Moreno & Casillas (2008) suggested an insignificant impact of environmental dynamism and hostility on EO-firm performance relationship. Becherer and Maurer (1997) also failed to prove the moderating impact of environmental hostility on the relationship between entrepreneurial orientation and the firm's profits. As per previous researches, the results regarding the potential influence of environmental uncertainty on EO-firm performance relationship are contradictory, some of them prove the influence of environmental uncertainty and the others rejected, these following hypotheses will investigate the relationship:

Hypothesis 4_a (H_{4a}):

Entrepreneurial orientation is associated with environmental uncertainty.

Hypothesis 4_{aa} (H_{4aa}):

Entrepreneurial orientation is associated with environmental dynamism.

Hypothesis 4_{ab} (H_{4ab}):

Entrepreneurial orientation is associated with environmental heterogeneity.

Hypothesis 4_{ac} (H_{4c}):

Entrepreneurial orientation is associated with environmental hostility.

Hypothesis 4_b (H_{4b}):

Environmental uncertainty moderates the relation between EO and a firm performance.

Hypothesis 4_{ba} (H_{4ba}):

EO is more positively related to firm performance among firms in dynamic environments than in stable environments.

Hypothesis 4_{bb} (H_{4bb}):

EO is more positively related to firm performance among firms in heterogeneous environments than in homogeneous environments.

Hypothesis 4_{bc} (H_{4bc}):

EO is more positively related to firm performance among firms in hostile environments than in benign environments.

3.2.5. The Impact of Firm Resources on EO, and EO-Firm Performance linkage

A firm's ability to engage in entrepreneurial behavior relies partially on its resources and competencies which include monetary resources, plant and equipment, human resources, etc.. Resources and capabilities of the firm influence entrepreneurial strategic actions (innovative, proactive, and risk-taking) (Covin & Slevin, 1991), and so the relationship between a firm's EO and performance (Lumpkin & Dess, 1996). Ibeh (2003) stated that firms that allocate resources and incentives to entrepreneurial ventures are high export-entrepreneurially oriented. While, Anderson and Eshima (2013) confirmed that EO is more positively related to firm growth among firms with intangible resources than among firms lack these resources, but Moreno and Casillas (2008) failed to prove the moderating influence of the availability of resources on the EO–firm growth link. Different results of previous researches require more investigation to the following hypotheses. Wiklund and Shepherd (2005) found that Access to financial capital didn't moderate EO-firm performance.

Hypothesis 5_a (H_{5a}):

Firm resources are positively associated with entrepreneurial orientation in firms.

Hypothesis 5_b (H_{5b}):

EO is more positively related to firm performance among firms with an access to resources than among firms lack resources advantage.

3.2.6. The Impact of Industry Life Cycle on EO, and EO-Firm Performance Linkage

Few studies discussed the potential influences of industry life cycle on EO-firm performance relationship. Hence, Covin & Slevin (1991) proposed that EO is prevalence among firms work in early industry life cycle stages. Covin & Slevin (1990) argued that new ventures in early industry life cycle stages perform better than new ventures in more latter industry life cycle stages due their entrepreneurial behavior. Lumpkin & Dess (2001) stated that in the early industry stages, firms had greater performance when they are proactively oriented, but proactiveness mayn't be appropriate in established and mature industries. A competitively aggressive strategy was proposed to firms in more mature industry stages. Therefore, the study suggests firms are recommended to act entrepreneurially in the early stages of the industry life cycle than in the later industry life cycle stages, and that entrepreneurial behaviors were associated with higher performance. Accordingly, hypotheses are developed as follows:

Hypothesis 6_a (H_{6a}):

Firms generally behave entrepreneurially in early stages of industry life cycle.

Hypothesis 6_b (H_{6b}):

Stage of industry life cycle will moderate the relationship between EO and firm performance. EO is more positively related to firm performance among firms whose industries are in their early life cycle stages than among firms whose industries are in their latter life cycle stages.

CHAPTER IV

METHODS

4.1. Research Population

The population of the research is the medium sized manufacturing firms in Adana. The economic activity of Adana passed through several stages. In the 16th century of Ottoman Empire, Adana's economy based on agriculture and husbandry. The industry was limited to some small workshops relied on the raw materials coming from the farms. The workshops mainly produced olive, cotton, and sesame oils, soaps, candles, cotton, and silk (Taş, 1998). In 1930s, industrial activities started based on the consumptions and available raw materials getting from farms. In 1940s, large-sized factories were established and engaged in the production process. In 1950s, building materials was produced due to the rapid urbanization of Adana. In 1960s, factories entered various sectors, the holding companies appeared in 1970s. In 1980s, the Turkish government established specific industrial areas equipped with all needs for the factories, products included food, alcohol, tobacco, weaving, clothing, leather, forest products, furniture, paper, paper printing, chemical, petroleum, coal, rubber, plastic and plastic products, stone and earth related industries, metal goods, machinery and equipment, transportation vehicles, and scientific and professional tools (T.C. Maliye Bakanlığı: Adana Defterdarlığı, 2012). The industrialization in Adana rapidly grew up, and evolved over years. Table 1 shows the sectoral distribution of manufacturing industries in Adana according to net sales (turnover). Textile, food, chemical, and rubber and plastic sectors were the main industries in Adana city (Karakuş, 2016, p.2).

Table 1.

The Sectoral Distribution of Manufacturing Industries in Adana According to Net Sales (Million TL)

Sector	2010	2011	2012	2013	2014
Textile Products	1894	2593	2918	3129	3379
Food Products	1818	2326	2622	2632	3037
Chemical Products	2122	1814	1780	2092	2416
Rubber and Plastic Products	812	1010	761	934	1139
Motorized Vehicle, and Trailer	971	1344	1427	110	1083
Non-Metallic Mineral Products	557	666	654	1013	948
Fabricated Metal Products	460	720	728	759	882
Other Manufacturing	252	338	503	210	740
Clothing Products	245	343	422	340	612
Basic Metal Products	164	208	266	537	563
Machines and Equipments	225	333	454	764	441
Furniture Manufacturing	236	328	315	327	395
Installation and Repair of Machinery and Equipment	128	140	138	186	247
Papers and Paper Products	233	272	292	438	213
Wood, Wooden Products	109	133	156	172	206
Electrical Equipments	106	169	149	118	151
Leather and Related Products	63	88	165	120	142
Coke Coal and Refined Petroleum Products	45	79	169	103	82
Printing and Reproduction of Recorded Media	64	43	42	50	48
Manufacture of Beverages	3	6	13	16	42
Computers, Electronic and Optical Products				5	2

4.2. Sampling and Data Collection Procedure

A random sample of medium-sized enterprises is drawn from manufacturing companies located in Adana, and officially registered in industry chamber of Adana. The selection process ensures each company in the population has an equal probability of being selected as a part of the sample (Lamb, Hair, & McDaniel, 2008, p.256), as the sample is representative of population its characteristics approximate the characteristics of the total population (Bloor & Wood, 2006, p.153). Medium-sized enterprises can be defined as

firms employ from 50 to 250 employees, and above 50 million Euro turnover according to European Union (Center for strategy and evaluation services, 2012, p.8).

A Turkish research firm which has a highly experienced in the researching techniques, and a good knowledge of manufacturing companies in Adana is employed to manage the interviews with respondents, and fill in the questionnaires to gain time, reduce efforts, and increase the quality and the efficiency of data collection process. Structured interview is conducted with the participants to fill in questionnaires and collect data. The data is acquired from participants who has the ability, and substantial knowledge to answer the questions related to entrepreneurial orientation, business strategy, organizational structure, industry life cycle, environmental uncertainty, firm resources, and firm performance such as higher level managers (firm owner, chief executive officers, general manager, etc.), or middle level managers who are in charge of a main function like production, procurement, marketing, and research and development managers etc..

4.3. Instruments

A structured questionnaire shown in Appendix II is designed and translated to Turkish language by professional academics to measure all various relationship in proposed model represented in figure 3. The Turkish version of the questionnaire shown in Appendix I is divided into eight sections: section 1 measures entrepreneurial orientation in the firm, section 2 measures the existed business strategy in the firm, section 3 measures the existed organizational structure in the firm, section 4 measures the environmental uncertainty the firm experiences, section 5 measures the accessibility of the firm to resources relative to its rivals, section 6 measures the industry life cycle of the firm, section 7 measures the firm performance, and finally section 8 gathers the demographic information of the firm.

4.3.1. Entrepreneurial Orientation Scale

The researcher prefers to use the scale developed by Covin and Slevin (1989) to measure entrepreneurial orientation, the scale proposes nine items, 7-point semantic differential scale with a neutral midpoint, three items to measure a firm's tendency towards

innovation, three items to measure a firm's proactiveness, and three items to measure a firm's risk-taking. Appendix III shows the items and sub-dimensions of EO scale.

4.3.2. Business Strategy

Based on Miles and Snow's (1978) strategic types, paragraph type descriptions are used, each paragraph identified one of the four strategies: defender, prospector, analyzer, and reactor. Managers are asked to choose their business strategy from four paragraphs according to their behavior in the firms. The scale has been used in several studies (Wang, 2008; Lukas, 1999; Woodside, Sullivan, & Trappey, 1999; Snow & Hrebiniak, 1980) and has been reported as a reliable and valid measuring tool. Appendix IV describes the types of business strategy.

4.3.3. Organizational Structure

Organizational structure of the firms is measured using Khandwalla's (1976/77) scale that was used by several researchers such as Covin and Slevin (1989), and Nandakumar et al., (2010). Seven-items scale to measure organicity in the firms which can be defined as the extent to which firms are structured in mechanistic versus organic structure. The respondents are asked to indicate on seven-point Likert-type scales, the extent to which each item of the scale describes the structure of their firms. Each firm's mean rating on these seven items is measured and considered as that firm's organicity index. The higher the organicity index indicate the firm's structure is more organic, Appendix V includes the items of organizational structure.

4.3.4. Industry Life Cycle

Industry life cycle is measured by asking respondents to write the percentage of sales revenues accounted for products/services lied in each of four industry stages: introduction (I), growth (G), maturity (M), decline (D). This scale is used by various researchers such as Lumpkin and Dess (2001), and Kotha (1988) in their study. Appendix VI includes the questions of industry life cycle scale. The average of industry life cycle is

measured from the following equation, the higher average refers to later industry life cycle stage:

The average of industry life cycle = $(1 \times I) + (2 \times G) + (3 \times M) + (4 \times D)$.

4.3.5. Environmental Uncertainty

The environmental uncertainty construct measures the extent of dynamism, heterogeneity, and hostility in the external environment of the firm. The scale developed by Miller and Friesen (1983), and Sabherwal and King (1992). 12 items scale is used to measure environmental uncertainty. The respondents are asked to evaluate the environmental situation endured by the firms on seven-point Likert-type scale, Appendix VII includes the sub-dimensions and items of environmental uncertainty.

4.3.6. Firm Resources

The scale developed by Almeida (1999) is used to test the degree to which the firm possesses or has access to the resources and capabilities compared to its competitors. Respondents are asked to remark the degree to which they have access to the resources and capabilities in firms, Appendix VIII includes the sub-dimensions and items of firm resources.

4.3.7. Firm Performance

In this study, the scale developed by Nandakumar, Ghobadian, & O'Regan (2010) is used. They developed this scale based on the study of Ramanujam and Venkatraman (1987). Organizational performance is measured using subjective and objective measures, Objective scale is defined as the degree to which the organization has achieved its short-term and long-term objectives, while in subjective scale, respondent is asked to indicate the degree to which his firm has achieved its goals compared to its competitors in the last five years, where respondent evaluates the firm performance relative to its competitors' performance in terms of sales, profit, market share, overall firm performance and competitive position (Nandakumar et al., 2010). Appendix IX shows the sub-dimensions and questions of firm performance.

4.4. Demographic Information

This section contains the firm age, firm size, and industry type, and respondent characteristics participated in this study such as: gender, age, education level, managerial position, and the department, which will be used later for descriptive and control purposes. Firm size, and firm age are considered as control variables. They are measured using the logarithm of the number of employees, and firm age (years) respectively. Since EO–firm performance relationship is stronger in micro businesses than in small businesses, but there are no differences between micro and large businesses or between small and large businesses (Rauch, Wiklund, Lumpkin, & Frese, 2009), as well as the younger firms tend to be more entrepreneurial than those that are older (Anderson & Eshima, 2013), where older firms are less positively affected by EO (Rauch et al., 2009). Moreover, industries such as manufactures of other non-metallic mineral products, and basic metals are controlled, since they were correlated with EO, and firm performance respectively.

4.5. Analytic Techniques

The following steps are applied to test the hypotheses. First, cleaning data from missing data, and outliers, and eliminating the cases which may affect the results of the study. Second, investigating the descriptive statistics of the sample presented in firm age, firm size, industry type, respondent age, gender, educational level, managerial position, and functional department. Third, exploratory factor analysis is conducted to investigate the dimensionality of the scales for each of EO, environmental uncertainty, firm resources, firm performance. Furthermore, consistency of all scales are examined through reliability test. Fourth, the hypotheses of study are tested by hierarchal regression, multinomial logistic regression analyses, and analysis of variance (ANOVA).

4.6. Validity and Reliability of Study Scales

Exploratory factor analysis is conducted to investigate the factor structure, and dimensionality of measurement scales for EO, environmental uncertainty, firm resources, objective fulfillment, relative competitive performance scales. After several attempts of factor analysis for database, addition and deletion of items are done to identify valid factors

covered the researched areas (Tabachnick & Fidell, 2014, p.612). Cronbach's alpha statistics is used to measure the internal consistency and the reliability of the instruments

4.6.1. EO Scale: Validity and Reliability Test

Considering the inter-correlation among 9 items of EO's scale. Items 3, 5, and 6 have inter-correlations less than 0.3, so, they are eliminated from next analyses. Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity are conducted to investigate the appropriateness of factor analysis for this data. Kaiser's (1970, 1974) measure of sampling adequacy which is the ratio of the sum of squared correlations to the sum of squared correlations plus the sum of squared partial correlations, for KMO equal or above 0.6 and with significance level of Bartlett's Test of Sphericity, factor analysis is good for data (Tabachnick & Fidell, 2013, p.619). Table 2 shows the results of analysis.

Table 2.

EO Scale: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.605
Bartlett's Test of Sphericity	51.934
	10
	.000

Since Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is $0.605 > 0.6$ and Bartlett's Test of Sphericity (Approximate Chi-Square) is significant 51.934 ($p=0 < 0.05$), factor analysis test is appropriate for this data. All diagonal values in the anti-image correlation matrix are greater than 0.5, and no more items are removed. Table 3 shows the communalities indicates the variance of each item attributed to factors, all communalities are greater than 0.4 which is the minimum acceptable value for social researches (Alper, 2017, p.290).

Table 3.

EO Scale: Communalities

		Initial	Extraction
I1- In general, the top managers of my firm favor a strong emphasis on:			
The marketing of tried and true products and services.	A strong emphasis on R&D, technological leadership, and innovations	1.000	.657
I2- How many new lines of products or services has your firm marketed in the past 5 years?.			
No new lines of products or services	Very many new lines of products or services	1.000	.671
Typically responds to actions which competitors initiate	Typically initiates actions which competitors then respond to		
I7- In general, the top managers of my firm have		1.000	.466
A strong proclivity for low risk projects (with normal and certain rates of return).	A strong proclivity for high-risk projects (with chances of very high returns).		
I8- In general, the top managers of my firm believe that		1.000	.656
Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior.	Owing to the nature of the environment, bold wide-ranging acts are necessary to achieve the firm's objectives.		
I9- When confronted with decision-making situations involving uncertainty, my firm		1.000	.506
Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions.	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential.		

Extraction Method: Principal Component Analysis

Exploratory factor analysis with Varimax rotation is employed to identify the sub-dimensions of EO and its related items. Table 4 shows the percentage of variance accounted for by the two factors for eigenvalues greater than 1 after extraction and rotation. Two factors represent 59.108% of the variance of 5 items. The first and the second factors represent 35.144%, and 23.964% of the variance of all items respectively.

Table 4.

EO Scale: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Varimax
							Rotation
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	1.757	35.144	35.144	1.757	35.144	35.144	1.521
2	1.198	23.964	59.108	1.198	23.964	59.108	1.434
3	.789	15.770	74.878				
4	.644	12.872	87.750				
5	.612	12.250	100.000				

Extraction Method: Principal Component Analysis.

Compatible with what Covin and Slevin's (1989) suggested, there are two distinct sub-dimensions of EO: innovation and risk taking. Tabachnick and Fidell (2013) stated that the cutoff for factor loadings is a choice for the researcher. Hair et al. (2014) suggested that minimal level for factor loadings is in the range of $\pm.30$ to $\pm.40$, factor loadings with $\pm.50$ or greater are considered a significant factor loading, factor loadings exceeded 0.70 are considered well-defined structure. In the same context, Comrey and Lee (1992) stated that factor loadings greater than .71 are excellent, .63 very good, .55 good, .45 fair and .32 poor. In accordance with what Tabachnick and Fidell (2013) recommended, in this study, researcher choses a cutoff of the factor loadings to be greater than 0.4, so any item with a factor loading greater than 0.4 will be included in the analysis. Table 5 shows the factor loadings of the items on two dimension after deleting item 4 due to the cross loading on factor 1 and factor 2.

Table 5.

EO Scale: Rotated Component Matrix^a

		Component	
		1	2
I8- In general, the top managers of my firm believe that		.808	
Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior.	Owing to the nature of the environment, bold wide-ranging acts are necessary to achieve the firm's objectives.		
I9-When confronted with decision-making situations involving uncertainty, my firm		.710	
Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions.	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential.		
I7-In general, the top managers of my firm have		.591	.340
A strong proclivity for low risk projects (with normal and certain rates of return).	A strong proclivity for high-risk projects (with chances of very high returns).		
I2- How many new lines of products or services has your firm marketed in the past 5 years?.			.819
No new lines of products or services	Very many new lines of products or services		
I1- In general, the top managers of my firm favor a strong emphasis on:			.801
The marketing of tried and true products and services.	A strong emphasis on R&D, technological leadership, and innovations		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Accordingly, EO scale consisted of two sub-dimensions: innovation and risk taking. Innovation includes 2 items: 1 and 2, and risk taking includes 3 items: 7, 8, and 9.

Table 6.

EO Scale: Descriptive Statistics, and Reliability Test

	Items No	Minimum Value	Maximum Value	Mean	Standard Deviation	Cronbach's Alpha
EO	5	1	6.6	4.2079	1.19191	0.536
Innovation	2	1	7	4.8281	1.69231	0.540
Risk Taking	3	1	6.67	3.7944	1.41928	0.521

There is no consensus among researchers about the acceptable cut-off for the reliability, it was recommended that scale with Cronbach's Alpha (α) less than 0.5, equal and greater than 0.5 and less than 0.7, equal and greater than 0.7 and less than 0.9, and equal and greater than 0.9 has low, moderate, high, and excellent reliability respectively (Hinton, 2004, p.364). As shown in table 6, the reliability of EO ($\alpha=0.536$), and its sub-dimensions: innovation ($\alpha=0.540$), and risk taking ($\alpha=0.521$) are moderate.

4.6.2 Organizational Structure Scale: Reliability Test

Organizational structure scale is measured through Khandwalla's (1977) organicity index that indicates to what extent the firms adopt mechanistic or organic structure. Higher organicity index shows organic structure, however, lower organicity index refers to mechanistic structure. As shown in table 7, the reliability of organizational structure scale is moderate ($\alpha=0.588$).

Table 7.

Organizational Structure Scale: Descriptive Statistics, and Reliability Test

	Items No	Minimum Value	Maximum Value	Mean	Standard Deviation	Cronbach's Alpha
Organizational Structure	7	1.43	7	3.985	1.0633	0.588

4.6.3 Environmental Uncertainty Scale: Validity and Reliability Test

The results of Kaiser-Meyer-Olkin (KMO) and Bartlett's test for environmental uncertainty are seen in table 8 after eliminating item 3 due to its low inter-correlation (less than 0.3).

Table 8.

Environmental Uncertainty Scale: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.735
Bartlett's Test of Sphericity	Approx. Chi-Square	394.605
	df	55
	Sig.	.000

Since Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is $0.735 > 0.6$ and Bartlett's Test of Sphericity (Approximate Chi-Square) is 394.605 ($p=0 < 0.05$), factor analysis test is appropriate for this data. All the diagonals in the anti-image correlation matrix are greater than 0.5, and all items are included in factor analysis. Table 9 shows all communalities are greater than 0.5.

Table 9.

Environmental Uncertainty Scale: Communalities

	Initial	Extraction
I1- Products/services in our industry become obsolete very quickly.	1.000	.685
I2- The products/services technologies in our industry change very quickly.	1.000	.503
I4- We can predict what our products/services demand changes	1.000	.463
I5- In our industry, there is considerable diversity in customer buying habits	1.000	.627
I6- In our industry, there is considerable diversity in nature of competition.	1.000	.697
I7- In our industry, there is considerable diversity in product lines.	1.000	.641
I8- The survival of this organization is currently threatened by scarce supply of labor.	1.000	.521
I9-The survival of this organization is currently threatened by scarce supply of materials.	1.000	.544
I10- The survival of this organization is currently threatened by tough price competition.	1.000	.610
I11-The survival of this organization is currently threatened by tough competition in product/service quality.	1.000	.660
I12-The survival of this organization is currently threatened by tough competition in product/service differentiation.	1.000	.620
Extraction Method: Principal Component Analysis		

Exploratory factor analysis with Varimax rotation is applied to examine the dimensionality of environmental uncertainty scale and its related items. As the original scale suggested, there are three distinct sub-dimensions for environmental uncertainty: environmental dynamism, environmental heterogeneity, and environmental hostility as shown in table 10. The percentage of variance accounted for by the three factors for eigenvalues greater than 1 after extraction and Varimax rotation. Three factors explain 59.73% of the variance of 11 items. First, second, and third factors represent 28.98%, 20.79%, and 9.95% of the variance of the scale's items respectively.

Table 10.

Environmental Uncertainty Scale: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Varimax
	% of		Cumulative	% of		Cumulative	Rotation
	Total	Variance	%	Total	Variance	%	Total
1	3.188	28.984	28.984	3.188	28.984	28.984	2.808
2	2.287	20.793	49.777	2.287	20.793	49.777	2.197
3	1.095	9.956	59.733	1.095	9.956	59.733	1.565
4	.929	8.443	68.175				
5	.859	7.809	75.984				
6	.607	5.520	81.504				
7	.524	4.760	86.265				
8	.490	4.452	90.717				
9	.364	3.313	94.030				
10	.346	3.149	97.179				
11	.310	2.821	100.000				

Extraction Method: Principal Component Analysis.

As shown in table 11, all items load greater than 0.4 on one factor. Accordingly, environmental uncertainty scale consisted of three sub-dimensions: environmental dynamism, environmental heterogeneity, and environmental hostility. Environmental dynamism includes 2 items: 1 and 2, environmental heterogeneity includes 4 items: 4, 5, 6, and 7, and environmental hostility includes 5 items: 8, 9, 10, 11, and 12.

Table 11.

Environmental Uncertainty Scale: Rotated Component Matrix^a

	Component		
	1	2	3
I11- The survival of this organization is currently threatened by tough competition in product/service quality.	.792		
I12- The survival of this organization is currently threatened by tough competition in product/service differentiation.	.775		
I10- The survival of this organization is currently threatened by tough price competition.	.737		
I9- The survival of this organization is currently threatened by scarce supply of materials.	.698		
I8- The survival of this organization is currently threatened by scarce supply of labor.	.670		
I6- In our industry, there is considerable diversity in nature of competition.		.818	
I7- In our industry, there is considerable diversity in product lines.		.740	
I5- In our industry, there is considerable diversity in customer buying habits.		.638	.469
I4- We can predict what our products/services demand changes.		-.607	
I1- Products/services in our industry become obsolete very quickly.			.784
I2- The products/services technologies in our industry change very quickly.			.678

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Table 12 shows the reliability of environmental uncertainty scale ($\alpha=0.753$), and its sub-dimensions: environmental heterogeneity ($\alpha=0.785$) and environmental hostility ($\alpha=0.794$) are high, however environmental dynamism has low reliability ($\alpha=0.492$).

Table 12.

Environmental Uncertainty Scale: Descriptive Statistics and, Reliability Test

	Items No	Minimum Value	Maximum Value	Mean	Standard Deviation	Cronbach's Alpha
Environmental Uncertainty	11	1	7	3.830	0.9942	0.731
Environmental Dynamism	2	1	7	4.043	1.654	0.492
Environmental Heterogeneity	4	1	7	4.483	1.0945	0.516
Environmental Hostility	5	1	7	3.221	1.4853	0.794

4.6.4 Firm Resources Scale: Validity and Reliability Test

Table 13 shows the results of Kaiser-Meyer-Olkin (KMO) and Bartlett's test for firm resources scale after removing item 8 due to its lower communality.

Table 13.

Firm Resources Scale: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.754
Bartlett's Test of Sphericity	Approx. Chi-Square	568.335
	df	55
	Sig.	.000

Since Kaiser-Meyer-Olkin Measure of Sampling Adequacy is $0.754 > 0.6$ and Bartlett's Test of Sphericity (Approximate Chi-Square) is 568.335 ($p=0 < 0.05$). The diagonal values in the anti-image correlation matrix are greater than 0.5, so all items are retained for factor analysis. Table 14 indicates communalities are greater than 0.4.

Table 14.

Firm Resources Scale: Communalities

	Initial	Extraction
I1- Access to capital (debt, equity, etc.).	1.000	.789
I2- Relationship with bankers and financier.	1.000	.762
I3- Management of the firm's working capital.	1.000	.582
I4- Skills in the development of new products.	1.000	.811
I5- The rate of new product development.	1.000	.493
I6- Ability to develop proprietary technology.	1.000	.464
I7- Ability to retain key employees.	1.000	.792
I9- Quality control system.	1.000	.723
I10- Management information systems.	1.000	.450
I11- Reputation for customer service.	1.000	.643
I12- Ability to retain customers	1.000	.632

Extraction Method: Principal Component Analysis

Exploratory factor analysis with Varimax rotation is employed to identify the sub-dimensions of firm resources scale and its related items. In contrast to Almeida's (1999) firm resources scale suggested 5 sub-dimensions: financial, technology, skill, system, and service resources. As shown in table 15, factor analysis indicates that there were three factors for eigenvalues greater than 1 after extraction. Three factors represent 64.922% of the variance of 12 items. First, second, and third factors represent 39.009%, 15.376%, and 10.537% of the scale's variance respectively.

Table 15.

Firm Resources Scale: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Varimax
	% of		Cumulative	% of		Cumulative	Rotation
	Total	Variance	%	Total	Variance	%	Total
1	4.291	39.009	39.009	4.291	39.009	39.009	2.964
2	1.691	15.376	54.385	1.691	15.376	54.385	2.101
3	1.159	10.537	64.922	1.159	10.537	64.922	2.076
4	.939	8.538	73.460				
5	.726	6.600	80.060				
6	.621	5.642	85.702				
7	.400	3.639	89.341				
9	.372	3.382	92.723				
10	.347	3.158	95.881				
11	.255	2.319	98.200				
12	.198	1.800	100.000				

Extraction Method: Principal Component Analysis.

As shown in table 16 all items have higher factor loading on first and second factors, so, the third factor is discarded. Accordingly, the two factors explain 54.385% of firm resources scale. The sub-dimensions of firm resources are: financial resource includes 2 items 1 and 2, and non-financial resource includes 9 items: 3, 4, 5, 6, 7, 9, 10, 11, and 12.

Table 16.

Firm Resources Scale: Component Matrix^a

	Component		
	1	2	3
I12- Ability to retain customers	.765		
I9- Quality control system.	.716		-.412
I11- Reputation for customer service.	.679		-.417
I10- Management information systems.	.641		
I5- The rate of new product development.	.641		
I4- Skills in the development of new products.	.636	-.396	.499
I6- Ability to develop proprietary technology.	.628		
I7- Ability to retain key employees.	.622		
I3- Management of the firm's working capital.	.605	.335	.322
I1- Access to capital (debt, equity, etc.).	.413	.786	
I2- Relationship with bankers and financier.	.434	.748	

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

As shown in table 17, firm resources scale ($\alpha=0.832$), and its sub-dimensions: financial resources scale ($\alpha=0.780$) and non-financial resources scale ($\alpha=0.844$) are highly reliable scales.

Table 17.

Firm Resources Scale: Descriptive Statistics, and Reliability Test

	Items No	Minimum Value	Maximum Value	Mean	Standard Deviation	Cronbach's Alpha
Firm Resources	11	2.55	7	5.638	.8164	.832
Financial Resources	2	1	7	5.457	1.350	.780
Non-financial Resources	9	2.67	7	5.6782	.8658	.844

4.6.5 Firm Performance: Validity and Reliability Test

Nandakumar, Ghobadian, & O'Regan's (2010) scale is investigated, firm performance scale consisted of two distinct scales: objective fulfillment and relative competitive performance, these scales are examined separately.

4.6.5.1 Objective Fulfillment: Validity and Reliability Test

The results of *Kaiser-Meyer-Olkin (KMO)* and *Bartlett's* test are shown in table 18. Since Kaiser-Meyer-Olkin Measure of Sampling Adequacy was $0.845 > 0.6$ and Bartlett's Test of Sphericity (Approximate Chi-Square) is 352.280 ($p=0 < 0.05$), so, factor analysis test is appropriate for this data.

Table 18.

Objective Fulfillment Scale: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.845
Bartlett's Test of Sphericity	Approx. Chi-Square	352.280
	df	15
	Sig.	.000

The diagonal values in the anti-image correlation matrix are greater than 0.5, so all items are included for factor analysis. Table 19 shows the communalities which are greater than 0.4.

Table 19.

Objective Fulfillment Scale: Communalities

	Initial	Extraction
I1- Improvement in long-term performance.	1.000	.589
I2- Predicting future trends.	1.000	.616
I3- Evaluating alternative based on relevant information.	1.000	.578
I4- Avoiding problem areas.	1.000	.663
I5- Resolving problems.	1.000	.717
I6- Enhancing management development	1.000	.509

Extraction Method: Principal Component Analysis

Exploratory factor analysis is conducted to identify the factors of objective fulfillment and its related items. Similar to the original scale, objective performance scale has one dimension, factor analysis indicates that there is only one factor extracted for eigenvalues greater than 1. This factor represents 64.194% of the variance of 6 items as shown in table 20.

Table 20.

Objective Fulfillment Scale: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.672	61.194	61.194	3.672	61.194	61.194
2	.728	12.136	73.329			
3	.553	9.224	82.554			
4	.453	7.553	90.107			
5	.323	5.391	95.497			
6	.270	4.503	100.000			

Extraction Method: Principal Component Analysis.

As shown in table 21 objective fulfillment is represented by one factor includes all 6 items: 1, 2, 3, 4, 5, and 6.

Table 21.

Objective Fulfillment Scale: Component Matrix^a

	Component 1
I5- Resolving problems.	.847
I4- Avoiding problem areas.	.814
I2- Predicting future trends.	.785
I1- Improvement in long-term performance.	.768
I3- Evaluating alternative based on relevant information.	.760
I6- Enhancing management development	.714

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Table 22 shows the objective fulfillment scale has high reliability ($\alpha=0.869$) and high mean ($M=5.759$).

Table 22.

Objective Performance Scale: Descriptive Statistics, and Reliability Test

	Items No	Minimum Value	Maximum Value	Mean	Standard Deviation	Cronbach's Alpha
Objective Performance	6	2	7	5.759	.8808	.869

4.6.5.2 Relative Competitive Performance: Validity and Reliability Test

The results of Kaiser-Meyer-Olkin (KMO) and Bartlett's test are seen in table 23. Since Kaiser-Meyer-Olkin Measure of Sampling Adequacy is $0.762 > 0.6$ and Bartlett's Test of Sphericity (Approximate Chi-Square) is 156.198 ($p=0 < 0.05$), factor analysis test is good for this data. The diagonals in the anti-image correlation matrix are greater than 0.5, so all items are retained.

Table 23.

Relative Competitive Performance Scale: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy			.762
Bartlett's Test of Sphericity	Approx. Chi-Square		156.198
	df		10
	Sig.		.000

Table 24 shows the communalities which are greater than 0.4. Exploratory factor analysis with Varimax rotation is conducted to identify the factors structure and the dimensionality of relative competitive performance scale. Relative competitive performance scale have two factors, since there are two factors have eigenvalues greater than 1 after extraction.

Table 24.

Relative Competitive Performance Scale: Communalities

	Initial	Extraction
I1- Sales Growth.	1.000	.553
I2- Growth in profit after tax.	1.000	.463
I3- Market share change.	1.000	.485
I4- Overall firm performance and success.	1.000	.684
I5- Our competitive position	1.000	.419

Extraction Method: Principal Component Analysis

Tables 25 indicates there is a single factor which represents 52.083% of the variance of 5 items of relative competitive performance scale.

Table 25.

Relative Competitive Performance Scale: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.604	52.083	52.083	2.604	52.083	52.083
2	.833	16.655	68.738			
3	.616	12.328	81.066			
4	.587	11.736	92.802			
5	.360	7.198	100.000			

Extraction Method: Principal Component Analysis.

Table 26 shows the scale of the relative competitive performance which is one factor includes all 5 items: 1, 2, 3, 4, and 5.

Table 26.

Relative Competitive Performance Scale: Component Matrix^a

	Component 1
I1- Access to capital (debt, equity, etc.).	.827
I2- Relationship with bankers and financier.	.744
I3- Management of the firm's working capital.	.697
I4- Quality control system.	.681
I5- Management information systems.	.647

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Table 27 shows the high reliability ($\alpha=0.752$), and high mean ($M=5.596$) of relative competitive performance scale.

Table 27.

Relative Competitive Performance Scale: Descriptive Statistics, and Reliability Test

	Items No	Minimum Value	Maximum Value	Mean	Standard Deviation	Cronbach's Alpha
Objective Fulfillment	5	3	7	5.596	.7645	.752

CHAPTER V

RESEARCH FINDINGS

5.1. Demographic Information and Categorical Variables

The sample of this study includes the medium-sized manufacturing companies in Adana/Turkey. The required data is collected within 3 months (October, 2017-January 2018). 200 manufacturing companies are invited for this study, 89.5% (179) of firms accepted the participation into study. After eliminating the firms didn't meet the criteria of our study due to changes in the firm size, firm's activities completely/temporarily stopped, or the non-qualification of some respondents to participate into this study such as human resource and finance managers, as well as the questionnaires with missing data greater than 10 %, and industries include one firm. The valid data for analyses is decreased to 64% (128) of questionnaires. Tables 28 and 29 show the characteristics of respondents and firms participated in this study such as, the age, gender, education level, managerial position, and department of participants, in addition to the firm age, firm size, and industry. 17.2% (22) of the respondents have ages from 20 to 29 years, 39.8% (51) of respondents' ages are 30-39 years, 25% (32) of the respondents' ages range from 40 to 49 years, 18 % (23) of respondents' ages are greater than 50 years. 83.6% (107) of the respondents are males, while 16.4% (21) of the respondents are females. 68% (87) of the respondents hold bachelor's degree, 12.5% (16) of the respondents hold master's degree, 2.3% (3) of the respondents have doctorate degree, 13.3% (17) of the respondents finish secondary school, 0.8% (1) of the respondents finish preparatory school, and 1.6% (2) of the respondents finish primary school. 30.5% (39) of respondents report themselves as a higher-level managers, while 69.5% (89) of respondents occupy middle-level management positions. Middle-level managers in the sample who are responsible for production, procurement, sales and marketing, and research and development department can be summarized as 35.2% (45) of respondents work in production department, 29.7% (38) of respondents work in procurement department, 3.9% (5) of respondents work in sales and marketing department, 0.8% (1) of respondents work in research and development department.

Table 28.

Characteristics of Respondents

Characteristics	Frequency	Percent %	Valid Percent %
Respondent Age			
20-29 Years	22	17.2	17.2
30-39 Years	51	39.8	39.8
40-49 Years	32	25.0	25.0
50 Years and above	23	18.0	18.0
Total	128	100.0	100.0
Missing	0	0	0
Gender			
Male	107	83.6	83.6
Female	21	16.4	16.4
Total	128	100.0	100.0
Missing	0	0	0
Education			
Primary school	2	1.6	1.6
Secondary school	17	13.3	13.5
University	87	68.0	69.0
Master Degree	16	12.5	12.7
Ph.D Degree	3	2.3	2.4
Preparatory school	1	.8	.8
Total	126	98.4	100.0
Missing	2	1.6	
Total	128	100.0	
Managerial Position			
Middle-level Manager	39	30.5	30.5
Higher-level Manager	89	69.5	69.5
Total	128	100.0	100.0
Missing	0	0	0
Department			
Production	45	35.2	50.6
Procurement	38	29.7	42.7
Sales & Marketing	5	3.9	5.6
Research & Development	1	.8	1.1
Total	89	69.5	100.0
Missing	39	30.5	
Total	128	100.0	

Regarding to the firm characteristics: firm age, firm size, and industry, 25.8% (33) of firms join this study are found less than 10 years, 25.8% (33) of the firms have ages between 10 and 19 years, 21.9% (28) of the firms have ages between 20 and 29 years, 26.6% (34) of firms' age are equal and greater than 30. Medium-sized firms are those with 50-249 employees, according to the participating firms, 48.4% (62) of the firms employ from 50 to 99 employees, 25.8% (33) of firms' employees range from 100 to 149 employees, 14.1% (18) of the firms' employees range from 150 to 199 employees, and 11.7% (15) of firms' employees are equal and greater than 200 employees.

Table 29.

Characteristics of Firms

Characteristics	Frequency	Percent %	Valid Percent %
Firm Age			
1-9 Years	33	25.8	25.8
10-19 Years	33	25.8	25.8
20-29 Years	28	21.9	21.9
30 Years and above	34	26.6	26.6
Total	128	100.0	100.0
Missing	0	0	0
Firm Size			
50-99 Employees	62	48.4	48.4
100-149 Employees	33	25.8	25.8
150-199 Employees	18	14.1	14.1
200-249 Employees	15	11.7	11.7
Total	128	100.0	100.0
Missing	0	0	0

The companies in this study operate in 16 different main industries, 14.8% (19) of firms fabricate metal products except machinery and equipment, 11.7% (15) produce rubber and plastics products, 10.9% (14) manufacture textiles, 10.2% (13) manufacture food products, 10.2% (13) manufacture machinery and equipment, 7.8% (10) operate in non-metallic mineral manufacturing, 6.3% (8) manufacture furniture, 6.3% (8) of firms

manufacture wearing apparel, 4.7% (6) manufacture paper and paper products, 4.7% (6) produce chemical products, 3.9% (5) operate in basic metals, 2.3% (3) produce other transport equipment, 1.6% (2) produce beverages, 1.6% (2) produce printing and reproduction of recorded media, 1.6% (2) manufacture electrical equipment, and 1.6% (2) produce motor vehicles, trailers and semi-trailers.

Table 29 (Continued).

Characteristics of Firms

Characteristics	Frequency	Percent %	Valid Percent %
Industry			
Division 10:Manufacture of food products	13	10.2	10.2
Division 11:Manufacture of beverages	2	1.6	1.6
Division 13:Manufacture of textiles	14	10.9	10.9
Division 14:Manufacture of wearing apparel	8	6.3	6.3
Division 17:Manufacture of paper and paper products	6	4.7	4.7
Division 18:Printing and reproduction of recorded media	2	1.6	1.6
Division 20:Manufacture of chemicals and chemical products	6	4.7	4.7
Division 22:Manufacture of rubber and plastics products	15	11.7	11.7
Division 23:Manufacture of other non-metallic mineral products	10	7.8	7.8
Division 24:Manufacture of basic metals	5	3.9	3.9
Division 25:Manufacture of fabricated metal products, except machinery and equipment	19	14.8	14.8
Division 27:Manufacture of electrical equipment	2	1.6	1.6
Division 28:Manufacture of machinery and equipment n.e.c.	13	10.2	10.2
Division 29:Manufacture of motor vehicles, trailers and semi-trailers	2	1.6	1.6
Division 30:Manufacture of other transport equipment	3	2.3	2.3
Division 31:Manufacture of furniture	8	6.3	6.3
Total	128	100.0	100.0
Missing	0	0	0

Table 30.

Business Strategy and Industry Life Cycle

Characteristics	Frequency	Percent %	Valid Percent %
Business Strategy			
Defender	16	12.5	12.5
Prospector	59	46.1	46.1
Analyzer	47	36.7	36.7
Reactor	6	4.7	4.7
Total	128	100.0	100.0
Missing	0	0	0
Industry Life Cycle			
Growth Stage	10	7.8	8.1
Maturity Stage	105	82.0	85.4
Decline Stage	8	6.3	6.5
Total	123	96.1	100.0
Missing	5	3.9	
Total	128	100.0	

As shown in table 30, the manufacturing firms adopt various strategies, whereas 12.5% (16) of firms, 46.1% (59) of firms, 36.7% (47) of firms, and 4.7% (6) of firms apply defender, prospector, analyzer, and reactor strategies respectively. 82 % (105) of industry life cycle of firms is in maturity Stage, 7.8% (10) of industry life cycle of firms falls within growth stage, while 6.3% (8) of industry life cycle of firms is in decline stage.

5.2. The Correlations between Research Variables

Pearson correlation test is conducted to identify the correlation coefficient between the investigated variables in the study. As shown in Appendix X, EO has a significant high positive association with its sub-dimensions: innovation ($r=0.715$, $p=0 < 0.05$), and risk taking ($r=0.831$, $p=0 < 0.05$), and has a little, if any significant positive correlation with organizational structure ($r=0.261$, $p=0.003 < 0.05$), firm resources ($r=0.238$, $p=0.007 < 0.05$) and its sub-dimension (non-financial resources) ($r=0.273$, $p=0.002 < 0.05$), environmental dynamism ($r=0.182$, $p=0.039 < 0.05$), objective fulfillment ($r=0.287$, $p=0.001 < 0.05$), and with overall performance ($r=0.268$, $p=0.002 < 0.05$), and has a significant low positive correlation with prospector strategy ($r=0.317$, $p=0 < 0.05$). However, EO has a little, if any

significant negative correlation with defender strategy ($r=-0.297$, $p=0.001<0.05$), family-owned business ($r=-0.259$, $p=0.003<0.05$), manufacture of other non-metallic mineral products ($r=-0.223$, $p=0.012<0.05$), and with environmental hostility ($r=-0.282$, $p=0.001<0.05$), and has a significant low negative correlation with reactor strategy ($r=-0.3$, $p=0.001<0.05$).

Considering the sub-dimensions of EO: innovation and risk taking. Innovation has a little, if any significant positive correlation with risk taking ($r=0.206$, $p=0.02<0.05$), prospector strategy ($r=0.238$, $p=0.007<0.05$), environmental heterogeneity ($r=0.211$, $p=0<0.017$), firm resources ($r=0.276$, $p=0.002<0.05$), environmental dynamism ($r=0.214$, $p=0.015<0.05$), objective fulfillment ($r=0.285$, $p=0.001<0.05$) and with overall performance ($r=0.213$, $p=0.016<0.05$), and has a significant low positive correlation with non-financial resources ($r=0.347$, $p=0<0.05$). While innovation has a little, if any significant negative correlation with defender strategy ($r=-0.235$, $p=0.008<0.05$), family-owned business ($r=-0.182$, $p=0.040<0.05$), manufacture of other non-metallic mineral products ($r=-0.178$, $p=0.045<0.05$), industry life cycle ($r=-0.253$, $p=0.005<0.05$), and with environmental hostility ($r=-0.20$, $p=0.024<0.05$). Furthermore, risk taking has a little, if any significant positive correlation with prospector strategy ($r=0.254$, $p=0.004<0.05$), organizational structure ($r=0.233$, $p=0.008<0.05$), overall performance ($r=0.206$, $p=0.020<0.05$), and with objective fulfillment ($r=0.175$, $p=0.048<0.05$). While, risk taking has a little, if any significant negative correlation with defender strategy ($r=-0.229$, $p=0.009<0.05$), family-owned business ($r=-0.217$, $p=0.014<0.05$) and with environmental hostility ($r=-0.236$, $p=0.007<0.05$), and has a significant low negative correlation with reactor strategy ($r=-0.325$, $p=0<0.05$).

Overall performance has a little, if any significant positive correlation with prospector strategy ($r=0.224$, $p=0.011<0.05$), manufacture of basic metals ($r=-0.238$, $p=0.007<0.05$), environmental dynamism ($r=0.217$, $p=0.014<0.05$) and with financial resources ($r=0.179$, $p=0.043<0.05$), and has a significant moderate positive relationship with firm resources ($r=0.616$, $p=0<0.05$) and its sub-dimension non-financial resources ($r=0.543$, $p=0<0.05$), and had a significant high positive relationship with objective fulfillment ($r=0.858$, $p=0<0.05$), and with relative competitive performance ($r=0.806$, $p=0<0.05$). While overall performance has a little, if any significant negative correlation

with environmental hostility ($r=-0.200$, $p=0.023<0.05$). Moreover, objective fulfillment has a little, if any significant positive correlation with prospector strategy ($r=0.224$, $p=0.011<0.05$), manufacture of basic metals ($r=0.247$, $p=0.005<0.05$), environmental dynamism ($r=0.180$, $p=0.042<0.05$) and with financial resources ($r=0.188$, $p=0.034<0.05$), and has a significant low positive relationship with relative competitive performance ($r=0.387$, $p=0<0.05$), and a significant moderate positive relationship with firm resources ($r=0.616$, $p=0<0.05$) and its sub-dimension non-financial resources ($r=0.640$, $p=0<0.05$). While objective fulfillment has a little, if any significant negative correlation with reactor strategy ($r=-0.192$, $p=0.030<0.05$), and environmental hostility ($r=-0.209$, $p=0.018<0.05$). Besides relative competitive performance has a little, if any significant positive correlation with firm resources ($r=0.237$, $p=0.007<0.05$), and its sub-dimensions: financial resources ($r=0.196$, $p=0.027<0.05$) and non-financial resources ($r=0.236$, $p=0.007<0.05$), and has a little, if any significant negative correlation with defender strategy ($r=-0.209$, $p=0.018<0.05$).

5.3. The Difference of Entrepreneurial Orientation Level According to Demographic Characteristics and Ownership Type

The differences of EO level of firms/respondents according to firm age, firm size, industry type, and ownership type using independent sample t-test and one-way analysis of variance test (ANOVA).

5.3.1. The Difference of Entrepreneurial Orientation among Firm Age Groups

As shown in table 31, firm ages are classified into four groups (1-9 years, 10-19 years, 20-29 years, and equal and greater than 30 years), the mean and standard deviation of reported EO level among firm age groups are ($M_{1-9 \text{ years}} = 4.24$, $SD_{1-9 \text{ years}} = 0.983$), ($M_{10-19 \text{ years}} = 4.148$, $SD_{10-19 \text{ years}} = 1.153$), ($M_{20-29 \text{ years}} = 4.4$, $SD_{20-29 \text{ years}} = 1.157$), and ($M_{\geq 30 \text{ years}} = 4.074$, $SD_{\geq 30 \text{ years}} = 1.445$).

Table 31.

EO Level among Firm Age Groups: Descriptive Statistics

	N	M	SD	SE
1-9 Years	33	4.2424	.98331	.17117
10-19 Years	33	4.1481	1.15388	.20086
20-29 Years	28	4.4000	1.15726	.21870
30 Years and above	34	4.0741	1.44511	.24783

Dependent variable: EO

Levene's test for quality of variances is conducted to examine the homogeneity of variance of EO level among firm age groups. The Levene's test indicates the equality of EO's variance among firm age groups ($p = 0.076 > 0.05$).

ANOVA test is conducted to investigate if the EO level changes among firm age groups. Table 32 indicates that firm age groups haven't any significant impact on EO level ($F(3,124) = 0.416$, $p = 0.742 > 0.05$).

Table 32.

Differentiation of EO Level According to Firm Age Groups: ANOVA Test

	SS	df	MS	F	Sig.
Between Groups	1.799	3	.600	.416	.742
Within Groups	178.622	124	1.440		
Total	180.421	127			

Dependent variable: EO

5.3.2 The Differences of Entrepreneurial Orientation Level among Firm Size Groups

As shown in table 33, means and standard deviations of EO level among firm size groups are ($M_{50-99 \text{ Employees}} = 4.225$, $SD_{50-99 \text{ Employees}} = 1.138$), ($M_{100-149 \text{ Employees}} = 4.13$, $SD_{100-149 \text{ Employees}} = 1.27$), ($M_{150-199 \text{ Employees}} = 4.583$, $SD_{150-199 \text{ Employees}} = 0.995$), and ($M_{200-249 \text{ Employees}} = 4.434$, $SD_{200-249 \text{ Employees}} = 1.22$).

Table 33.

EO level among Firm Size Groups: Descriptive Statistics

	N	M	SD	SE
50-99 Employees	62	4.1645	1.18544	.15055
100-149 Employees	33	4.0400	1.31731	.22931
150-199 Employees	18	4.4889	.97310	.22936
200-249 Employees	15	4.4192	1.19325	.30810

Dependent variable: EO

The Levene's test for equality of variances indicates the variance of EO level in firm size groups are homogeneous ($p = 0.517 > 0.05$). ANOVA test is conducted to examine the influence of firm size groups on EO level reported by firms. Table 34 indicates that firm size groups haven't any significant impact on the level of EO ($F(3,124) = 0.732$, $p = 0.535 > 0.05$).

Table 34.

Differentiation of EO Level among Firm Size Groups: ANOVA Test

	SS	df	MS	F	Sig.
Between Groups	3.138	3	1.046	.732	.535
Within Groups	177.283	124	1.430		
Total	180.421	127			

Dependent variable: EO

5.3.3. The Differences of EO Level among Industry Groups

As shown in table 35, the means and standard deviations of EO level for industry groups are ($M_{\text{Food products}} = 3.86$, $SD_{\text{Food products}} = 1.57$), ($M_{\text{Beverages}} = 4.6$, $SD_{\text{Beverages}} = 0.2828$), ($M_{\text{Textiles}} = 4.085$, $SD_{\text{Textiles}} = 1.212$), ($M_{\text{Wearing apparel}} = 4.636$, $SD_{\text{Wearing apparel}} = 0.8859$), ($M_{\text{Paper products}} = 4.33$, $SD_{\text{Paper products}} = 1.53$), ($M_{\text{Printing \& media}} = 3.7$, $SD_{\text{Printing \& media}} = 1.838$), ($M_{\text{Chemical products}} = 4.433$, $SD_{\text{Chemical products}} = 0.7089$), ($M_{\text{Rubber \& plastics products}} = 4.613$, $SD_{\text{Rubber \& plastics products}} = 1.270$), ($M_{\text{Non-metallic mineral products}} = 3.3$, $SD_{\text{Non-metallic mineral products}} = 1.1323$), ($M_{\text{Basic metals}} = 4.52$, $SD_{\text{Basic metals}} = 1.1099$), ($M_{\text{Fabricated metal products}} = 3.858$, $SD_{\text{Fabricated metal products}} = 1.1814$), ($M_{\text{Electrical equipment}} = 4.6$, $SD_{\text{Electrical equipment}} = 0.8485$), ($M_{\text{Machinery \&}}$

equipment = 4.707, $SD_{\text{Machinery \& equipment}} = 0.9187$), ($M_{\text{Motor vehicles \& trailers}} = 5$, $SD_{\text{Motor vehicles \& trailers}} = 0.2828$), ($M_{\text{Other transport equipment}} = 3.866$, $SD_{\text{Other transport equipment}} = 1.404$), and ($M_{\text{Furniture}} = 4.35$, $SD_{\text{Furniture}} = 0.9242$).

Table 35.

EO Level among Industry Groups: Descriptive Statistics

	N	M	SD	SE
Division 10:Manufacture of food products	13	3.8615	1.57562	.43700
Division 11:Manufacture of beverages	2	4.6000	.28284	.20000
Division 13:Manufacture of textiles	14	4.0857	1.21203	.32393
Division 14:Manufacture of wearing apparel	8	4.6360	.88590	.31321
Division 17:Manufacture of paper and paper products	6	4.3333	1.53188	.62539
Division 18:Printing and reproduction of recorded media	2	3.7000	1.83848	1.30000
Division 20:Manufacture of chemicals and chemical products	6	4.4333	.70899	.28944
Division 22:Manufacture of rubber and plastics products	15	4.6133	1.27047	.32803
Division 23:Manufacture of other non-metallic mineral products	10	3.3000	1.13235	.35808
Division 24:Manufacture of basic metals	5	4.5200	1.10995	.49639
Division 25:Manufacture of fabricated metal products, except machinery and equipment	19	3.8589	1.18143	.27104
Division 27:Manufacture of electrical equipment	2	4.6000	.84853	.60000
Division 28:Manufacture of machinery and equipment n.e.c.	13	4.7077	.91875	.25482
Division 29:Manufacture of motor vehicles, trailers and semi-trailers	2	5.0000	.28284	.20000
Division 30:Manufacture of other transport equipment	3	3.8667	1.40475	.81104
Division 31:Manufacture of furniture	8	4.3500	.92428	.32678

Dependent variable: EO

The Levene's test for equality of variances indicates the variance of EO level in industry groups are homogeneous ($p = 0.128 > 0.05$). Consequently, ANOVA test is conducted to examine the influence of industry groups on the level of EO. Table 36 indicates that industry groups haven't any significant impact on the EO level ($F(15,112) = 1.107$, $p = 0.359 > 0.05$).

Table 36.

Differentiation of EO Level among Industry Groups: ANOVA Test

	SS	df	MS	F	Sig.
Between Groups	23.287	15	1.552	1.107	.359
Within Groups	157.134	112	1.403		
Total	180.421	127			

Dependent variable: EO

5.3.4. The Differences of EO Level among Firms According to Ownership Type (Family vs. Non-family)

As shown in table 37, the means and standard deviations of EO level according to the ownership type of firms are ($M_{\text{Non-family Business}} = 4.763$, $SD_{\text{Non-family Business}} = 1.111$), and ($M_{\text{Family Business}} = 4.04$, $SD_{\text{Family Business}} = 1.169$).

Table 37.

Entrepreneurial Orientation Perception According to Ownership Type: Descriptive Statistics

Ownership Type	N	M	SD	SE
Non-family Business	30	4.7629	1.11088	.20282
Family Business	98	4.0380	1.16902	.11809

Dependent variable: EO

According to table 38, Levene's test for equality of variances of EO reported by the family and non-family firms are homogeneous ($p = 0.994 > 0.05$). Independent sample t-test is conducted to compare the reported EO level according to ownership type. Therefore "Equal variances assumed" section is evaluated to find that there is a significant difference

of reported EO level between family and non-family firms ($t= 3.006$, $df=126$, $p= 0.003<0.05$), and non-family firms are more entrepreneurially oriented than family firms.

Table 38.

Entrepreneurial Orientation According to Ownership Type: Independent Samples T-test

	Levene's Test for Equality of Variances		T-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference M	Std. Error Difference SE	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.000	.994	3.006	126	.003	.72498	.24119	.24768	1.20228
Equal variances not assumed			3.089	50.268	.003	.72498	.23469	.25365	1.19631

Dependent variable: EO

5.4. The Difference of Firm Performance Level According to Demographic Characteristics and Ownership Type

The differences of two scales of firm performance: objective fulfillment and relative competitive performance of firms/respondents according to firm age, firm size, industry type, and ownership type are assessed using independent sample t-test and one-way analysis of variance test ANOVA.

5.4.1 The Differences of Firm Performance among Firm Age Groups

The means and standard deviations of the objective fulfillment level for firm age groups ($M_{1-9 \text{ years}} = 5.838$, $SD_{1-9 \text{ years}} = 0.992$), ($M_{10-19 \text{ years}} = 5.823$, $SD_{10-19 \text{ years}} = 0.812$), ($M_{20-29 \text{ years}} = 5.571$, $SD_{20-29 \text{ years}} = 0.853$), ($M_{\geq 30 \text{ years}} = 5.774$, $SD_{\geq 30 \text{ years}} = 0.868$) are shown in table 39.

Table 39.

Objective Fulfillment Level among Firm Age Groups: Descriptive Statistics

	N	M	SD	SE
1-9 Years	33	5.8384	.99258	.17279
10-19 Years	33	5.8232	.81217	.14138
20-29 Years	28	5.5714	.85398	.16139
30 Years and above	34	5.7745	.86834	.14892

Dependent variable: Objective Fulfillment

Table 40 shows the means and standard deviations of the relative competitive performance level for firm age groups ($M_{1-9 \text{ years}} = 5.742$, $SD_{1-9 \text{ years}} = 0.7525$), ($M_{10-19 \text{ years}} = 5.5455$, $SD_{10-19 \text{ years}} = 0.7233$), ($M_{20-29 \text{ years}} = 5.614$, $SD_{20-29 \text{ years}} = 0.6819$), ($M_{>30 \text{ years}} = 5.488$, $SD_{>30 \text{ years}} = 0.8810$).

Table 40.

Relative Competitive Performance Level among Firm Age Groups: Descriptive Statistics

	N	M	SD	SE
1-9 Years	33	5.7421	.75251	.13100
10-19 Years	33	5.5455	.72331	.12591
20-29 Years	28	5.6143	.68189	.12887
30 Years and above	34	5.4882	.88103	.15110

Dependent variable: Relative Competitive Performance

The means and standard deviations of overall performance level ($M_{1-9 \text{ years}} = 5.742$, $SD_{1-9 \text{ years}} = 0.7525$), ($M_{10-19 \text{ years}} = 5.5455$, $SD_{10-19 \text{ years}} = 0.7233$), ($M_{20-29 \text{ years}} = 5.614$, $SD_{20-29 \text{ years}} = 0.6819$), ($M_{>30 \text{ years}} = 5.488$, $SD_{>30 \text{ years}} = 0.8810$) for firm age groups are seen in table 41.

Table 41.

Overall Performance Level among Firm Age Groups: Descriptive Statistics

	N	M	SD	SE
1-9 Years	33	5.7902	.68093	.11853
10-19 Years	33	5.6843	.59037	.10277
20-29 Years	28	5.5929	.70790	.13378
30 Years and above	34	5.6314	.76896	.13187

Dependent variable: Overall Performance

The Levene's test for equality of variances indicates the variance of objective fulfillment level ($p = 0.901 > 0.05$), relative competitive performance ($p = 0.498 > 0.05$), and overall performance ($p = 0.719 > 0.05$) in firm age groups are homogeneous.

Table 42.

Differentiation of Objective Fulfillment Level among Firm Age Groups: ANOVA Test

	SS	df	MS	F	Sig.
Between Groups	1.337	3	.446	.569	.637
Within Groups	97.208	124	.784		
Total	98.545	127			

Dependent variable: Objective Fulfillment

ANOVA test is conducted to investigate the impact of firm age groups on the level of firm performance. Tables 42 indicates that firm age groups haven't any significant impact on the objective fulfillment level ($F(3,124) = 0.569$, $p = 0.637 > 0.05$).

Table 43.

Differentiation of Relative Competitive Performance Level among Firm Age Groups: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.193	3	.398	.675	.569
Within Groups	73.032	124	.589		
Total	74.225	127			

Dependent variable: Relative Competitive Performance

Tables 43 and 44 indicate that firm age groups haven't any significant impact on the relative competitive performance level ($F(3,124) = 0.675$, $p=0.569>0.05$), and the overall performance ($F(3,124) = 0.486$, $p=0.693>0.05$).

Table 44.

Differentiation of Overall Performance Level among Firm Age Groups: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.694	3	.231	.486	.693
Within Groups	59.034	124	.476		
Total	59.727	127			

Dependent variable: Overall Performance

5.4.2 The Differences of Firm Performance Level among Firm Size Groups

The means and standard deviations of the objective fulfillment level for firm size groups ($M_{50-99 \text{ Employees}} = 5.736$, $SD_{50-99 \text{ Employees}} = 0.825$), ($M_{100-149 \text{ Employees}} = 5.757$, $SD_{100-149 \text{ Employees}} = 0.802$), ($M_{150-199 \text{ Employees}} = 5.694$, $SD_{150-199 \text{ Employees}} = 1.214$), ($M_{200-249 \text{ Employees}} = 5.93$, $SD_{200-249 \text{ Employees}} = 0.874$) are shown in table 45.

Table 45.

Objective Fulfillment Level among Firm Size Groups: Descriptive Statistics

	N	M	SD	SE
50-99 Employees	62	5.7366	.82567	.10486
100-149 Employees	33	5.7576	.80266	.13972
150-199 Employees	18	5.6944	1.21436	.28623
200-249 Employees	15	5.9333	.87469	.22584

Dependent variable: Objective Fulfillment

Table 46 indicates the means and standard deviations of the relative competitive performance level ($M_{50-99 \text{ Employees}} = 5.5935$, $SD_{50-99 \text{ Employees}} = 0.75702$), ($M_{100-149 \text{ Employees}} = 5.5879$, $SD_{100-149 \text{ Employees}} = 0.6963$), ($M_{150-199 \text{ Employees}} = 5.7$, $SD_{150-199 \text{ Employees}} = 0.6553$), and ($M_{200-249 \text{ Employees}} = 5.4992$, $SD_{200-249 \text{ Employees}} = 1.0728$) for firm size groups.

Table 46.

Relative Competitive Performance Level among Firm Size Groups: Descripti

	N	M	SD	SE
50-99 Employees	62	5.5935	.75702	.09614
100-149 Employees	33	5.5879	.69631	.12121
150-199 Employees	18	5.7000	.65530	.15445
200-249 Employees	15	5.4992	1.07286	.27701

Dependent variable: Relative Competitive Performance

However, the means and standard deviations of the level of overall performance for firm size groups ($M_{50-99 \text{ Employees}} = 5.665$, $SD_{50-99 \text{ Employees}} = 0.672$), ($M_{100-149 \text{ Employees}} = 5.672$, $SD_{100-149 \text{ Employees}} = 0.589$), ($M_{150-199 \text{ Employees}} = 5.697$, $SD_{150-199 \text{ Employees}} = 0.800$), and ($M_{200-249 \text{ Employees}} = 5.716$, $SD_{200-249 \text{ Employees}} = 0.851$) are shown in table 47.

Table 47.

Overall Performance Level among Firm Size Groups: Descriptive Statistics

	N	M	SD	SE
50-99 Employees	62	5.6651	.67204	.08535
100-149 Employees	33	5.6727	.58943	.10261
150-199 Employees	18	5.6972	.80015	.18860
200-249 Employees	15	5.7163	.85088	.21970

Dependent variable: Overall Performance

The Levene's test for equality of variances indicates the variance of level of objective fulfillment level ($p = 0.526 > 0.05$), relative competitive performance level ($p = 0.386 > 0.05$), and overall performance level ($p = 0.361 > 0.05$) in firm size groups are equal.

Table 48.

Differentiation of Objective Fulfillment Level among Firm Size Groups: ANOVA Test

	SS	df	MS	F	Sig.
Between Groups	.562	3	.187	.237	.870
Within Groups	97.983	124	.790		
Total	98.545	127			

Dependent variable: Objective Fulfillment

ANOVA test is conducted to examine the influence of firm size groups on the level of firm performance. Table 48 indicates that firm size groups haven't any significant effect on the objective fulfillment level ($F(3,124) = 0.237$, $p = 0.870 > 0.05$).

Table 49.

Differentiation of Relative Competitive Performance Level among Firm Size Groups: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.338	3	.113	.189	.904
Within Groups	73.887	124	.596		
Total	74.225	127			

Dependent variable: Relative Competitive Performance

Tables 49 and 50 indicate that firm size groups haven't any significant effect on the relative competitive performance level ($F(3,124) = 0.189$, $p = 0.904 > 0.05$), and the overall performance level ($F(3,124) = 0.028$, $p = 0.994 > 0.05$).

Table 50.

Differentiation of Overall Performance Level among Firm Size Groups: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.040	3	.013	.028	.994
Within Groups	59.687	124	.481		
Total	59.727	127			

Dependent variable: Overall Performance

5.4.3 The Differences of Firm Performance Level among Industry Groups

The means and standard deviations of objective fulfillment level for industry groups ($M_{\text{Food products}} = 6$, $SD_{\text{Food products}} = 0.807$), ($M_{\text{Beverages}} = 6$, $SD_{\text{Beverages}} = 0$), ($M_{\text{Textiles}} = 5.678$, $SD_{\text{Textiles}} = 0.651$), ($M_{\text{Wearing apparel}} = 6.187$, $SD_{\text{Wearing apparel}} = 0.475$), ($M_{\text{Paper products}} = 5.75$, $SD_{\text{Paper products}} = 0.376$), ($M_{\text{Printing \& media}} = 5$, $SD_{\text{Printing \& media}} = 0.471$), ($M_{\text{Chemical products}} = 6.02$, $SD_{\text{Chemical products}} = 0.636$), ($M_{\text{Rubber \& plastics products}} = 5.52$, $SD_{\text{Rubber \& plastics products}} = 1.527$), ($M_{\text{Non-metallic mineral products}} = 5.4$, $SD_{\text{Non-metallic mineral products}} = 0.742$), ($M_{\text{Basic metals}} = 6.83$, $SD_{\text{Basic metals}} = 0.742$).

metals = 0.204), ($M_{\text{Fabricated metal products}} = 5.429$, $SD_{\text{Fabricated metal products}} = 0.977$), ($M_{\text{Electrical equipment}} = 5.083$, $SD_{\text{Electrical equipment}} = 0.824$), ($M_{\text{Machinery \& equipment}} = 6.205$, $SD_{\text{Machinery \& equipment}} = 0.593$), ($M_{\text{Motor vehicles \& trailers}} = 5.75$, $SD_{\text{Motor vehicles \& trailers}} = 0.824$), ($M_{\text{Other transport equipment}} = 5.61$, $SD_{\text{Other transport equipment}} = 0.346$), and ($M_{\text{Furniture}} = 5.52$, $SD_{\text{Furniture}} = 0.530$) are shown in table 51.

Table 51.

Objective Fulfillment Level among Industry Groups: Descriptive Statistics

	N	M	SD	SE
Division 10:Manufacture of food products	13	6.0000	.80795	.22408
Division 11:Manufacture of beverages	2	6.0000	.00000	.00000
Division 13:Manufacture of textiles	14	5.6786	.65197	.17425
Division 14:Manufacture of wearing apparel	8	6.1875	.47507	.16796
Division 17:Manufacture of paper and paper products	6	5.7500	.37639	.15366
Division 18:Printing and reproduction of recorded media	2	5.0000	.47140	.33333
Division 20:Manufacture of chemicals and chemical products	6	6.0278	.63611	.25969
Division 22:Manufacture of rubber and plastics products	15	5.5222	1.52475	.39369
Division 23:Manufacture of other non-metallic mineral products	10	5.4000	.74204	.23465
Division 24:Manufacture of basic metals	5	6.8333	.20412	.09129
Division 25:Manufacture of fabricated metal products, except machinery and equipment	19	5.4298	.97708	.22416
Division 27:Manufacture of electrical equipment	2	5.0833	.82496	.58333
Division 28:Manufacture of machinery and equipment n.e.c.	13	6.2051	.59377	.16468
Division 29:Manufacture of motor vehicles, trailers and semi-trailers	2	5.7500	.82496	.58333
Division 30:Manufacture of other transport equipment	3	5.6111	.34694	.20031
Division 31:Manufacture of furniture	8	5.5208	.53033	.18750

Dependent variable: Objective Fulfillment

Table 52 shows the means and standard deviations of the relative competitive performance for industry groups ($M_{\text{Food products}} = 5.74$, $SD_{\text{Food products}} = 0.80$), ($M_{\text{Beverages}} = 5.50$, $SD_{\text{Beverages}} = 0.42$), ($M_{\text{Textiles}} = 5.57$, $SD_{\text{Textiles}} = 0.85$), ($M_{\text{Wearing apparel}} = 5.2$, $SD_{\text{Wearing apparel}} = 0.68$), ($M_{\text{Paper products}} = 5.91$, $SD_{\text{Paper products}} = 0.59$), ($M_{\text{Printing \& media}} = 5.60$, $SD_{\text{Printing \& media}} = 0.56$), ($M_{\text{Chemical products}} = 5.83$, $SD_{\text{Chemical products}} = 0.64$), ($M_{\text{Rubber \& plastics products}} = 5.58$, $SD_{\text{Rubber \& plastics products}} = 1.06$), ($M_{\text{Non-metallic mineral products}} = 5.54$, $SD_{\text{Non-metallic mineral products}} = 0.693$), ($M_{\text{Basic metals}} = 6.24$, $SD_{\text{Basic metals}} = 0.46$), ($M_{\text{Fabricated metal products}} = 5.57$, $SD_{\text{Fabricated metal products}} = 0.70$), ($M_{\text{Electrical equipment}} = 5.70$, $SD_{\text{Electrical equipment}} = 0.42$), ($M_{\text{Machinery \& equipment}} = 5.58$, $SD_{\text{Machinery \& equipment}} = 0.75$), ($M_{\text{Motor vehicles \& trailers}} = 5.5$, $SD_{\text{Motor vehicles \& trailers}} = 0.707$), ($M_{\text{Other transport equipment}} = 5.40$, $SD_{\text{Other transport equipment}} = 1.21$), and ($M_{\text{Furniture}} = 5.25$, $SD_{\text{Furniture}} = 0.72$).

Table 52.

Relative Competitive Performance Level among Industry Groups: Descriptive Statistics

	N	M	SD	SE
Division 10:Manufacture of food products	13	5.7385	.80160	.22232
Division 11:Manufacture of beverages	2	5.5000	.42426	.30000
Division 13:Manufacture of textiles	14	5.5714	.84801	.22664
Division 14:Manufacture of wearing apparel	8	5.2000	.68452	.24202
Division 17:Manufacture of paper and paper products	6	5.9147	.59874	.24444
Division 18:Printing and reproduction of recorded media	2	5.6000	.56569	.40000
Division 20:Manufacture of chemicals and chemical products	6	5.8333	.63770	.26034
Division 22:Manufacture of rubber and plastics products	15	5.5867	1.05686	.27288
Division 23:Manufacture of other non-metallic mineral products	10	5.5400	.69314	.21919
Division 24:Manufacture of basic metals	5	6.2400	.45607	.20396
Division 25:Manufacture of fabricated metal products, except machinery and equipment	19	5.5684	.70321	.16133
Division 27:Manufacture of electrical equipment	2	5.7000	.42426	.30000
Division 28:Manufacture of machinery and equipment n.e.c.	13	5.5846	.75481	.20935
Division 29:Manufacture of motor vehicles, trailers and semi-trailers	2	5.5000	.70711	.50000
Division 30:Manufacture of other transport equipment	3	5.4000	1.21655	.70238
Division 31:Manufacture of furniture	8	5.2500	.72309	.25565

Dependent variable: Relative Competitive Performance

Moreover, the means and standard deviations of the overall performance for industry groups ($M_{\text{Food products}} = 5.87$, $SD_{\text{Food products}} = 0.578$), ($M_{\text{Beverages}} = 5.75$, $SD_{\text{Beverages}} = 0.212$), ($M_{\text{Textiles}} = 5.625$, $SD_{\text{Textiles}} = 0.664$), ($M_{\text{Wearing apparel}} = 5.694$, $SD_{\text{Wearing apparel}} = 0.414$), ($M_{\text{Paper products}} = 5.83$, $SD_{\text{Paper products}} = 0.422$), ($M_{\text{Printing \& media}} = 5.30$, $SD_{\text{Printing \& media}} = 0.047$), ($M_{\text{Chemical products}} = 5.93$, $SD_{\text{Chemical products}} = 0.602$), ($M_{\text{Rubber \& plastics products}} = 5.55$, $SD_{\text{Rubber \& plastics products}} = 1.14$), ($M_{\text{Non-metallic mineral products}} = 5.47$, $SD_{\text{Non-metallic mineral products}} = 0.609$), ($M_{\text{Basic metals}} = 6.54$, $SD_{\text{Basic metals}} = 0.274$), ($M_{\text{Fabricated metal products}} = 5.49$, $SD_{\text{Fabricated metal products}} = 0.735$), ($M_{\text{Electrical equipment}} = 5.39$, $SD_{\text{Electrical equipment}} = 0.63$), ($M_{\text{Machinery \& equipment}} = 5.89$, $SD_{\text{Machinery \& equipment}} = 0.440$), ($M_{\text{Motor vehicles \& trailers}} = 5.63$, $SD_{\text{Motor vehicles \& trailers}} = 0.766$), ($M_{\text{Other transport equipment}} = 5.51$, $SD_{\text{Other transport equipment}} = 0.689$), and ($M_{\text{Furniture}} = 5.385$, $SD_{\text{Furniture}} = 0.588$) are shown in table 53.

Table 53.

Overall Performance Level among Industry Groups: Descriptive Statistics

	N	M	SD	SE
Division 10:Manufacture of food products	13	5.8692	.57875	.16052
Division 11:Manufacture of beverages	2	5.7500	.21213	.15000
Division 13:Manufacture of textiles	14	5.6250	.66435	.17755
Division 14:Manufacture of wearing apparel	8	5.6938	.41375	.14628
Division 17:Manufacture of paper and paper products	6	5.8323	.42217	.17235
Division 18:Printing and reproduction of recorded media	2	5.3000	.04714	.03333
Division 20:Manufacture of chemicals and chemical products	6	5.9306	.60189	.24572
Division 22:Manufacture of rubber and plastics products	15	5.5544	1.13752	.29371
Division 23:Manufacture of other non-metallic mineral products	10	5.4700	.60918	.19264
Division 24:Manufacture of basic metals	5	6.5367	.27371	.12241
Division 25:Manufacture of fabricated metal products, except machinery and equipment	19	5.4991	.73599	.16885
Division 27:Manufacture of electrical equipment	2	5.3917	.62461	.44167
Division 28:Manufacture of machinery and equipment n.e.c.	13	5.8949	.43977	.12197
Division 29:Manufacture of motor vehicles, trailers and semi-trailers	2	5.6250	.76603	.54167
Division 30:Manufacture of other transport equipment	3	5.5056	.68927	.39795
Division 31:Manufacture of furniture	8	5.3854	.58794	.20787

Dependent variable: Overall Performance

The Levene's test for equality of variances indicates the variance of objective fulfillment ($p=0<0.05$) and overall performance ($p=0.001<0.05$) among industry groups are heterogeneous, while the variance of relative competitive performance level ($p=0.422>0.05$) among industry groups is homogeneous. Accordingly, Brown–Forsythe, and Welch tests are conducted to investigate the influence of industry groups on the level of the objective fulfillment and overall performance, and ANOVA test is conducted to identify the impact of industry groups on the level of the relative competitive performance. From table 54, robust tests of equality of means indicates that industry groups haven't any significant impact on the level of objective fulfillment, since Brown–Forsythe statistic ($p=0.609>0.05$), and Welch statistic ($p=0.452>0.05$).

Table 54.

Differentiation of Objective Fulfillment Performance among Industry Groups: Robust Tests of Equality of Means

	Statistic ^a	df1	df2	Sig.
Welch	.864	15	16.051	.609
Brown-Forsythe	1.013	15	72.608	.452

a. Asymptotically F distributed.

Furthermore table 55 shows ANOVA test's results which indicate that industry groups haven't any significant effect on the level of relative competitive performance ($F(3,124)= 0.624$, $p=0.850>0.05$).

Table 55.

Differentiation of Relative Competitive Performance Level among Industry Groups: ANOVA Test

	SS	df	MS	F	Sig.
Between Groups	5.728	15	.382	.624	.850
Within Groups	68.496	112	.612		
Total	74.225	127			

Dependent variable: Relative Competitive Performance

However, table 56 shows the result of robust test of equality of means, which indicates that industry groups have a significant impact on the overall performance level, since Welch statistic ($p=0<0.05$). Thus, Games-Howells test is conducted to identify the differences between the industries as shown in Appendix XI, whereas, the manufacture of basic metals has higher overall performance than the manufactures of textiles, printing and reproduction of recorded media, other non-metallic mineral products, fabricated metal products except machinery and equipment, furniture, and wearing apparel. Furthermore, the manufacture of machinery and equipment performs better than the manufacture of printing and reproduction of recorded media.

Table 56.

Differentiation of Overall Performance among Industry Groups: Robust Tests of Equality of Means

	Statistic ^a	df1	df2	Sig.
Welch	5.868	15	17.448	.000
Brown-Forsythe	1.465	15	36.780	.170

a. Asymptotically F distributed.

5.4.4 The Differences of Firm Performance Level According to Ownership Type

The means and standard deviations of the level of objective fulfillment ($M_{\text{Non-family Business}} = 6.028$, $SD_{\text{Non-family Business}} = 0.605$) are shown in table 57.

Table 57.

Objective Fulfillment Level According to Ownership Type: Descriptive Statistics

Ownership Type	N	M	SD	SE
Non-family Business	30	6.0278	.60503	.11046
Family Business	98	5.6769	.93666	.09462

Dependent variable: Objective Fulfillment

Furthermore, the means and standard deviations of the the level of relative competitive performance ($M_{\text{family Business}} = 5.677$, $SD_{\text{family Business}} = 0.937$) according to ownership type of firms are shown in table 58.

Table 58.

Relative Competitive Performance Level According to Ownership Type: Descriptive Statistics

Ownership Type	N	M	SD	SE
Non-family Business	30	5.7029	.80320	.14664
Family Business	98	5.5633	.75346	.07611

Dependent variable: Relative Competitive Performance

However, table 59 indicates the means and standard deviations of the level of overall performance ($M_{\text{family Business}} = 5.620$, $SD_{\text{family Business}} = 0.712$) according to ownership type of firms.

Table 59.

Overall Performance Level According to Ownership Type: Descriptive Statistics

Ownership Type	N	M	SD	SE
Non-family Business	30	5.6201	.71275	.07200
Family Business	98	5.8654	.55919	.10209

Dependent variable: Overall Performance

The Levene's test for equality of variances of objective fulfillment reported by the family and non-family firms are heterogeneous ($p = 0.044 < 0.05$). Independent sample t-test is conducted to compare the reported objective fulfillment level according to ownership type. Thus the "Equal variances not assumed" section is evaluated to find the significant difference of reported objective fulfillment level between family and non-family firms ($t = 2.413$, $df = 75.081$, $p = 0.018 < 0.05$) as seen in table 60. Hence, non-family firms are more entrepreneurially oriented than family firms.

Table 60.

Objective Fulfillment Level According to Ownership Type: Independent Samples T-test

	Levene's		T-test for Equality of Means						
	Test for								
	Equality of								
	Variances								
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference M	Std. Error Difference SE	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	4.151	.044	1.930	126	.056	.35091	.18186	-.00899	.71080
Equal variances not assumed			2.413	75.081	.018	.35091	.14545	.06117	.64064

Dependent variable: Objective Fulfillment

But the Levene's test for the relative competitive performance ($p=0.615>0.05$) among family and non-family firms is homogeneous as shown in table 61. Accordingly, independent sample t-test is conducted to compare the reported relative competitive performance according to ownership type. Therefore "Equal variances assumed" section is evaluated to find that there isn't any significant difference of reported relative competitive performance level ($t= 0.875$, $df=126$, $p=0.383>0.05$) between family and non-family firms.

Table 61.

Relative Competitive Performance Level According to Ownership Type: Independent Samples T-test

	Levene's		T-test for Equality of Means						
	Test for								
	Equality of								
	Variances								
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference M	Std. Error Difference SE	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.254	.615	.875	126	.383	.13967	.15966	-.17629	.45564
Equal variances not assumed			.845	45.737	.402	.13967	.16522	-.19295	.47229
Dependent variable: Relative Competitive Performance									

Moreover table 62 indicated the Levene's test for the overall performance ($p=0.320>0.05$) among family and non-family firms is homogeneous. Accordingly, independent sample t-test is conducted to compare the reported overall performance performance according to ownership type. Therefore "Equal variances assumed" section is evaluated to find that there isn't any significant difference of reported overall performance level ($t= -1.728$, $df=126$, $p=0.087>0.05$) between family and non-family firms.

Table 62.

Overall Performance Level According to Ownership Type: Independent Samples T-test

	Levene's		T-test for Equality of Means						
	Test for								
	Equality of								
	Variances								
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference M	Std. Error Difference SE	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.995	.320	-1.728	126	.087	-.24529	.14199	-.52628	.03570
Equal variances not assumed			-1.963	60.541	.054	-.24529	.12493	-.49514	.00456

Dependent variable: Overall Performance

5.5 Hypotheses Testing

The hypotheses of the study were investigated through hierarchical linear regression, multinomial logistic regression, and one-way analysis of variance (ANOVA) using SPSS 25 program.

5.5.1 Hypothesis 1: The Impact of EO on Firm Performance

A hierarchical linear regression analysis is conducted to examine H_{1a} , and H_{1b} . Tables 63, 64, 65 and 66 show the results of the analyses. First of all, multicollinearity test is investigated before testing hypotheses. The accepted levels of multicollinearity are identified by tolerance value (1/VIF) greater than 0.10, or variance inflation factor (VIF) less than 10 (Hair, Black, Babin, & Anderson, 2014, p.201). When multicollinearity diagnostics for model 1 and 2 are assessed, all tolerance values are within the acceptable range (0.941 to 0.995).

Table 63.

Hierarchical Regression Analysis: The Impact of EO on Objective Fulfillment

	Model 1^a		Model 2^a	
	Step 1	Step 2	Step 1	Step 2
Firm Age	-.066	-.052	-.066	-.063
Firm Size	.036	.019	.036	.023
Industry 24: Manufacturing of basic metals	.239**	.227**	.239**	.231**
EO	-	.271**	-	-
Innovation	-	-	-	.263**
Risk Taking	-	-	-	.098
Adjusted R ²	.044	.111	.044	.121
R ²	.067	.139	.067	.156
ΔR^2	.067	.073	.067	.089

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

First model is significant $F(4,123)=4.980$, $p<0.01$, $R^2=0.139$, and explains 13.9% of the variance of objective fulfillment. The first step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables accounted for 6.7% of the variance in objective fulfillment $F(3,124)=2.948$, $p<0.01$, $R^2=0.067$. Although firm age ($\beta = -0.066$, $p>0.05$) and firm size ($\beta = 0.036$, $p>0.05$) aren't significant predictors, the manufacturing industry of basic metals ($\beta = 0.239$, $p<0.01$) is significant predictor of objective fulfillment. The entrepreneurial orientation construct is entered in the second step. Entrepreneurial orientation significantly increases the variance in objective fulfillment by 7.3%, $\Delta R^2 = 0.073$, $\Delta F(1, 123) = 10.404$, $\beta = 0.271$, $p<0.01$.

While, the second model is significant $F(5,122)=4.510$, $p<0.01$, $R^2=0.156$, and explains 15.6% of the variance of objective fulfillment. The first step includes the same control variables. EO's dimensions: innovativeness and risk taking are entered in the second step. Innovativeness and risk taking variables explain 8.9% of variance in the objective fulfillment $\Delta R^2 = 0.089$, $\Delta F(2, 122) = 6.464$, $p<0.01$. While innovativeness ($\beta =$

0.263, $p < 0.01$) is a significant predictor of objective fulfillment, risk taking ($\beta = 0.098$, $p > 0.05$) hasn't any impact on objective fulfillment.

Table 64.

Hierarchical Regression Analysis: The Impact of EO on Relative Competitive Performance

	Model 1 ^a		Model 2 ^a	
	Step 1	Step 2	Step 1	Step 2
Firm Age	-.004	.004	-.004	.009
Firm Size	.021	.012	.021	.010
Industry 24: Manufacturing of basic metals	.169	.163	.169	.160
EO	-	.141	-	-
Innovation	-	-	-	.021
Risk Taking	-	-	-	.153
Adjusted R ²	.006	.018	.006	.015
R ²	.030	.049	.030	.054
ΔR^2	.030	.020	.006	.015

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

The first model $F(4,123)=1.594$, $p > 0.05$, $R^2=0.049$, and the second model $F(5,122)=1.398$, $p > 0.05$, $R^2=0.054$ aren't significant and don't explain the variance in relative competitive performance.

For the first model, the first step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables aren't significant predictors of relative competitive performance $F(3,124)=1.257$, $p > 0.05$, $R^2=0.03$. Where, firm age ($\beta = -0.004$, $p > 0.05$), firm size ($\beta = 0.021$, $p > 0.05$), and the manufacturing industry of basic metals ($\beta = 0.169$, $p > 0.05$) aren't significant predictors of relative competitive performance. The entrepreneurial orientation construct is entered in the second step. The entrepreneurial orientation also hasn't any significant impact on the relative competitive performance, $\Delta R^2 = 0.020$, $\Delta F(1,123) = 2.558$,

$\beta = 0.141$, $p > 0.05$. While in the second model, the first step includes the same control variables. EO's dimensions: innovativeness and risk taking are entered in the second step. Innovativeness and risk taking variables haven't any significant impact on relative competitive performance $\Delta R^2 = 0.025$, $\Delta F(2,122) = 1.592$, $p > 0.05$. Neither innovativeness ($\beta = 0.021$, $p > 0.05$), nor risk taking ($\beta = 0.153$, $p > 0.05$) has influence on relative competitive performance.

Table 65.

Hierarchical Regression Analysis: The Impact of EO on Overall Performance

	Model 1 ^a		Model 2 ^a	
	Step 1	Step 2	Step 1	Step 2
Firm Age	-.044	-.032	-.044	-.035
Firm Size	.035	.019	.035	.020
Industry 24: Manufacturing of basic metals	.248**	.236**	.248**	.238**
EO	-	.253**	-	-
Innovation	-	-	-	.181*
Risk Taking	-	-	-	.148
Adjusted R ²	.045	.103	.045	.097
R ²	.067	.131	.067	.133
ΔR^2	.067	.063	.067	.065

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

First model is significant and explains the variance in overall performance $F(4,123)=4.628$, $p < 0.01$, $R^2=0.131$. The first step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables explain 6.7% of the variance in overall performance $F(3,124)=2.991$, $p < 0.05$, $R^2=0.067$. Whereas, firm age ($\beta = -0.044$, $p > 0.05$), and firm size ($\beta = 0.035$, $p > 0.05$) haven't any significant impact on overall performance, however the manufacturing industry of basic metals ($\beta = 0.248$, $p < 0.01$) has a significantly positive impact effect on overall performance. The entrepreneurial orientation construct is entered in the second step.

Entrepreneurial orientation has a significantly positive impact on the overall performance, $\Delta R^2 = 0.063$, $\Delta F(1, 123) = 8.962$, $\beta = 0.253$, $p < 0.01$.

Furthermore, the second model is significant $F(5, 122) = 1.585$, $p < 0.01$, $R^2 = 0.133$ and explains the variance in overall performance. The first step includes the same control variables. EO's dimensions: innovativeness and risk taking are entered in the second step. Innovativeness and risk taking variables have significant addition to the variance in overall performance $\Delta R^2 = 0.065$, $\Delta F(2, 122) = 4.589$, $p < 0.05$. Where, innovativeness ($\beta = 0.181$, $p < 0.05$) has a significantly positive impact on overall performance, but risk taking ($\beta = 0.148$, $p > 0.05$) hasn't any significant impact on overall performance.

Accordingly, the results partially support hypothesis 1_a, whereas EO and its sub-dimension: innovativeness have positively significant influence on the objective fulfillment, and overall performance but not on the relative competitive performance.

Table 66.

Hierarchical Regression Analysis: The Impact of EO and EO² on Firm Performance

	Model 1^a			Model 2^a			Model 3^a		
	Dependent Variable: Objective Fulfillment			Dependent Variable: Relative Competitive Performance			Dependent Variable: Overall Performance		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Firm Age	-.066	-.052	-.086	-.004	.004	-.010	-.044	-.032	-.061
Firm Size	.036	.019	.022	.021	.012	.014	.035	.019	.022
Manufacturing of basic metals	.239*	.227**	.227**	.169	.163	.162	.248	.236	.236**
EO	-	.271**	.328**	-	.141	.164	-	.253**	.302**
EO ²	-	-	.165	-	-	.065	-	-	.142
Adjusted R ²	.044	.111	.127	.006	.018	.014	.045	.103	.113
R ²	.067	.139	.162	.030	.049	.053	.067	.131	.148
ΔR^2	.067	.073	.022	.030	.020	.004	.067	.063	.017

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

Multicollinearity test for model 1, 2 and 3 indicates all tolerance values are within the acceptable range (0.829 to 0.995). The first model $F(5,122)=4.710$, $p<0.05$, $R^2=0.162$, and the third model $F(5,122)=4.223$, $p<0.01$, $R^2=0.148$ are significant predictors of objective fulfillment, while the second model $F(5,122)=1.361$, $p>0.05$, $R^2=0.053$ doesn't explain the variance in objective fulfillment.

For the first model, the first step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables explain 6.7% of the variance in objective fulfillment $F(3,124)=2.948$, $p<0.05$, $R^2=0.067$. Firm age ($\beta = -0.044$, $p>0.05$), and firm size ($\beta = 0.035$, $p>0.05$) haven't any significant impact on overall performance, however the manufacturing industry of basic metals ($\beta = 0.248$, $p<0.01$) has a significantly positive impact on overall performance. The entrepreneurial orientation construct is entered in the second step. Entrepreneurial orientation has a significant impact on the objective fulfillment by 7.3%, $\Delta R^2 = 0.073$, $\Delta F(1, 123) = 10.404$, $\beta = 0.271$, $p<0.01$. The square of entrepreneurial orientation construct (EO^2) is entered in the third step. EO^2 hasn't any significant effect on the objective fulfillment $\Delta R^2 = 0.022$, $\beta = 0.165$, $\Delta F(1, 122) = 3.265$, $p>0.05$.

Regarding the second model, the first step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables explain 6.7% of the variance in objective fulfillment $F(3,124)=1.257$, $p>0.05$, $R^2=0.03$. Firm age ($\beta = -0.004$, $p>0.05$), firm size ($\beta = 0.021$, $p>0.05$), and the manufacturing industry of basic metals ($\beta = 0.169$, $p>0.05$) haven't significant impact on relative competitive performance. The entrepreneurial orientation construct is entered in the second step. Entrepreneurial orientation hasn't any significant impact on the relative competitive performance $\Delta R^2 = 0.020$, $\Delta F(1, 123) = 2.558$, $\beta = 0.141$, $p>0.05$. EO^2 which is entered in the third step, hasn't any significant impact on the relative competitive performance $\Delta R^2 = 0.004$, $\Delta F(1, 122) = 0.456$, $\beta = 0.065$, $p>0.05$.

Regarding to the third model, the first step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables explain 6.7% of the variance in overall performance $F(3,124)=2.991$, $p<0.05$, $R^2=0.067$. Firm age ($\beta = -0.044$, $p>0.05$), and firm size ($\beta = 0.035$, $p>0.05$) haven't any significant impact on overall performance but the manufacturing industry of basic

metals ($\beta = 0.248$, $p < 0.05$) is a significant predictor of overall performance. The entrepreneurial orientation construct is entered in the second step. Entrepreneurial orientation has a significantly positive impact on overall performance $\Delta R^2 = 0.063$, $\Delta F(1, 123) = 8.962$, $\beta = 0.253$, $p < 0.05$. EO² is entered in the third step. EO² hasn't any significant impact on the overall performance $\Delta R^2 = 0.017$, $\Delta F(1, 122) = 2.394$, $\beta = 0.142$, $p > 0.05$.

Consequently, the results don't support hypothesis 1_b, whereas the relation between EO and objective fulfillment or overall performance is a positive linear relationship and not curvilinear relationship. However, there is no significant relationship between EO and relative competitive performance.

The dimensions of EO (innovativeness and risk taking) are divided into three equal groups: low, moderate, and high to form 9 clusters of various EO profiles as shown in figure 4 to examine hypothesis 1_c using ANOVA test.

Innovativeness	High	Cluster 7	Cluster 8	Cluster 9
	Moderate	Cluster 4	Cluster 5	Cluster 6
	Low	Cluster 1	Cluster 2	Cluster 3
		Low	Moderate	High
		Risk Taking		

Figure 3. 3x3 Matrix of EO Construct

As shown in tables 67 the means and standard deviations of objective fulfillment level for the nine clusters of EO profiles are ($M_{\text{cluster1}} = 5.278$, $SD_{\text{cluster1}} = 0.842$), ($M_{\text{cluster2}} = 5.425$, $SD_{\text{cluster2}} = 1.215$), ($M_{\text{cluster3}} = 6$, $SD_{\text{cluster3}} = 1.041$), ($M_{\text{cluster4}} = 5.7$, $SD_{\text{cluster4}} = 0.800$), ($M_{\text{cluster5}} = 5.833$, $SD_{\text{cluster5}} = 0.7322$), ($M_{\text{cluster6}} = 5.708$, $SD_{\text{cluster6}} = 0.8851$), ($M_{\text{cluster7}} = 5.878$, $SD_{\text{cluster7}} = 0.5060$), ($M_{\text{cluster8}} = 6$, $SD_{\text{cluster8}} = 0.6482$), and ($M_{\text{cluster9}} = 6.417$, $SD_{\text{cluster9}} = 0.623$).

Table 67.

Objective Fulfillment level according to EO Profile : Descriptive Statistics

	N	M	SD	SE
Cluster 1	18	5.2778	.84211	.19849
Cluster 2	20	5.4250	1.21453	.27158
Cluster 3	7	6.0000	1.04083	.39340
Cluster 4	10	5.7000	.80046	.25313
Cluster 5	21	5.8333	.73220	.15978
Cluster 6	12	5.7083	.88513	.25552
Cluster 7	11	5.8788	.50602	.15257
Cluster 8	17	6.0000	.64818	.15721
Cluster 9	12	6.4167	.62158	.17944

Dependent variable: Objective Fulfillment level

The Levene's test for equality of variances indicates the variance of objective fulfillment level ($p=0.126>0.05$), relative competitive performance level ($p=0.173>0.05$), and overall performance ($p=0.062>0.05$) among EO profiles are homogeneous.

Table 68.

Objective Fulfillment level according to EO Profile: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.323	8	1.665	2.325	.023
Within Groups	85.222	119	.716		
Total	98.545	127			

Dependent variable: Objective Fulfillment

As shown in table 68, ANOVA test is conducted to investigate the influence of EO profiles on the level of objective fulfillment ($F(8,119)=2.325$, $p=0.023<0.05$), thus EO profiles have an impact on the level of objective fulfillment. Hochberg's GT2 test is conducted to show the difference of objective fulfillment level among EO profiles as seen in Appendix XII. The results show firms in cluster 9 (entrepreneurial firms) which adopt high levels of innovativeness and risk taking achieve high objective fulfillment than firms in cluster 1 (conservative firms) with low levels of innovativeness and risk taking.

Table 69 shows the means and standard deviations of the relative competitive performance for nine clusters of EO profiles are ($M_{\text{cluster1}} = 5.456$, $SD_{\text{cluster1}} = 0.569$), ($M_{\text{cluster2}} = 5.6$, $SD_{\text{cluster2}} = 0.958$), ($M_{\text{cluster3}} = 5.714$, $SD_{\text{cluster3}} = 0.929$), ($M_{\text{cluster4}} = 5.509$, $SD_{\text{cluster4}} = 0.759$), ($M_{\text{cluster5}} = 5.638$, $SD_{\text{cluster5}} = 0.778$), ($M_{\text{cluster6}} = 5.683$, $SD_{\text{cluster6}} = 0.741$), ($M_{\text{cluster7}} = 5.582$, $SD_{\text{cluster7}} = 0.927$), ($M_{\text{cluster8}} = 5.506$, $SD_{\text{cluster8}} = 0.828$), and ($M_{\text{cluster9}} = 5.783$, $SD_{\text{cluster9}} = 0.422$).

Table 69.

Relative Competitive Performance according to EO Profile: Descriptive Statistics

	N	M	SD	SE
Cluster 1	18	5.4556	.56903	.13412
Cluster 2	20	5.6000	.95807	.21423
Cluster 3	7	5.7143	.92993	.35148
Cluster 4	10	5.5088	.75891	.23999
Cluster 5	21	5.6381	.77877	.16994
Cluster 6	12	5.6833	.74080	.21385
Cluster 7	11	5.5818	.92717	.27955
Cluster 8	17	5.5059	.82800	.20082
Cluster 9	12	5.7833	.42176	.12175

Dependent variable: Relative Competitive Performance

While table 70 shows ANOVA test's result which indicates that EO profiles haven't any significant impact on the level of relative competitive performance ($F(8,119)=0.248$, $p=0.980>0.05$).

Table 70.

Relative Competitive Performance level according to EO Profile: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.219	8	.152	.248	.980
Within Groups	73.005	119	.613		
Total	74.225	127			

Dependent variable: Relative Competitive Performance

Furthermore the means and standard deviations of the overall performance for nine clusters of EO profiles are ($M_{\text{cluster1}} = 5.367$, $SD_{\text{cluster1}} = 0.551$), ($M_{\text{cluster2}} = 5.513$, $SD_{\text{cluster2}} = 0.946$), ($M_{\text{cluster3}} = 5.857$, $SD_{\text{cluster3}} = 0.854$), ($M_{\text{cluster4}} = 5.604$, $SD_{\text{cluster4}} = 0.699$), ($M_{\text{cluster5}} = 5.736$, $SD_{\text{cluster5}} = 0.632$), ($M_{\text{cluster6}} = 5.696$, $SD_{\text{cluster6}} = 0.683$), ($M_{\text{cluster7}} = 5.730$, $SD_{\text{cluster7}} = 0.472$), ($M_{\text{cluster8}} = 5.753$, $SD_{\text{cluster8}} = 0.651$), and ($M_{\text{cluster9}} = 6.1$, $SD_{\text{cluster9}} = 0.390$) as seen in table 71.

Table 71.

Overall Performance according to EO Profile : Descriptive Statistics

	N	Mean	Std. Deviation	Std. Error
Cluster 1	18	5.3667	.55401	.13058
Cluster 2	20	5.5125	.94637	.21161
Cluster 3	7	5.8571	.85363	.32264
Cluster 4	10	5.6044	.69900	.22104
Cluster 5	21	5.7357	.63231	.13798
Cluster 6	12	5.6958	.68265	.19707
Cluster 7	11	5.7303	.47192	.14229
Cluster 8	17	5.7529	.65142	.15799
Cluster 9	12	6.1000	.39042	.11270

Dependent variable: Overall Performance

ANOVA test shows that EO profiles haven't any significant impact on the level of overall performance ($F(8,119)=1.332$, $p=0.234>0.05$) as seen in table 72.

Table 72.

Overall Performance level according to EO Profile: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.908	8	.613	1.332	.234
Within Groups	54.820	119	.461		
Total	59.727	127			

Dependent variable: Overall Performance

According to the results of ANOVA tests, only cluster 9 (entrepreneurial firm) has a high objective fulfillment than cluster 1 (conservative firms), thus hypothesis 1c is partially supported.

5.5.2 Hypothesis 2: EO-Business Strategy and Business Strategy-Firm Performance Linkages

A multinomial logistic regression analyses are conducted to examine H_{2a} , H_{2b} , H_{2c} , H_{2d} , H_{2e} , H_{2f} , and H_{2g} and to identify the relationship between the entrepreneurial orientation level of the firm and its adopted business strategy, in addition to the association between EO's dimensions and business strategy. The model including entrepreneurial orientation as independent variable is statistically significant predictor of the dependent variable (types of business strategy) $\chi^2(3, N=128)=28.766$, Nagelkerke $R^2 = 0.225$, $p<0.01$.

Table 73.

Multinomial Logistic Regression for EO-Business Strategy

	B (SE) ^a	95% Confidence Interval for Odds		
		Ratio		
		Lower Bound	Odds Ratio	Upper Bound
Defender Strategy Vs Reactor Strategy				
Entrepreneurial orientation	.509 (.434)	.711	1.663	3.894
Prospector Strategy Vs Reactor Strategy				
Entrepreneurial orientation	1.614 (.444)**	2.103	5.023	12.000
Analyzer Strategy Vs Reactor Strategy				
Entrepreneurial orientation	1.243 (.431)**	1.488	3.465	8.072

a Unstandardized Coefficients (Beta), Standard Error (between parentheses)

b '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

From the table 73, entrepreneurial orientation level isn't significantly predictor to the defender strategy versus reactor strategy, $B = 0.509$, Wald $\chi^2(1) = 1.375$, $p > 0.05$. While entrepreneurial orientation level significantly predicted the prospector strategy versus reactor strategy, $B = 1.614$, Wald $\chi^2(1) = 13.196$, $p < 0.01$. Therefore, the odds of firms behave entrepreneurially adopt prospector strategy are 5.023 times higher than firms adopted reactor strategy. The entrepreneurial orientation level also significantly lead analyzer strategy versus reactor strategy, $B = 1.243$, Wald $\chi^2(1) = 8.297$, $p < 0.01$. Hence, the odds of firms behave entrepreneurially adopt analyzer strategy compared to the reactor strategy are increased by 3.465 factor. Thus H_{2a} is supported.

A multinomial logistic regression analysis is conducted to clarify the impact of the dimensions of entrepreneurial orientation (innovativeness and risk taking) in the firm on the adopted business strategy. The model including independent variables: innovativeness and risk taking are statistically significant predictors of business strategy types, $\chi^2(6, N=128) = 32.556$, Nagelkerke $R^2 = 0.251$, $p < 0.01$.

Table 74.

Multinomial Logistic Regression for (Innovativeness-Risk taking)-Business Strategy

	B (SE) ^a	95% Confidence Interval for Odds Ratio		
		Lower Bound	Odds Ratio	Upper Bound
Defender Strategy Vs Reactor Strategy				
Innovativeness	-.112 (.257)	.540	.894	1.479
Risk taking	.880 (.476)	.948	2.411	6.133
Prospector Strategy Vs Reactor Strategy				
Innovativeness	.346 (.252)	.862	1.413	2.318
Risk taking	1.518 (.469)**	1.819	4.562	11.442
Analyzer Strategy Vs Reactor Strategy				
Innovativeness	.149 (.246)	.716	1.160	1.860
Risk taking	1.346 (.465)**	1.544	3.843	9.564

a Unstandardized Coefficients (Beta), Standard Error (between parentheses)

b ‘*’ indicates $p < 0.05$, ‘**’ sign indicates $p < 0.01$

Table 74 indicates that innovativeness, $B = -0.112$, Wald $\chi^2(1) = 0.190$, $p > 0.05$, and risk taking, $B = .880$, Wald $\chi^2(1) = 3.415$, $p > 0.05$ aren't significant predictors to the defender strategy versus reactor strategy. While innovativeness doesn't significantly predict the prospector strategy versus reactor strategy, $B = .346$, Wald $\chi^2(1) = 1.880$, $p > 0.05$, and the analyzer strategy versus reactor strategy, $B = .149$, Wald $\chi^2(1) = .365$, $p > 0.05$. In contrast, risk taking is positively significant predictor to the prospector strategy versus reactor strategy, $B = 1.518$, Wald $\chi^2(1) = 10.463$, $p < 0.01$. Therefore, the odds of risk taking firms adopt prospector strategy are 4.562 times higher than firms adopt reactor strategy. Furthermore, risk taking also is positively significantly predictor to the analyzer strategy versus reactor strategy, $B = 1.346$, Wald $\chi^2(1) = 8.374$, $p < 0.01$. Thus, the odds of risk taking firms adopt analyzer strategy relative to the reactor strategy are increased by 3.843.

Relying on the correlation table in Appendix X, and the results of the regression analyses, findings show slightly positive relationship between innovativeness and prospector strategy, and a little negative relationship between innovativeness and defender, but innovativeness isn't predictor to the type of business strategy. Thus, H_{2b} , and H_{2c} are

supported. While, risk taking is a significant predictor to the types of business strategy, where, risk taking firms are more likely to adopt prospector and analyzer strategy rather than reactor strategy. Risk taking also has a slightly positive relationship with prospector strategy, and a little negative relationship with defender strategy. Therefore, H_{2f} and H_{2g} aren't confirmed. H_{2d} , and H_{2e} couldn't be tested, since the items of proactiveness are eliminated by factor analysis.

As shown in table 75, hierarchical linear regression analyses are conducted to test hypothesis 2_h. First model is significant $F(6,121)=2.948$, $p<0.05$, $R^2=0.128$, which explains 12.9% of the variance of objective fulfillment. Moreover, the third model also is a significant predictor of overall performance $F(6,121)=2.795$, $p<0.05$, $R^2=0.122$, and explains 12.2% of the variability of overall performance. But, the second model isn't a significant predictor of relative competitive performance $F(6,121)=1.799$, $p>0.05$, $R^2=0.82$.

The multicollinearity diagnostics for model 1, 2 and 3 are assessed to identify all tolerance values which are within the acceptable range (0.169 to 0.995). For the first model, the first step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables accounted for 6.7% of the variance in the objective fulfillment $F(3,124)=2.948$, $p<0.05$, $R^2=0.067$. Although firm age ($\beta = -0.066$, $p>0.05$), and firm size ($\beta = 0.036$, $p>0.05$) aren't statistically significant predictors, the manufacturing industry of basic metals ($\beta = 0.239$, $p<0.01$) is a significant predictor of objective fulfillment. Three types of business strategy (defender, prospector, and analyzer) are entered in the second step. Business strategy significantly increases the variance in objective fulfillment by 6.1%, $\Delta R^2 = 0.061$, $\Delta F(3, 121) = 2.817$, $p<0.05$. Whereas, in reference to reactor strategy, prospector strategy is statistically a significant predictor of objective fulfillment $\beta = 0.523$, $p<0.05$. While, defender strategy compared to reactor strategy isn't statistically a significant predictor of objective fulfillment $\beta = 0.263$, $p>0.05$, as well as the analyzer strategy relative to reactor strategy hasn't a significant impact on objective fulfillment $\beta = 0.326$, $p>0.05$. In the second model, the first step includes the same control variables, then, the types of business strategy are entered in the second step. Business strategies isn't statistically accounted for variance of relative competitive performance $\Delta R^2 = 0.052$, $\Delta F(3, 121) = 2.301$, $p>0.05$. In reference to reactor strategy, defender strategy ($\beta = -0.201$, $p>0.05$), prospector strategy ($\beta = 0.061$, $p>0.05$), and

analyzer strategy ($\beta = -0.023$, $p > 0.05$) haven't any significant impact on relative competitive performance. Moreover, in the third model, the first step includes the same control variables, then the types of business strategy are entered in the second step. Business strategies aren't statistically accounted for variance of overall performance $\Delta R^2 = 0.054$, $\Delta F(3, 121) = 2.491$, $p > 0.05$. In reference to reactor strategy, defender strategy ($\beta = 0.057$, $p > 0.05$), prospector strategy ($\beta = 0.370$, $p > 0.05$), and analyzer strategy ($\beta = 0.197$, $p > 0.05$) aren't statistically significant predictors of overall performance.

According to the correlation table and the regression analyses, results indicate that only prospector strategy positively affects the objective fulfillment and overall performance, but not the relative competitive performance compared to reactor strategy. While, the relative competitive performance has a slightly negative association with defender strategy. Thus, hypothesis 2_h is partially supported.

Table 75.

Hierarchical Regression Analysis: The Impact of Business Strategy on Firm Performance

	Model 1^a Dependent Variable: Objective Fulfillment		Model 2^a Dependent Variable: Relative Competitive Performance		Model 3^a Dependent Variable: Overall Performance	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Firm Age	-.066	-.059	-.004	.004	-.044	-.036
Firm Size	.036	.068	.021	.009	.035	.049
Industry 24:	.239**	.204*	.169	.167	.248**	.224*
Manufacturing of basic metals						
Defender Strategy	-	.263	-	-.201	-	.057
Prospector Strategy	-	.523*	-	.061	-	.370
Analyzer Strategy	-	.326	-	-.023	-	.197
Adjusted R ²	.044	.084	.006	.036	.045	.078
R ²	.067	.128	.030	.082	.067	.122
ΔR^2	.067	.061	.030	.052	.067	.054

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

5.5.3 Hypothesis 3: The Impact of Organizational Structure on EO and EO-Firm Performance Linkage

A hierarchical regression analyses are conducted to test hypothesis 3_a, and hypothesis 3_b. As shown in table 76, the model is significant $F(5,122)=4.069$, $p<0.01$, $R^2=0.143$, and explains 14.3% of the variance of entrepreneurial orientation.

Table 76.

Hierarchical Regression Analysis: The Impact of Organizational Structure on EO

	Model ^a	
	Step 1	Step 2
Firm Age	-.036	-.056
Firm Size	.020	.019
Industry 23: Manufacture of other non-metallic mineral products	-.201*	-.173*
Ownership Type (family versus non-family)	-.233**	-.191*
Organizational Structure	-	.194*
Adjusted R ²	.079	.108
R ²	.108	.143
ΔR^2	.108	.035

a Standardized Coefficients (Beta)

b ‘-’ sign indicates that this variable don’t enter the regression analysis

c ‘*’ indicates $p < 0.05$, ‘**’ sign indicates $p < 0.01$

The multicollinearity diagnostics for the model are examined to identify all tolerance values which are within the acceptable range (0.917 to 0.981). The first step includes the control variables which are the logarithm of firm age and firm size, besides the manufacture of other non-metallic mineral products and the ownership type (family vs. non-family business). The model of these control variables are statistically significant predictor of entrepreneurial orientation $F(4,123)=3.739$, $p<0.01$, $R^2=0.108$. Although firm age ($\beta = -0.036$, $p>0.05$), and firm size ($\beta = 0.020$, $p>0.05$) aren’t statistically significant predictors, the manufacturing of other non-metallic mineral products ($\beta = -0.201$, $p<0.05$), and ownership type (family business) ($\beta = -0.233$, $p<0.01$) are negatively significant predictors of entrepreneurial orientation. The organizational structure which is entered in

the second step has a positively significant impact on the entrepreneurial orientation by 3.5%, $\Delta R^2 = 0.035$, $\Delta F(1,122) = 4.915$, $\beta = 0.194$, $p < 0.05$. Thus, H_{3a} is supported, hence the organic structure positively supports the firms to behave entrepreneurially.

When investigating hypothesis 3_b, table 77 indicates the model is significant $F(6,121) = 3.360$, $p < 0.01$, $R^2 = 0.143$, which explains 14.3% of the variance of objective fulfillment. The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.914 to 0.995). First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables account for 6.7% of the variance in objective fulfillment $F(3,124) = 2.948$, $p < 0.05$, $R^2 = 0.067$. Although firm age ($\beta = -0.066$, $p > 0.05$) and firm size ($\beta = 0.036$, $p > 0.05$) aren't statistically significant predictors, the manufacturing industry of basic metals ($\beta = 0.239$, $p < 0.01$) is significant predictor of objective fulfillment. The second step includes entrepreneurial orientation significantly increases the variance in objective fulfillment by 7.3%, $\Delta R^2 = 0.073$, $\Delta F(1,123) = 10.404$, $\beta = 0.271$, $p < 0.05$. In the third step, organizational structure is entered. Organizational structure isn't statistically significant predictor of the objective fulfillment, $\Delta R^2 = 0$, $\Delta F(1,122) = 0.006$, $\beta = -0.007$, $p > 0.05$. The fourth step includes the interaction between the entrepreneurial orientation and organizational structure. The interaction between these two variables hasn't a statistically significant impact on objective fulfillment. $\Delta R^2 = 0.003$, $\Delta F(1,121) = 0.480$, $\beta = -0.059$, $p > 0.05$.

Table 77.

Hierarchical Regression Analysis: The Impact of Organizational Structure on EO-Objective Fulfillment linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.066	-.052	-.052	-.057
Firm Size	.036	.019	.019	.011
Industry 24: Manufacturing industry of basic metals	.239**	.227**	.228**	.225**
EO	-	.271**	.273**	.271**
Organizational Structure	-	-	-.007	-.007
EO X Organizational Structure	-	-	-	.059
Adjusted R ²	.044	.111	.104	.10
R ²	.067	.139	.139	.143
ΔR^2	.067	.073	0	.003

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

Table 78 shows that model isn't a significant predictor of relative competitive performance $F(6,121)=1.068$, $p>0.05$, $R^2=0.050$. First step includes the same control variables. The control variables haven't statistically significant impact on relative competitive performance $F(3,124)=1.257$, $p>0.05$, $R^2=0.030$. Where, firm age ($\beta = -0.004$, $p>0.05$), firm size ($\beta = 0.021$, $p>0.05$), and manufacturing industry of basic metals ($\beta = 0.169$, $p>0.05$) aren't statistically significant predictors of relative competitive performance. The second step includes entrepreneurial orientation which isn't significantly predictor of relative competitive performance, $\Delta R^2 = 0.020$, $\Delta F(1,123)=2.558$, $\beta = 0.141$, $p>0.05$. In the third step, organizational structure is entered. Organizational structure isn't statistically a significant predictor of the relative competitive performance, $\Delta R^2 = 0.001$, $\Delta F(1,122)=0.087$, $\beta = -0.027$, $p>0.05$. The fourth step includes the interaction between the entrepreneurial orientation and organizational structure. The interaction between these two variables hasn't a statistically significant impact on relative competitive performance. $\Delta R^2 = 0$, $\Delta F(1,121)=0.41$, $\beta = -0.018$, $p>0.05$.

Table 78.

Hierarchical Regression Analysis: The Impact of Organizational Structure on EO- Relative Competitive Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.004	.004	.006	.008
Firm Size	.021	.012	.013	.015
Industry 24: Manufacturing industry of basic metals	.169	.163	.165	.166
EO	-	.141	.148	.149
Organizational Structure	-	-	-.027	-.027
EO X Organizational Structure	-	-	-	-.018
Adjusted R ²	.006	.018	.011	.003
R ²	.030	.049	.050	.050
ΔR^2	.030	.020	.001	0

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

As summarized in table 79, the model is a significant predictor of overall performance $F(6,121)=3.064$, $p<0.01$, $R^2=0.132$. First step includes the same control variables. The control variables have statistically significant impact on overall performance $F(3,124)=2.991$, $p<0.05$, $R^2=0.067$. Where, firm age ($\beta = -0.044$, $p>0.05$), firm size ($\beta = 0.035$, $p>0.05$) aren't statistically significant predictors of overall performance, but the manufacturing industry of basic metals ($\beta = 0.248$, $p<0.01$) has a significantly positive impact on overall performance. The second step includes entrepreneurial orientation which isn't a significant predictor of overall performance, $\Delta R^2 = 0.063$, $\Delta F(1,123)=8.962$, $\beta = 0.253$, $p<0.01$. In the third step, organizational structure is entered. Organizational structure isn't a statistically significant predictor of the overall performance, $\Delta R^2 = 0$, $\Delta F(1,122)=0.049$, $\beta = -0.020$, $p>0.05$. The fourth step includes the interaction between the entrepreneurial orientation and organizational structure. The interaction between these two variables hasn't a statistically significant impact on overall performance $\Delta R^2 = 0.001$, $\Delta F(1,121)=0.105$, $\beta = 0.028$, $p>0.05$.

Table 79.

Hierarchical Regression Analysis: The Impact of Organizational Structure on EO- Overall Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.044	-.032	-.030	-.032
Firm Size	.035	.019	.019	.016
Industry 24: Manufacturing industry of basic metals	.248**	.236**	.238**	.237**
EO	-	.253**	.258**	.257**
Organizational Structure	-	-	-.020	-.020
EO X Organizational Structure	-	-	-	-.028
Adjusted R ²	.045	.103	.096	.089
R ²	.067	.131	.131	.132
ΔR ²	.067	.063	0	.001

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

Thus H_{3b} wasn't supported, therefore organizational structure hadn't any significant moderating impact on objective fulfillment, relative competitive performance, and overall performance.

5.5.4 Hypothesis 4: The Impact of Environmental Uncertainty on EO and EO-Firm Performance Linkage

A hierarchical regression analyses were conducted to test hypotheses 4_{aa}, 4_{ab}, and 4_{ac}. As summarized in table 80, the model is significant $F(7,120)=5.135$, $p<0.01$, $R^2=0.23$, which explains 23% of the variance of entrepreneurial orientation. The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.806 to 0.981). The first step includes the control variables which are the logarithm of firm age and firm size besides the manufacture of other non-metallic mineral products and the ownership type (family vs. non-family business). The model of these control variables is a statistically significant predictor of entrepreneurial orientation $F(4,123)=3.739$, $p<0.01$, $R^2=0.108$. Although firm age ($\beta = -0.036$, $p>0.05$) and firm size

($\beta = 0.020$, $p > 0.05$) aren't statistically significant predictors, the manufacturing of other non-metallic mineral products ($\beta = -0.201$, $p < 0.05$) and ownership type (family business) ($\beta = -0.233$, $p < 0.01$) are negatively significant predictors of entrepreneurial orientation. The dimensions of environmental uncertainty: environmental dynamism, heterogeneity, and hostility are entered in the second step. The dimensions of environmental uncertainty have statistically significant impact on the entrepreneurial orientation by 12.2%, $\Delta R^2 = 0.122$, $\Delta F(3, 120) = 6.346$, $p < 0.01$, whereas, environmental dynamism ($\beta = 0.213$, $p < 0.05$), has a positively but, environmental hostility ($\beta = -0.326$, $p < 0.01$) has a negatively significant impact on the entrepreneurial orientation. Conversely, the environmental heterogeneity ($\beta = 0.099$, $p > 0.05$) hasn't any significant impact on the entrepreneurial orientation.

Table 80.

Hierarchical Regression Analysis: The Impact of Environmental Uncertainty on EO

	Model ^a	
	Step 1	Step 2
Firm Age	-.036	-.045
Firm Size	.020	.060
Industry 23: Manufacture of other non-metallic mineral products	-.201*	-.177*
Ownership Type (family versus non-family)	-.233**	-.158
Environmental Dynamism	-	.213*
Environmental Heterogeneity	-	.099
Environmental Hostility	-	-.326**
Adjusted R ²	.079	.186
R ²	.108	.230
ΔR^2	.108	.122

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

Thus, hypothesis 4_{aa} is supported, therefore the environmental dynamism fosters the entrepreneurial behaviors of the firms, while the results oppose to what hypothesis 4_{ac} proposes, where, the environmental hostility decreases the entrepreneurial behaviors of the

firms. Furthermore, environmental heterogeneity hasn't any impact on the level of entrepreneurial orientation in the firms. Thus, there is no support for hypothesis 4_{ab} as well.

A hierarchical linear regression analyses are conducted to test hypotheses 4_{ba}, 4_{bb}, and 4_{bc}. The results are summarized in tables 81, 82, and 83. According to table 81, the model is significant $F(10,117)=2.832$, $p<0.01$, $R^2=0.195$, and explains 19.5% of the variance of objective fulfillment.

Table 81.

Hierarchical Regression Analysis: The Impact of Environmental Uncertainty on EO-Objective Fulfillment Linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.066	-.052	-.059	-.061
Firm Size	.036	.019	.046	.042
Industry 24: Manufacturing industry of basic metals	.239**	.227**	.213*	.221**
EO	-	.271**	.170	.172
Environmental Dynamism	-	-	.153	.154
Environmental Heterogeneity	-	-	.061	.059
Environmental Hostility			-.225*	-.229*
EO X Environmental Dynamism				-.039
EO X Environmental Heterogeneity				-.055
EO X Environmental Hostility				-.004
Adjusted R ²	.044	.111	.143	.126
R ²	.067	.139	.190	.195
ΔR^2	.067	.073	0.051	.005

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.727 to 0.995). First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables account for 6.7% of the variance in

objective fulfillment $F(3,124)=2.948$, $p<0.05$, $R^2=0.067$. Although firm age ($\beta = -0.066$, $p>0.05$), and firm size ($\beta = 0.036$, $p>0.05$) aren't statistically significant predictors, the manufacturing industry of basic metals ($\beta = 0.239$, $p<0.01$) is a significant predictor of objective fulfillment. The second step includes entrepreneurial orientation significantly increases the variance in objective fulfillment by 7.3%, $\Delta R^2 = 0.073$, $\Delta F(1,123)=10.404$, $\beta = 0.271$, $p<0.05$. In the third step, the dimensions of environmental uncertainty: environmental dynamism, environmental heterogeneity, and environmental hostility are entered. The dimensions of environmental uncertainty don't significantly add to the variance of the objective fulfillment, $\Delta R^2 = 0.051$, $\Delta F(3,120)=2.501$, $p>0.05$, whereas, neither environmental dynamism ($\beta = 0.153$, $p>0.05$) nor environmental heterogeneity ($\beta = 0.061$, $p>0.05$) has a significant impact on objective fulfillment, but environmental hostility ($\beta = -0.225$, $p<0.05$) has a significantly negative impact on objective fulfillment. The fourth step includes the interaction between the entrepreneurial orientation and each of environmental dynamism, environmental heterogeneity, and environmental hostility. The interactions between these variables haven't any statistically significant impact on objective fulfillment. $\Delta R^2 = 0.005$, $\Delta F(3,117)=0.236$, $p>0.05$, where, the interaction between the entrepreneurial orientation and the environmental dynamism ($\beta = -0.039$, $p>0.05$), the interaction between entrepreneurial orientation and the environmental heterogeneity ($\beta = -0.055$, $p>0.05$), and the interaction between entrepreneurial orientation and the environmental hostility ($\beta = -0.004$, $p>0.05$) haven't any significant impact on objective fulfillment.

Table 82.

Hierarchical Regression Analysis: The Impact of Environmental Uncertainty on EO-Relative Competitive Performance Linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.004	-.004	-.008	-.010
Firm Size	.021	.012	.032	.007
Industry 24: Manufacturing industry of basic metals	.169	.163	.135	.144
EO	-	.141	.070	.093
Environmental Dynamism	-	-	.229*	.252*
Environmental Heterogeneity	-	-	-.110	-.150
Environmental Hostility	-	-	-.158	-.165
EO X Environmental Dynamism	-	-	-	-.014
EO X Environmental Heterogeneity	-	-	-	-.115
EO X Environmental Hostility	-	-	-	-.194*
Adjusted R ²	.006	.018	.047	.081
R ²	.030	.049	.10	.153
ΔR^2	.030	.020	0.050	.054

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

As shown in table 82, the model is significant predictor of relative competitive performance $F(10,117)=2.118$, $p<0.05$, $R^2=0.153$. First step includes the same control variables. These variables aren't significant predictors of relative competitive performance $F(3,124)=1.257$, $p>0.05$, $R^2=0.030$. Where, firm age ($\beta = -0.004$, $p>0.05$), firm size ($\beta = 0.021$, $p>0.05$), and the manufacturing industry of basic metals ($\beta = 0.169$, $p>0.05$) aren't statistically significant predictors of relative competitive performance. The second step includes the entrepreneurial orientation which hasn't a significantly effect on the relative competitive performance $\Delta R^2 = 0.020$, $\Delta F(1,123)=2.558$, $\beta = 0.141$, $p>0.05$. In the third step, the dimensions of environmental uncertainty: environmental dynamism, environmental heterogeneity, and environmental hostility are entered. Environmental uncertainty isn't statistically significant predictor of the objective fulfillment, $\Delta R^2 = 0.050$,

$\Delta F(3,120)=2.235$, $p>0.05$, whereas, neither environmental hostility ($\beta = -0.158$, $p>0.05$) nor environmental heterogeneity ($\beta = -0.110$, $p>0.05$) has a significant impact on relative competitive performance, but environmental dynamism ($\beta = 0.229$, $p<0.05$) has a significant impact on relative competitive performance. The fourth step includes the interaction between the entrepreneurial orientation and each of environmental dynamism, environmental heterogeneity, and environmental hostility. The interactions between these variables haven't any significant addition in the variance of relative competitive performance $\Delta R^2 = 0.054$, $\Delta F(3,117)=2.473$, $p>0.05$, where, the interaction between the entrepreneurial orientation and the environmental dynamism ($\beta = -0.014$, $p>0.05$), and the interaction between entrepreneurial orientation and the environmental heterogeneity ($\beta = -0.115$, $p>0.05$) haven't any significant impact on relative competitive performance, but the interaction between entrepreneurial orientation and the environmental hostility ($\beta = -0.194$, $p<0.05$) has a significantly negative effect on relative competitive performance.

Table 83 shows that the model is significant $F(10,117)=1.305$, $p<0.01$, $R^2=0.218$, which explains 21.8% of the variance of overall performance. First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables account for 6.7% of the variance in overall performance $F(3,124)=2.991$, $p<0.05$, $R^2=0.067$. Although firm age ($\beta = -0.044$, $p>0.05$), and firm size ($\beta = 0.035$, $p>0.05$) aren't statistically significant predictors, the manufacturing industry of basic metals ($\beta = 0.248$, $p<0.01$) is a significant predictor of overall performance. The second step includes entrepreneurial orientation which significantly increases the variance in overall performance by 6.3%, $\Delta R^2 = 0.063$, $\Delta F(1,123)=8.962$, $\beta = 0.253$, $p<0.01$. In the third step, the dimensions of environmental uncertainty: environmental dynamism, environmental heterogeneity, and environmental hostility are entered. Environmental uncertainty doesn't significantly add to the variance of the overall performance, $\Delta R^2 = 0.062$, $\Delta F(3,120)=3.073$, $p<0.05$, whereas, the environmental dynamism ($\beta = 0.226$, $p<0.05$) positively and environmental hostility ($\beta = -0.232$, $p<0.05$) negatively affect the overall performance. However, environmental heterogeneity ($\beta = -0.022$, $p>0.05$) hasn't a significant impact on overall performance. The fourth step includes the interaction between the entrepreneurial orientation and each of

environmental dynamism, environmental heterogeneity, and environmental hostility. The interactions between these variables haven't any statistically significant impact on overall performance $\Delta R^2 = 0.026$, $\Delta F(3,117) = 1.280$, $p > 0.05$, where, the interaction between the entrepreneurial orientation and the environmental dynamism ($\beta = -0.033$, $p > 0.05$), the interaction between entrepreneurial orientation and the environmental heterogeneity ($\beta = -0.099$, $p > 0.05$), and the interaction between entrepreneurial orientation and the environmental hostility ($\beta = -0.111$, $p > 0.05$) haven't any significant impact on overall performance.

Table 83.

Hierarchical Regression Analysis: The Impact of Environmental Uncertainty on EO-Overall Performance Linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.044	-.032	-.034	-.045
Firm Size	.035	.019	.047	.031
Industry 24: Manufacturing industry of basic metals	.248**	.236**	.212*	.222**
EO	-	.253**	.148	.162
Environmental Dynamism	-	-	.226*	.240*
Environmental Heterogeneity	-	-	-.022	-.047
Environmental Hostility			-.232*	-.239*
EO X Environmental Dynamism				-.033
EO X Environmental Heterogeneity				-.099
EO X Environmental Hostility				-.111
Adjusted R ²	.045	.103	.146	.152
R ²	.067	.131	.193	.218
ΔR^2	.067	.063	0.062	.026

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

Accordingly, hypotheses 4_{ba} , 4_{bb} , and 4_{bc} aren't supported. The results indicate the environmental hostility negatively moderates the relationship between EO-relative competitive performance, which mean in hostile environment, entrepreneurial firms has low relative competitive performance.

5.5.5 Hypothesis 5: The Impact of Firm Resources on EO, and EO-Firm Performance Linkage

A hierarchical regression analysis is conducted to test hypothesis 5_a as shown in table 84. The first model isn't statistically significant predictor of entrepreneurial orientation $F(5,122)=3.841$, $p>0.05$, $R^2=0.136$. However, the second model has a statistically significant impact on entrepreneurial orientation $F(6,121)=3.544$, $p<0.01$, $R^2=0.149$. The multicollinearity diagnostics for the model is assessed to identify all tolerance values which are within the acceptable range (0.827 to 0.981).

As shown in the model 1, the first step includes the control variables which are the logarithm of firm age and firm size besides the manufacture of other non-metallic mineral products and the ownership type (family vs. non-family business). The model of the control variables is statistically significant predictor of entrepreneurial orientation $F(4,123)=3.739$, $p<0.01$, $R^2=0.108$. Where, firm age ($\beta = -0.036$, $p>0.05$), and firm size ($\beta = 0.020$, $p>0.05$) aren't statistically significant predictors, but, the manufacturing of other non-metallic mineral products ($\beta = -0.201$, $p<0.05$), and ownership type (family business) ($\beta = -0.233$, $p<0.01$) are negatively significant predictors of entrepreneurial orientation. Firm resources are entered in the second step. Firm resources haven't any significant impact on the entrepreneurial orientation $\Delta R^2 = 0.028$, $\Delta F(1, 122) = 3.896$, $\beta = 0.171$, $p>0.05$. In the second model, the first step includes the same control variables. Control variables have significant additions to the variance of entrepreneurial orientation $F(4,123)=3.739$, $p<0.01$, $R^2=0.108$. Where, firm age ($\beta = -0.036$, $p>0.05$) and firm size ($\beta = 0.020$, $p>0.05$) aren't statistically significant predictors, while, the manufacturing of other non-metallic mineral products ($\beta = -0.201$, $p<0.05$) and ownership type (family business) ($\beta = -0.233$, $p<0.01$) are negatively significant predictors of entrepreneurial orientation. Financial and non-financial resources are entered in the second step. Whereas, the financial resources ($\beta = -0.070$, $p>0.05$) haven't statistically significant impact on the entrepreneurial orientation, but, the

non-financial resources ($\beta = 0.223$, $p < 0.05$) are statistically significant predictors of the entrepreneurial orientation. According to the correlation table, firm resources have slightly positive relationship with the entrepreneurial orientation, but only the non-financial resources increase the level of entrepreneurial orientation in the firm. Thus, hypothesis 5a is supported.

Table 84.

Hierarchical Regression Analysis: The Impact of the Firm Resources on EO

	Model 1 ^a		Model 2 ^a	
	Step 1	Step 2	Step 1	Step 2
Firm Age	-.036	-.028	-.036	-.016
Firm Size	.020	.023	.020	.018
Industry 23: Manufacture of other non-metallic mineral products	-.201*	-.183*	-.201*	-.173*
Ownership Type (family versus non-family)	-.233**	-.199*	-.233**	-.183*
Firm Resources	-	.171	-	-
Financial Resources	-	-	-	-.070
Non-financial Resources	-	-	-	.223*
Adjusted R ²	.079	.101	.079	.107
R ²	.108	.028	.108	.149
ΔR^2	.108	.136	.108	.041

a Standardized Coefficients (Beta)

b ‘-’ sign indicates that this variable don’t enter the regression analysis

c ‘*’ indicates $p < 0.05$, ‘**’ sign indicates $p < 0.01$

A hierarchical regression analyses are conducted to test hypothesis 5b, results are summarized in tables 85, 86, 87, 88, 89, and 90. According to table 85, the model is significant predictor of objective fulfillment $F(6,121)=15.606$, $p < 0.05$, $R^2=0.436$. The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.889 to 0.995).

Table 85.

Hierarchical Regression Analysis: The Impact of Firm Resources on EO-Objective Fulfillment linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.066	-.052	-.027	-.027
Firm Size	.036	.019	.019	.013
Industry 24: Manufacturing industry of basic metals	.239**	.227**	.181**	.181*
EO	-	.271**	.141*	.137
Firm Resources	-	-	.563**	.571**
EO X Firm Resources	-	-	-	.036
Adjusted R ²	.044	.111	.412	.408
R ²	.067	.139	.435	.436
ΔR^2	.067	.073	0.296	.001

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. The control variables don't significantly add to the variance of objective fulfillment $F(3,124)=2.948$, $p>0.05$, $R^2=0.067$. Therefore, firm age ($\beta = -0.066$, $p>0.05$), and firm size ($\beta = 0.036$, $p>0.05$) aren't statistically significant predictors of objective fulfillment. However, the manufacturing industry of basic metals ($\beta = 0.239$, $p<0.01$) has a statistically significant impact on objective fulfillment. The second step includes the entrepreneurial orientation which significantly affects objective fulfillment $\Delta R^2 = 0.073$, $\Delta F(1,123)=10.404$, $\beta = 0.271$, $p<0.01$. The third step includes the firm resources which are significant predictors for objective fulfillment $\Delta R^2 = 0.296$, $\Delta F(1,122)=63.869$, $\beta = 0.563$, $p<0.01$. The fourth step includes the interaction between the entrepreneurial orientation and firm resources. The interaction hasn't a statistically significant impact on the objective fulfillment $\Delta R^2 = 0.001$, $\Delta F(1,121)=0.248$, $\beta = 0.036$, $p>0.05$.

Table 86.

Hierarchical Regression Analysis: The Impact of Financial and Non-financial Resources on EO- Objective Fulfillment linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.066	-.052	-.010	-.011
Firm Size	.036	.019	.012	-.001
Industry 24: Manufacturing industry of basic metals	.239**	.227**	.186**	.187**
EO	-	.271**	.114	.109
Financial Resources	-	-	.001	.004
Non-financial Resources	-	-	.591**	.598**
EO X Financial Resources				.046
EO X Non-financial Resources				-.011
Adjusted R ²	.044	.111	.432	.424
R ²	.067	.139	.459	.460
ΔR^2	.067	.073	0.319	.002

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

As shown in table 86, the model is significant $F(8,119)=12.695$, $p<0.01$, $R^2=0.460$, which explains 46% of the variance of objective fulfillment. The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.780 to 0.995). First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables account for 6.7% of the variance in objective fulfillment $F(3,124)=2.948$, $p<0.05$, $R^2=0.067$. Although firm age ($\beta = -0.066$, $p>0.05$), and firm size ($\beta = 0.036$, $p>0.05$) aren't statistically significant predictors, the manufacturing industry of basic metals ($\beta = 0.239$, $p<0.01$) is a significant predictor of objective fulfillment. The second step includes entrepreneurial orientation significantly increases the variance in objective fulfillment by 7.3%, $\Delta R^2 = 0.073$, $\Delta F(1,123)=10.404$, $\beta = 0.271$, $p<0.05$. In the third step, the dimensions of firm resources: financial resources, and non-financial resources are entered. The dimensions of firm resources have significant addition to the variance of the objective

fulfillment, $\Delta R^2 = 0.319$, $\Delta F(2,121) = 35.703$, $p < 0.01$, whereas, financial resources ($\beta = 0.001$, $p > 0.05$) haven't significant impact on objective fulfillment, but non-financial resources ($\beta = 0.591$, $p < 0.05$) have significant impact on objective fulfillment. The fourth step includes the interactions between the entrepreneurial orientation and each of financial resources, and non-financial resources. The interactions between these variables haven't any statistically significant impact on objective fulfillment $\Delta R^2 = 0.002$, $\Delta F(2,119) = 0.186$, $p > 0.05$, where, the interactions between the entrepreneurial orientation and the financial resources ($\beta = 0.046$, $p > 0.05$), and between entrepreneurial orientation and the non-financial resources ($\beta = -0.011$, $p > 0.05$) haven't any significant impact on objective fulfillment.

Table 87.

Hierarchical Regression Analysis: The Impact of Firm Resources on EO-Relative Competitive Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.004	.004	.013	.014
Firm Size	.021	.012	.012	-.011
Industry 24: Manufacturing industry of basic metals	.169	.163	.146	.145
EO	-	.141	.095	.082
Firm Resources	-	-	.201*	.228*
EO X Firm Resources	-	-	-	.123
Adjusted R ²	.006	.018	.050	.056
R ²	.030	.049	.087	.101
ΔR^2	.030	.020	0.038	.014

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

As shown in table 87, the model is a significant predictor of relative competitive performance $F(6,121) = 2.261$, $p < 0.05$, $R^2 = 0.101$. First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. The control variables haven't significant addition to the variance in the

relative competitive performance $F(3,124)=1.257$, $p>0.05$, $R^2=0.067$. Therefore, firm age ($\beta = -0.004$, $p>0.05$), firm size ($\beta = 0.021$, $p>0.05$), and the manufacturing industry of basic metals ($\beta = 0.169$, $p>0.05$) aren't statistically significant predictors of relative competitive performance. The second step includes entrepreneurial orientation which doesn't significantly affect the relative competitive performance $\Delta R^2 = 0.020$, $\Delta F(1,123)=2.558$, $\beta = 0.141$, $p>0.05$. The third step includes the firm resources which are significant predictors for the relative competitive performance $\Delta R^2 = 0.038$, $\Delta F(1,122)=5.036$, $\beta = 0.201$, $p<0.05$. The fourth step includes the interaction between the entrepreneurial orientation and firm resources. The interaction hasn't a statistically significant impact on the relative competitive performance $\Delta R^2 = 0.014$, $\Delta F(1,121)=1.859$, $\beta = 0.123$, $p>0.05$.

As shown in table 88, the model isn't a significant predictor of relative competitive performance $F(8,119)=1.674$, $p>0.05$, $R^2=0.101$. First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. The control variables haven't any significant addition to the variance of relative competitive performance $F(3,124)=1.257$, $p>0.05$, $R^2=0.030$. Therefore, firm age ($\beta = -0.004$, $p>0.05$), firm size ($\beta = 0.021$, $p>0.05$), and the manufacturing industry of basic metals ($\beta = 0.169$, $p>0.05$) aren't statistically significant predictors of relative competitive performance. The second step includes the entrepreneurial orientation which hasn't a significant impact on relative competitive performance $\Delta R^2 = 0.020$, $\Delta F(1,123)=2.558$, $\beta = 0.141$, $p>0.05$. In the third step, the dimensions of firm resources: financial resources, and non-financial resources are entered. The dimensions of firm resources are statistically significant predictors of the relative competitive performance, $\Delta R^2 = 0.038$, $\Delta F(2,121)=2.514$, $p>0.05$, whereas, financial resources ($\beta = 0.040$, $p>0.05$), and non-financial resources ($\beta = 0.186$, $p>0.05$) haven't any significant impact on relative competitive performance. The fourth step includes the interactions between the entrepreneurial orientation and each of financial resources, and non-financial resources. The interactions between these variables haven't any statistically significant impact on relative competitive performance $\Delta R^2 = 0.014$, $\Delta F(2,119)=0.922$, $p>0.05$, where, the interactions between the entrepreneurial orientation and the financial resources ($\beta = 0.114$,

$p > 0.05$), and between entrepreneurial orientation and the non-financial resources ($\beta = 0.025$, $p > 0.05$) haven't any significant impact on relative competitive performance.

Table 88.

Hierarchical Regression Analysis: The Impact of Financial and Non-financial resources on EO- Relative Competitive Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.004	.004	.014	.015
Firm Size	.021	.012	.012	-.014
Industry 24: Manufacturing industry of basic metals	.169	.163	.147	.146
EO	-	.141	.092	.079
Financial Resources	-	-	.040	.047
Non-financial Resources	-	-	.186	.211*
EO X Financial Resources	-	-	-	.114
EO X Non-financial Resources	-	-	-	.025
Adjusted R ²	.006	.018	.042	.041
R ²	.030	.049	.087	.101
ΔR^2	.030	.020	0.038	.014

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

As shown in table 89, The model is a significant predictor of overall performance $F(6,121)=10.750$, $p < 0.05$, $R^2=0.348$. The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.889 to 0.995). First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. The control variables don't significantly add to the variance of overall performance $F(3,124)=1.257$, $p > 0.05$, $R^2=0.067$. Therefore, firm age ($\beta = -0.044$, $p > 0.05$), and firm size ($\beta = 0.035$, $p > 0.05$) aren't statistically significant predictors of overall performance. However, the manufacturing industry of basic metals ($\beta = 0.248$, $p < 0.05$) has a statistically significant impact on overall

performance. The second step includes the entrepreneurial orientation which significantly affects the overall performance $\Delta R^2 = 0.063$, $\Delta F(1,123)=8.962$, $\beta = 0.253$, $p < 0.01$. The third step includes the firm resources which are significant predictors for overall performance $\Delta R^2 = 0.209$, $\Delta F(1,122)=38.689$, $\beta = 0.473$, $p < 0.01$. The fourth step includes the interaction between the entrepreneurial orientation and firm resources. The interaction hasn't any statistically significant impact on the overall performance $\Delta R^2 = 0.008$, $\Delta F(1,121)=1.416$, $\beta = 0.091$, $p > 0.05$.

Table 89.

Hierarchical Regression Analysis: The Impact of Firm Resources on EO-Overall Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.044	-.032	-.010	.009
Firm Size	.035	.019	.019	.002
Industry 24: Manufacturing industry of basic metals	.248**	.236**	.198**	.197**
EO	-	.253**	.143	.134
Firm Resources	-	-	.473**	.494**
EO X Firm Resources	-	-	-	.091
Adjusted R ²	.045	.103	.313	.315
R ²	.067	.131	.340	.348
ΔR^2	.067	.063	0.209	.008

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

Table 90 refers to the model which is a significant predictor of overall performance $F(8,119)=8.361$, $p < 0.01$, $R^2=0.360$. First step includes the control variables which are the logarithm of firm age and firm size besides the manufacturing industry of basic metals. These variables account for 6.7% of the variance in overall performance $F(3,124)=2.991$, $p < 0.05$, $R^2=0.067$. Although firm age ($\beta = -0.044$, $p > 0.05$), and firm size ($\beta = 0.035$, $p > 0.05$) aren't statistically significant predictors, the manufacturing industry of basic metals ($\beta = 0.248$, $p < 0.01$) is a significant predictor of overall performance. The second step including

the entrepreneurial orientation significantly increases the variance in overall performance by 6.3%, $\Delta R^2 = 0.063$, $\Delta F(1,123)=8.962$, $\beta = 0.253$, $p < 0.01$. In the third step, the dimensions of firm resources: financial resources, and non-financial resources are entered. The dimensions of firm resources have significant addition to the variance in the overall performance, $\Delta R^2 = 0.221$, $\Delta F(2,121)=20.607$, $p < 0.01$, whereas, the financial resources ($\beta = 0.023$, $p > 0.05$) haven't significant impact on overall performance, however the non-financial resources ($\beta = 0.483$, $p < 0.01$) have significant impact on overall performance.

Table 90.

Hierarchical Regression Analysis: The Impact of Financial and Non-financial Resources on EO-Overall Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.044	-.032	.002	.001
Firm Size	.035	.019	.014	-.008
Industry 24: Manufacturing industry of basic metals	.248**	.236**	.201**	.202**
EO	-	.253**	.125	.114
Financial Resources	-	-	.023	.029
Non-financial Resources	-	-	.483**	.502**
EO X Financial Resources				.093
EO X Non-financial Resources				.007
Adjusted R ²	.045	.103	.319	.317
R ²	.067	.131	.352	.360
ΔR^2	.067	.063	0.221	.008

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

The fourth step includes the interactions between the entrepreneurial orientation and each of financial resources, and non-financial resources. The interactions between these variables haven't any statistically significant impact on overall performance $\Delta R^2 = 0.008$, $\Delta F(2,119)=0.759$, $p > 0.05$, where, the interactions between the entrepreneurial orientation and the financial resources ($\beta = 0.093$, $p > 0.05$), and between entrepreneurial orientation and

the non-financial resources ($\beta = 0.007$, $p > 0.05$) haven't any significant impact on overall performance.

Accordingly, hypothesis 5_{bb}, isn't supported. Therefore, firm resources (financial and non-financial resources) don't moderate the relationship between EO-firm performance, and entrepreneurial firms with high financial and non-financial resources mayn't have higher performance compared with entrepreneurial firms with low financial and non-financial resources.

5.5.6 Hypothesis 6: The Impact of Industry Life Cycle on EO, and EO-Firm Performance Linkage

A hierarchical regression analyses are conducted to test hypothesis 6_a. The model is statistically significant predictor of entrepreneurial orientation $F(5,117)=3.212$, $p < 0.05$, $R^2=0.136$. The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.960 to 0.982). As shown in table 91, the first step includes the control variables which are the logarithm of firm age and firm size besides the manufacture of other non-metallic mineral products and the ownership type (family vs. non-family business). These control variables significantly added to the variance of entrepreneurial orientation $F(4,118)=3.781$, $p < 0.01$, $R^2=0.114$. Where, firm age ($\beta = -0.051$, $p > 0.05$), and firm size ($\beta = 0$, $p > 0.05$) aren't statistically significant predictors, but, the manufacturing of other non-metallic mineral products ($\beta = -0.201$, $p < 0.05$), and ownership type (family business) ($\beta = -0.243$, $p < 0.01$) are negatively significant predictors of entrepreneurial orientation. Industry life cycle is entered in the second step. Industry life cycle isn't a significant predictor of the entrepreneurial orientation $\Delta R^2 = 0.007$, $\Delta F(1, 117) = 0.942$, $\beta = -0.85$, $p > 0.05$. Thus, hypotheses 6_a, isn't supported. Hence, the stage of industry life cycle hasn't any significant impact on the level of entrepreneurial orientation in the firms.

Table 91.

Hierarchical Regression Analysis: The Impact of Industry Life Cycle on EO

	Model ^a	
	Step 1	Step 2
Firm Age	-.051	-.043
Firm Size	.00	.009
Industry 23: Manufacture of other non-metallic mineral products	-.201 [*]	-.201 [*]
Ownership Type (family versus non-family)	-.243 ^{**}	-.245 ^{**}
Industry Life Cycle	-	-.085
Adjusted R ²	.084	.083
R ²	.114	.121
ΔR^2	.114	.007

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '**' indicates $p < 0.05$, '***' sign indicates $p < 0.01$

Dependent Variable: EO

As shown in tables 92, 93, and 94, a hierarchical regression analyses are conducted to test hypothesis 6_b. According to table 92, the model is significant predictor of objective fulfillment $F(6,116)=2.998$, $p<0.01$, $R^2=0.134$. The multicollinearity diagnostics for the model are assessed to identify all tolerance values which are within the acceptable range (0.954 to 0.994). First step includes the same control variables. The control variables haven't a statistically significant impact on the variance of objective fulfillment $F(3,119)=2.542$, $p>0.05$, $R^2=0.060$. Where, firm age ($\beta = -0.091$, $p>0.05$), and firm size ($\beta = 0.027$, $p>0.05$) haven't any significant impact on the objective fulfillment. However, manufacturing industry of basic metals ($\beta = 0.217$, $p<0.05$) is statistically significant predictor of the objective fulfillment. The second step includes entrepreneurial orientation which is a significantly predictor of objective fulfillment, $\Delta R^2 = 0.069$, $\Delta F(1,118)=9.419$, $\beta = 0.266$, $p<0.01$. In the third step, industry life cycle is entered. Industry life cycle isn't statistically significant predictor of the objective fulfillment, $\Delta R^2 = 0.004$, $\Delta F(1,117)=0.562$, $\beta = -0.066$, $p>0.05$. The fourth step includes the interaction between the entrepreneurial

orientation and industry life cycle. The interaction hasn't any statistically significant impact on objective fulfillment $\Delta R^2 = 0$, $\Delta F(1,116) = 0.052$, $\beta = -0.020$, $p > 0.05$.

Table 92.

Hierarchical Regression Analysis: The Impact of Industry Life Cycle on EO-Objective Fulfillment linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.091	-.075	-.070	-.071
Firm Size	.027	.017	.025	.024
Industry 24: Manufacturing industry of basic metals	.217*	.191*	.183*	.182*
EO	-	.266**	.262**	.261**
Industry Life Cycle	-	-	-.066	-.067
EO X Industry Life Cycle	-	-	-	-.020
Adjusted R ²	.037	.100	.097	.089
R ²	.060	.130	.134	.134
ΔR^2	.060	.069	.004	0

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

As shown in table 93, the model isn't a significant predictor of relative competitive performance $F(6,116) = 0.833$, $p > 0.05$, $R^2 = 0.041$. First step includes the same control variables. The control variables haven't any statistically significant impact on relative competitive performance $F(3,119) = 0.668$, $p > 0.05$, $R^2 = 0.017$. Where, firm age ($\beta = -0.029$, $p > 0.05$), firm size ($\beta = 0.028$, $p > 0.05$), and manufacturing industry of basic metals ($\beta = 0.118$, $p > 0.05$) haven't any significant impact on relative competitive performance. The second step includes entrepreneurial orientation which isn't a significantly predictor of relative competitive performance, $\Delta R^2 = 0.21$, $\Delta F(1,118) = 2.573$, $\beta = 0.146$, $p > 0.05$. In the third step, industry life cycle is entered which isn't statistically significant predictor of the relative competitive performance, $\Delta R^2 = 0.004$, $\Delta F(1,117) = 0.456$, $\beta = 0.062$, $p > 0.05$. The fourth step includes the interaction between the entrepreneurial orientation and industry life

cycle. The interaction hasn't any statistically significant impact on relative competitive performance $\Delta R^2 = 0$, $\Delta F(1,116)=0.002$, $\beta = 0.004$, $p>0.05$.

Table 93.

Hierarchical Regression Analysis: The Impact of Industry Life Cycle on EO-Relative Competitive Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.029	-.020	-.025	-.026
Firm Size	.028	.023	.015	.014
Industry 24: Manufacturing industry of basic metals	.118	.103	.110	.110
EO	-	.146	.150	.150
Industry Life Cycle	-	-	.062	.062
EO X Industry Life Cycle	-	-	-	-.004
Adjusted R ²	-.008	.005	0	-.008
R ²	.017	.038	.041	.041
ΔR^2	.017	.021	.004	0

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

As shown in table 94, the model is a significant predictor of overall performance $F(6,116)=2.617$, $p<0.05$, $R^2=0.119$. First step includes the same control variables. The control variables haven't any significant addition to the variance of the overall performance $F(3,119)=2.542$, $p>0.05$, $R^2=0.054$. Where, firm age ($\beta = -0.077$, $p>0.05$), and firm size ($\beta = 0.034$, $p>0.05$) haven't any significant impact on the overall performance. However, manufacturing industry of basic metals ($\beta = 0.209$, $p<0.05$) is a statistically significant predictor of overall performance. The second step includes the entrepreneurial orientation which is a significant predictor of overall performance, $\Delta R^2 = 0.065$, $\Delta F(1,118)=8.677$, $\beta = 0.257$, $p<0.05$. In the third step, industry life cycle is entered. Industry life cycle isn't statistically significant predictor of the overall performance, $\Delta R^2 = 0$, $\Delta F(1,117)=0.009$, $\beta = -0.008$, $p>0.05$. The fourth step includes the interaction between the entrepreneurial orientation and industry life cycle. The interaction hasn't any statistically significant impact

on overall performance $\Delta R^2 = 0$, $\Delta F(1,116) = 0.030$, $\beta = -0.015$, $p > 0.05$. Thus, hypotheses 6_b isn't supported. Where the stage of industry life cycle hasn't any significant moderating impact on the EO-firm performance relationship.

Table 94.

Hierarchical Regression Analysis: The Impact of Industry Life Cycle on EO- Overall Performance linkage

	Model ^a			
	Step 1	Step 2	Step 3	Step 4
Firm Age	-.077	-.061	-.060	-.061
Firm Size	.034	.024	.025	.024
Industry 24: Manufacturing industry of basic metals	.209*	.183*	.182*	.181*
EO	-	.257**	.256**	.256**
Industry Life Cycle	-	-	-.008	-.010
EO X Industry Life Cycle	-	-	-	-.015
Adjusted R ²	.030	.089	.081	.074
R ²	.054	.119	.119	.119
ΔR^2	.054	.065	0	0

a Standardized Coefficients (Beta)

b '-' sign indicates that this variable don't enter the regression analysis

c '*' indicates $p < 0.05$, '**' sign indicates $p < 0.01$

Considering all the previous analyses and the examination of all supposed relationships between the study variables, Table 95 summarizes all the results of testing the hypotheses.

Table 95.

Hypotheses and Results

Hypothesis	Relationship	Conclusion	Commentary
H _{1a}	EO-firm performance	Partially supported	Only, EO-overall performance and EO-objective fulfillment relationships are supported. EO-relative competitive performance relationship isn't supported.
H _{1b}	Inverse U-shaped curve relationship between EO-firm performance	Not supported	The relationship between EO and firm performance is linear not curvilinear relationship.
H _{1c}	Entrepreneurial firms perform better than conservative firms	Partially Supported	The Entrepreneurial firms with high innovativeness, and high risk taking have higher level of objective fulfillment than conservative firms with low innovativeness, and low risk taking.
H _{2a}	Entrepreneurial firms are more likely to engage in prospector strategy	Supported	The odds of entrepreneurial firms adopt prospector strategy are 5.023 times greater than entrepreneurial firms adopt reactor strategy
H _{2b}	The positive relationship between innovativeness and prospector strategy	Supported	There is a significant relationship in the supposed direction
H _{2c}	The negative relationship between innovativeness and defender strategy	Supported	There is a significant relationship in the supposed direction
H _{2d}	The positive relationship between proactiveness and prospector strategy	Not tested	The items of proactiveness are eliminated by factor analysis
H _{2e}	The negative relationship between proactiveness and defender strategy	Not tested	The items of proactiveness are eliminated by factor analysis

H _{2f}	The negative relationship between risk-taking and prospector strategy	Not supported	There is a significant relationship in the opposite direction
H _{2g}	The positive relationship between risk-taking and defender strategy	Not supported	There is a significant relationship in the opposite direction
H _{2h}	Business strategy-firm performance	Partially Supported	Only prospector strategy affects the level of objective fulfillment compared to the reactor strategy. Prospector strategy is positively associated with the level of overall performance. Defender strategy is negatively associated with relative competitive performance
H _{3a}	Organic structure-EO	Supported	There is a significant relationship in the supposed direction.
H _{3b}	The moderating impact of the organizational structure on the EO-firm performance relationship	Not supported	Organizational structure hasn't any significant moderating influence on the EO-firm performance relationship.
H _{4aa}	Environmental dynamism-EO.	Supported	Environmental dynamism has a positively significant impact on the EO.
H _{4ab}	Environmental heterogeneity-EO	Not supported	There isn't any significant relationship between these variables.
H _{4ac}	Environmental hostility-EO	Not supported	Environmental hostility has a negative impact on the EO.
H _{4ba}	The moderating impact of the environmental dynamism on the EO-firm performance relationship	Not supported	Environmental dynamism hasn't any significant moderating influence on the EO-firm performance relationship.
H _{4bb}	The moderating impact of the environmental heterogeneity on the EO-firm performance relationship	Not supported	Environmental heterogeneity hasn't any significant moderating influence on the EO-firm performance relationship.

H _{4bc}	The moderating impact of the environmental hostility on the EO-firm performance relationship	Not supported	Environmental hostility has a negative moderating impact on the EO- relative competitive performance relationship.
H _{5a}	Firm resources-EO	Partially Supported	There is a positive relationship between EO and, firm resources/non-financial resources. But only non-financial resources have a positive impact on EO
H _{5b}	The moderating impact of the firm resources on the EO-firm performance relationship	Not supported	Firm resources haven't any significant moderating influence on the EO-firm performance relationship.
H _{6a}	Industry life cycle-EO	Not supported	Industry life cycle hasn't any significant impact on the EO.
H _{6b}	The moderating impact of the industry life cycle on the EO-firm performance relationship	Not supported	Industry life cycle hasn't any significant moderating influence on the EO-firm performance relationship.

CHAPTER VI

CONCLUSIONS, LIMITATION AND SUGGESTIONS FOR FUTURE RESEARCHES

6.1. Conclusions

This study has particularly focused on investigation the level of entrepreneurial orientation conducted in the Turkish manufacturing companies in Adana, and the potential impact of entrepreneurial orientation on the performance of firms. Furthermore, the research examines the direct influences of organizational structure, environmental uncertainty, firm resources, and industry life cycle on the degree of entrepreneurial orientation in the firms, and on the relationship between entrepreneurial orientation and firm performance. In addition to detect the impact of entrepreneurial orientation on the business strategy adopted by firms and the influence of business strategy on the firm performance.

Findings show moderate level of entrepreneurial orientation adopted by Turkish manufacturing companies in Adana. However, the entrepreneurial orientation has a positively significant impact on the overall performance and objective fulfillment but not on the relative competitive performance (including: growth in sales, profits, market share etc.). This results are consistent with the previous researches who confirmed the relationship between EO and firm performance (Rosenbusch, Rauch, & Bausch, 2013; Miller & Breton-Miller, 2011; Keh, Nguyen, & Ng, 2007; Poon, Ainuddin, & Junit, 2006; Jogaratnam & Tse, 2006; Wiklund & Shepherd, 2003), and with Wang and Altinay (2010) who argued that EO hadn't any significant impact on sales growth in ethnic minority small firms, and with Lisboa, Skarmas, and Saridakis (2016) who found that both innovativeness, and risk taking weren't correlated with profitability. The study shows that innovativeness is statistically significant predictor of the overall performance and the objective fulfillment, but risk taking is slightly associated with the overall performance and the objective fulfillment.

Moreover, the type of relationship between the entrepreneurial orientation and overall performance/objective fulfillment is a linear relationship and not curvilinear

relationship as approved with most previous studies. This result isn't consistent with what Tang et al. (2008) and Su et al. (2011) found, where Tang et al. (2008) approved inverted U-shape relationship between entrepreneurial orientation and firm performance in the Chinese context. Similarly, Su, Xie, and Li (2011) confirmed the same relationship between EO and performance in new ventures in China.

The results show that entrepreneurial firms are likely to engage in prospector and analyzer strategies. Furthermore, companies with prospector strategy achieve higher objective fulfillment compared with those firms with reactor strategy. This study confirms the results of Moreno and Casillas (2008) who approved the relationship between the entrepreneurial orientation of the firm and the type of strategy adopted, wherever, higher level of the firm's entrepreneurial orientation is associated with prospector strategy. Similar to the results of Lechner and Gudmundsson (2014), innovativeness is positively associated with prospector strategy and negatively associated with defender strategy, and prospectors achieved higher objective fulfillment relative to reactors, and are positively associated with overall performance. However, the result isn't consistent with Lechner and Gudmundsson (2014), where the risk taking is positively associated with prospector and analyzer strategy. Furthermore, the relative competitive performance is negatively related to defender strategy.

Organizational structure identify the degree of entrepreneurial orientation in manufacturing companies in Adana, where companies with organic structure achieve higher level of entrepreneurial orientation than companies with mechanistic structure. These results support what Khandwalla (1977), and Covin and Slevin (1991) proposed, whereas, entrepreneurial orientation is associated with the flexibility, low structural formalization, decentralization, and low complexity inherent in organic structures. However, Organizational structure isn't considered as a significant moderator in entrepreneurial orientation-firm performance relationship, which isn't consistent with what and what Lumpkin & Dess (1996) suggested.

Considering the impact of environmental uncertainty on the level of entrepreneurial orientation adopted by the manufacturing companies in Adana. In dynamic and benign environment, companies are more entrepreneurially oriented than those in stable and hostile environment. Whereas, innovativeness and risk taking are positively associated with

dynamic and benign environment. While, heterogeneous environment hasn't any significant impact on the level of entrepreneurial orientation, however, heterogeneous environment is positively associated with innovativeness in manufacturing companies in Adana. The study is partially consistent with the results of Miller (1983) who found that environmental heterogeneity, dynamism, and hostility were positively related to pioneering, innovation, and risk taking, and with the findings of Miller and Friesen (1982), who confirmed the positive relationship between both of environmental dynamism and heterogeneity, and entrepreneurial orientation of firms, in addition to Covin and Slevin (1991) who suggested the entrepreneurial orientation positively associated with environmental dynamism and hostility. Moreover, the environmental uncertainty represented in environmental dynamism, environmental heterogeneity, and environmental hostility haven't any moderating impact on the relationship between entrepreneurial orientation and objective fulfillment/ overall performance. However, environmental hostility negatively moderates the relationship between entrepreneurial orientation and relative competitive performance. The results partially support the results of Moreno & Casillas (2008) who found the environmental dynamism and hostility haven't any impact on EO-firm growth relationship. Furthermore, the results don't support Becherer and Maurer (1997) who failed to prove the moderating impact of environmental hostility on the relationship between entrepreneurial orientation and the firm's profits. Since, the study approves the inverse results when the negative moderating impact of environmental hostility on the EO-relative competitive performance relationship is detected which disagree with the results of Covin and Slevin (1989), and Casillas et al. (2010) who stated firms with high entrepreneurial position achieved a higher performance in hostile environment, while firms with low entrepreneurial position performed better in a more benign environment. Therefore, the manufacturing companies with higher level of entrepreneurial orientation in Adana have higher relative competitive performance in benign environment rather in hostile environment.

This study finds that entrepreneurial orientation is positively associated with firm resources, while manufacturing companies with plenty non-financial resources including technology, service, system, skill resources behave more entrepreneurially than those with scarce non-financial resources, while financial resources haven't any influence on

entrepreneurial orientation. The results are partially consistent with what Covin & Slevin (1991) proposed, where the entrepreneurial behavior of the firm relies partially on financial resources, plant and equipment, human resources, functional-level capabilities such as manufacturing flexibility, organizational capabilities as introducing new products to the market, and organizational system. Similarly, the firm resources haven't any impact on the relationship between entrepreneurial orientation and firm performance, which is consistent with the study of Moreno and Casillas (2008) who approved the availability of resources hadn't any moderating impact on the EO–firm growth linkage. However, findings don't support Lumpkin and Dess (1996) who suggested the positive influence of firm resources on the relationship between entrepreneurial orientation and firm performance.

In this study, industry life cycle hasn't any impact on the level of entrepreneurial orientation, and doesn't moderate the entrepreneurial orientation-firm performance relationship in the manufacturing companies in Adana, which isn't consistent with the proposition of Covin and Slevin (1991) who stated the entrepreneurial orientation level of the companies is commonly increased in their early life cycle stages of industry. Moreover, the industry life cycle stage has a moderating impact on the entrepreneurial orientation-firm performance relationship, whereas new ventures in emerging industries took more advantage from the adoption of entrepreneurial behavior than new ventures existed in later industry life cycle stages. However, the study shows the level of innovativeness of the companies is greater in the early stages of industry life cycle. Furthermore, the results can't support the Lumpkin and Dess (2001) who found that in early industry stages, firms have greater performance when they were proactively oriented, while in mature stages of industry, firms adopted competitively aggressive strategy achieved probably higher performance.

As part of efforts to study the potential effects of demographic information of the companies and respondents on the level of entrepreneurial orientation in the manufacturing companies in Adana. Firm age hasn't any influence on entrepreneurial orientation in the manufacturing companies, which aren't consistent with the results of Rauch et al. (2009), and Anderson and Eshima (2013) who found younger firms tend to be more entrepreneurial than those that are older. Similarly, firm size doesn't affect the level of entrepreneurial orientation in the manufacturing companies, as well as their performance. However, the

ownership type affects the level of the entrepreneurial orientation, where, family-owned firms behaved less entrepreneurially compared to the non-family owned firms, that supports Miller and Le Breton-Miller (2011) who found that firms owned or managed by family exhibited low level of entrepreneurial orientation relative to the other firms. Moreover, the type of industry hasn't any significant impact on the entrepreneurial orientation level, but there are significant difference in the overall performance between some industries, where the industry of basic metals has a higher overall performance than the textiles, printing and reproduction of recorded media, other non-metallic mineral products, fabricated metal products except machinery and equipment, furniture, and wearing apparel industries. In addition to the industry of machinery and equipment which outperforms the industry of printing and reproduction of recorded media.

Finally, this study finds that 7.3% of the variance of firm performance (objective fulfillment) in the manufacturing companies in Adana city accounted for entrepreneurial orientation. The level of entrepreneurial orientation encourages the firms to engage into prospector and analyzer strategies. Only prospectors have a higher objective fulfillment compared to reactors. Factors such as organizational structure, environmental uncertainty, and firm resources have impact on the level of entrepreneurial orientation in the manufacturing companies. Nonetheless, organizational structure, environmental dynamism, environmental heterogeneity, firm resources, and industry life cycle aren't considered as moderators in the relationship between entrepreneurial orientation and firm performance. While only environmental hostility has a negative moderating impact on EO-relative competitive performance relationship. The ownership type is important in identifying the level of entrepreneurial orientation in the manufacturing companies. Furthermore, firm size, firm age, gender, and industry had no influence on the entrepreneurial behavior of the manufacturing companies and on their performance.

6.2. Limitation

This study is conducted on the medium-sized manufacturing companies in Adana, Turkey. Consequently, the results is only limited to this area and can't be generalized to covered all sectors and cities in Turkey. Furthermore, there are a lot factors that may affect the EO-firm performance relationship not included in the study model because of the

difficulty of data collection, and the time shortage, which requires a lot of future researches to improve the model for better understanding to the EO-firm performance relationship.

6.3. Suggestions for Future Researches

Entrepreneurial orientation explained 7.3%, Business strategy 6.1%, while firm resources 29.6% of the variability of firm performance (objective fulfillment), which indicated there much factors had larger influence on the firm performance need to be discovered in the future researches. The study needs to be improved to include more cities and different sectors in Turkey. There are a lot of factors such as national, cultural, economic, political, and regulatory context, besides family involvement may have influence on the degree of entrepreneurial orientation adopted in the companies and on the entrepreneurial orientation-firm performance relationship need to be examined. Few studies addressed the EO construct as a profile construct, and firms with different profiles of EO's dimensions (innovativeness, proactiveness, and risk taking) may have various performance in different context such as environment and industry life cycle etc., or when they own specific organizational factors such as organizational structure, resources, strategy etc.. This argument requires further studies and large sample to examine the validity of such propositions.

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APPENDICES

APPENDIX I: QUESTIONNAIRE (TURKISH)



Sayın Yönetici,

Doktora çalışmalarım kapsamında “Girişimcilik Yönelimi ve İşletme Performansı: Bütünleştirici Bir Model Önerisi ve Amprik Bir Çalışma” konulu bir tez çalışması yapmaktayım. Çalışmamda, genel anlamda işletmelerin proaktiflik, yenilikçilik ve risk alma eğilimleri ile işletme performansı arasındaki ilişkileri araştırmaktayım. Bu kapsamda çalışmaya deneysel veri desteği sağlamak amacıyla geliştirdiğim anket formunda işletmenizin girişimcilik özellikleri, stratejisi, organizasyon yapısı, kaynakları, sektörü ve performansı konularında sorular yer almaktadır.

Bu anketi doldurarak çalışmaya destek sağlamanız umulmaktadır. **Anketi doldurarak çalışmaya katılmakta, sizin veya çalışanlarınız için herhangi bir risk bulunmamaktadır.** Sağlayacağınız bilgilerin analiz edilmesi sonucunda elde edilen genel akademik bulgular dışındaki veriler kesinlikle hiç kimseye açıklanmayacaktır. Verilerin güvenlik ve gizliliğini sağlamak için, anket formları araştırmacı tarafından güvenli bir ortamda beş yıl muhafaza edilecektir. Daha sonra tüm anket formları imha edilecektir. Ulaşılan genel sonuçlara, yalnızca yayın, sunum vb. eğitim materyallerinde yer verilecektir.

Çalışmayla ilgili **görüşlerinizi** ya da **etik kaygılarınızı**, doğrudan bana iletebileceğiniz gibi, doktora tez danışmanım Doç. Dr. Bahattin Karademir’e iletebilirsiniz.

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BÖLÜM I: GİRİŞİMCİLİK YÖNELİMİ

Ölçek, firmanızın yenilikçiliğini, proaktifliğini ve risk alma eğilimini ölçmek için tasarlanmıştır. Lütfen firmanızın durumunun en iyi temsil edeceği sayıyı daire içine alın. Bu sayılar sırasıyla (1) Sol sütundaki ifadeyi en iyi yansıtır; (2) Sol sütundaki ifadeyi oldukça yansıtır; (3) Sol sütundaki ifadeyi az yansıtır; (4) Tam arada bir durumu ifade eder; (5) Sağ sütundaki ifadeyi az yansıtır; (6) Sağ sütundaki ifadeyi oldukça yansıtır; (7) Sağ sütundaki ifadeyi en iyi yansıtır.

	Katılmıyorum	Katılıyorum
1- Genel olarak, şirketimin üst yönetimi şunlara öncelik verir: Üst yönetim, denenmiş ve başarılı olmuş ürün ve hizmetleri pazara sunmayı tercih etmiştir.	1 2 3 4 5 6 7	Üst yönetim, AR-GE faaliyetlerine, teknolojik liderliğe ve yenilikçiliğe önem vermeyi tercih etmiştir.
2-Firmanız son 5 yılda kaç yeni ürün veya hizmeti piyasaya sürmüştür?		
Piyasaya hiç yeni ürün/hizmet sürmemiştir	1 2 3 4 5 6 7	Piyasaya çok fazla yeni ürün/hizmet sürmüştür.
3- Ürün ve hizmetlerdeki değişiklikler daha çok ufak çaplı iyileştirmeler şeklinde olmuştur.	1 2 3 4 5 6 7	Ürün ve hizmetlerdeki değişiklikler genellikle dramatik, büyük çaplı değişimler şeklinde olmuştur.
4- Şirketimiz Rekabet Ortamında...		

Genel olarak rakipleri takip eder ve onların hamlelerine cevap verir.

1 2 3 4 5 6 7

5- Şirketimiz Rekabet Ortamında...

Çok nadir olarak, yeni ürün/hizmetlerin pazara sunulmasında, üretim teknolojilerinin ve idari/teknik yeniliklerin uygulanmasında öncü şirket rolünü üstlenir.

1 2 3 4 5 6 7

6- Şirketimiz Rekabet Ortamında...

Genel olarak; rekabetçi çatışmalardan kaçınmayı tercih etmektedir;“rakipler ile berab

1 2 3 4 5 6 7

7- Genel olarak üst yönetimin; düşük riskli (normal ve kesin geri dönüş oranına sahip) projelere güçlü bir yatkınlığı vardır.

1 2 3 4 5 6 7

8- Genel olarak üst yönetim, en iyi davranış biçiminin faaliyet gösterdiğimiz çevreyle de ilişkili olarak, küçük ve yavaş adımlarla ilerlemek olduğuna inanır.

1 2 3 4 5 6 7

9- Belirsizlik içeren durumlarda karar verilirken, firmamızda; Olası zararı en aza indirmek amacıyla, temkinli, “bekle ve gör” yaklaşımı uygulanır

1 2 3 4 5 6 7

Genel olarak rakiplerin daha sonra takip ettiği, yeni ve öncü uygulamaları başlatır.

Çok sık olarak, yeni ürün/hizmetlerin pazara sunulmasında, üretim teknolojilerinin ve idari/teknik yeniliklerin uygulanmasında öncü şirket rolünü üstlenir.

Genel olarak; çok rekabetçi bir tavır benimsemektedir, “rakipleri yok et” yaklaşımını uygulamaktadır. Genel olarak üst yönetimin, yüksek riskli (yüksek geri dönüş oranlarını yakalama şansı bulunan) projelere güçlü bir yatkınlığı vardır. Genel olarak üst yönetim, şirket hedeflerine ulaşmak için, faaliyet gösterdiğimiz çevreyle de ilişkili olarak, gözüpek ve uzun vadeli davranışların gerektiğine inanır.

Olası yüksek getiriye en üst düzeye çıkarmak amacıyla, cesur ve saldırgan bir tutum takınılır.

BÖLÜM II: İŞLETME STRATEJİSİ

Sektördeki diğer firmalarla kıyaslandığında, aşağıdaki tanımlamalardan hangisi firmanıza daha çok uymaktadır? (Lütfen firmanızı bir bütün olarak düşününüz ve aşağıda listelenen türlerden hiçbirinin doğası gereği "iyi" veya "kötü" olmadığına dikkat ediniz.)

- ☐ Bu tür bir firma, nispeten durağan bir ürün veya hizmet alanında güvenli bir pazar boşluğu bularak onu korumaya çalışır. Firma, rakiplerinden daha sınırlı ürün ya da hizmet çeşidi sunma eğilimindedir. Daha fazla kalite, üstün hizmet ya da düşük fiyat vb. sunarak pazarını korumaya çalışır. Genellikle bu tür bir firma, endüstrideki gelişmeleri yakından takip etmez. Mevcut faaliyet alanları üzerinde doğrudan etkisi olmayan endüstri değişikliklerini göz ardı etme eğilimi gösterir. Bunun yerine, sınırlı bir alanda mümkün olan en iyi işi yapmaya odaklanır.
- ☐ Bu tür bir firma, genellikle periyodik olarak yeniden tanımlanan geniş bir ürün-pazar alanında faaliyet gösterir. Firma yüksek kârlılık elde edemese de, yeni ürün ve pazar alanlarına **“ilk giren”** firma olmaya önem verir. Firma fırsat alanlarındaki erken sinyalleri değerlendirmek için hızlı hareket eder. Bu durum sıklıkla yeni rekabetçi faaliyetlere neden olur. Bununla birlikte, bu tür bir firma girdiği tüm alanlarda pazar gücünü koruyamayabilir.
- ☐ Bu tür bir firma, durağan ve sınırlı bir üretim veya hizmet hattını korumaya çalışırken, aynı zamanda da endüstrideki daha ümit verici yeni gelişmelerin özenle seçilmiş bir kısmını takip etmek için hızlı bir şekilde hareket eder. Firma, nadiren yeni ürün ve hizmetleri piyasaya ilk süren firma durumundadır. Bununla birlikte başlıca rakiplerinin kendisi durağan ürün-hizmet alanındaki faaliyetlerini yakından izleyerek, çoğu zaman daha uygun maliyetli ürün ve hizmetleri piyasaya **ikincisi** süren firma olur.
- ☐ Bu tür bir firmanın, tutarlı bir ürün-pazar yönelimi olmadığı görülmektedir. Firma, bazı rakipleri gibi mevcut ürün ve pazarlarını korumak için saldırgan davranmadığı gibi, diğer rakipleri kadar risk almak da istemez. Daha ziyade, çevresel baskılar nedeniyle zorunlu olduğu alanlarda tepki gösterir.

BÖLÜM III: ORGANİZASYON YAPISI

Genel olarak, firmamın yönetim felsefesi:

	Katılmıyorum	Katılıyorum
1- Önemli finansal ve operasyonel bilgilere oldukça sınırlı erişim imkânı veren yüksek derecede yapılandırılmış iletişim kanallarını tercih eder.	1 2 3 4 5 6 7	Önemli finansal ve operasyonel bilgilerin organizasyon içinde oldukça serbest bir şekilde dolaşmasını sağlayan açık iletişim kanallarını tercih eder.
2- Firmada standart bir yöneticilik tarzının uygulanmasında ısrar eder.	1 2 3 4 5 6 7	Yöneticilerinin yapma tarzlarının, oldukça formalden oldukça enforme ve çeşitlilik göstermesine olanak sağlar.
3- Karar alma sürecinde, söz hakkının en çok, hiyerarşik yetki düzenindeki yöneticilerde olmasına önem verir.	1 2 3 4 5 6 7	Karar alma sürecinde, hiyerarşik yetki düzenini devre dışı bırakmak anlamına gelse de söz hakkını her zaman konunun uzmanına verme eğilimi vardır.
4- İş koşullarında ne türde değişim olursa olsun daha önce denenmiş ve doğru yönetim ilkelerine sıkıya bağlı kalmaya önem verir	1 2 3 4 5 6 7	Geçmiş uygulamalar konusunda fazla kaygılanmadan değişen koşullara uyum sağlamaya büyük önem verir.
5- Çalışanların firmanın formal iş süreçlerine uygun hareket etmesine oldukça önem verilir.	1 2 3 4 5 6 7	İşlerin halledilmesine bu bazı iş süreçlerinin göz ardı edilmesi anlamına gelse de oldukça önem verilir.

- 6- Operasyonlar karmaşık kontrol ve enformasyon sistemleriyle sıkı bir şekilde kontrol edilirler. 1 2 3 4 5 6 7
- 7- Tüm çalışanların formal iş tanımlarına sıkıca bağlı kalmasına büyük önem verilir. 1 2 3 4 5 6 7

İşlerin yapılması büyük ölçüde enformel ilişkilere ve işbirliğine dayalıdır. Kontroller gevşek ve enformeldir. Çalışanların iş başında sergilemesi beklenen uygun davranışları içinde bulundukları koşulların gereklerinin ve çalışanın kişilik özelliklerinin belirlmesine yönelik güçlü bir eğilim vardır.

BÖLÜM IV: ÇEVRESEL BELİRSİZLİK

Firmanın faaliyet gösterdiği endüstrideki çevresel belirsizliği ile ilgili aşağıdaki ifadelere ne düzeyde katıldığınızı belirtmek için lütfen size uygun olan numarayı işaretleyiniz.

	Katılmıyorum	Katılıyorum
1- Endüstrimizdeki ürünler/hizmetlerin modası çok hızlı bir şekilde geçmektedir.	1 2 3 4 5 6 7	
2- Endüstrimizdeki ürün / hizmet teknolojileri çok hızlı değişmektedir.	1 2 3 4 5 6 7	
3- Rakiplerimizin bir sonraki adımında ne yapacağını öngörebiliriz.	1 2 3 4 5 6 7	
4- Ürünlerimize / hizmetlerimize yönelik talep değişimlerini öngörebiliyoruz.	1 2 3 4 5 6 7	
5- Faaliyet gösterdiğimiz sektörde, müşterilerin satın alma alışkanlıklarında önemli çeşitlilik vardır.	1 2 3 4 5 6 7	
6- Faaliyet gösterdiğimiz sektörde, rekabetin doğasında önemli çeşitlilik vardır.	1 2 3 4 5 6 7	
7- Faaliyet gösterdiğimiz sektörde, ürün gruplarında önemli çeşitlilik vardır.	1 2 3 4 5 6 7	
8- İşletmemizin sürekliliği işgücü arzının sınırlı olması nedeniyle tehdit altındadır.	1 2 3 4 5 6 7	
9- İşletmemizin sürekliliği üretimde tedarikin sınırlı olmasınedeniyle tehdit altındadır.	1 2 3 4 5 6 7	
10- İşletmemizin sürekliliği aşırı fiyat rekabeti nedeniyle tehdit altındadır.	1 2 3 4 5 6 7	
11- İşletmemizin sürekliliğiürün/hizmet kalitesindeki aşırı rekabet nedeniyle tehdit altındadır.	1 2 3 4 5 6 7	
12- İşletmemizin sürekliliği ürün/ hizmet farklılaşmasında yaşanan aşırı rekabet nedeniyle tehdit altındadır.	1 2 3 4 5 6 7	

BÖLÜM V: FİRMA KAYNAKLARI

Lütfen 7’li ölçek üzerinde aşağıda üzerinde aşağıda yer alan kategorilerdeki hangi kaynak ve yetkinliklerin firmanız için rekabet avantajı yada dezavantajı oluşturduğunu belirtiniz

	Büyük Dezavantajlar						Büyük Avantajlar
1- Sermayeye erişim (borç, sermaye vb.)	1	2	3	4	5	6	7
2- Bankacılar ve finansörler ile ilişkiler	1	2	3	4	5	6	7
3- Firmanın işletme sermayesinin yönetimi.	1	2	3	4	5	6	7
4- Yeni ürün geliştirme becerileri.	1	2	3	4	5	6	7
5- Önemli çalışanları elde tutma becerisi	1	2	3	4	5	6	7
6- Çalışanların verimliliği.	1	2	3	4	5	6	7
7- Yeni ürün geliştirme oranı.	1	2	3	4	5	6	7
8- Kendi teknolojisini geliştirme yeteneği	1	2	3	4	5	6	7
9- Kalite kontrol sistemi	1	2	3	4	5	6	7
10- Yönetim bilişim sistemleri	1	2	3	4	5	6	7
11- Müşteri hizmetlerinin itibarı	1	2	3	4	5	6	7
12- Müşterileri elde tutmağı yeteneği	1	2	3	4	5	6	7

BÖLÜM VI: SANAYİ YAŞAM DÖNGÜSÜ

Lütfen, firmanızın son üç yıldır sattığı ürün/hizmetlerin toplam sayısının aşağıdaki ürün yaşam eğrisi aşamaları arasındaki oransal dağılımını belirtiniz.

- 1- **Giriş aşaması:**Bu aşamadaki ürün ve hizmetlerin talep henüz yeni
canlanmaktadır. Söz konusu ürün ve hizmetler birçok potansiyel kullanıcı
için henüz yabancısıdır. _____%
- 2- **Büyüme aşaması:**Bu aşamadaki ürün ve hizmetlere yönelik talep yıllık
bazda reel olarak % 10 ve daha fazla oranda artmaktadır. Ürün ya
dahizmetin temel teknolojisi yada rekabet yapısı değişmeye devam
etmektedir. _____%
- 3- **Olgunluk aşaması:**Bu aşamadaki ürün ve hizmetler potansiyel
müşterilerin büyük bölümü için bilinir durumdadır. Üretim teknolojisi ve
rekabet yapısı oldukça istikrarlıdır. _____%
- 4- **Gerileme dönemi:** Ürünler tüketim malı gibi görülmektedir. Zayıf
rakipler sektörü terk etmektedir. _____%

100 %

BÖLÜM VII: FİRMA PERFORMANSI

- **Amaçları Yerine Getirme**

Lütfen son beş yılda aşağıdaki amaçlara ulaşma konusunda ne derecede başarılı olduğunuzu belirtiniz. Her bir soru için lütfen verilen ölçekte 1 ile 7 arasında bir sayıyı işaretleyiniz.

- 1- Uzun vadeli performansın iyileştirilmesi
- 2- Gelecekteki trendleri öngörme.
- 3- İlgili bilgilere dayanarak alternatiflerin değerlendirmesi
- 4- Sorunların önlenmesi
- 5- Sorunların çözülmesi
- 6- Yönetimuygulamalarının geliştirilmesi

(Çok başarılı değil)

(Çok başarılı)

1 2 3 4 5 6 7
 1 2 3 4 5 6 7
 1 2 3 4 5 6 7
 1 2 3 4 5 6 7
 1 2 3 4 5 6 7
 1 2 3 4 5 6 7

Göreceli Rekabetçi Performansı

Lütfen, aşağıdaki belirtilen dokuz faktöre göre, firmanızın son beş yıldaki performansını esas rakiplerinizin performansı ile karşılaştırın. Her bir faktör için değerlendirmenizi verilen ölçekte 1 ile 7 arasında bir sayıyı işaretleyiniz.

- 1- Satışlardaki artış
- 2- kar artışı
- 3- Pazar payı değişimi.
- 4- Genel olarak firma performansı ve başarı
- 5- Rekabetçi konumumuz

(Önemli derecede bozuldu)

1 2 3 4 5 6 7
1 2 3 4 5 6 7
1 2 3 4 5 6 7
1 2 3 4 5 6 7
1 2 3 4 5 6 7

(Önemli derecede gelişti)

BÖLÜM VIII: DEMOGRAFİK BİLGİLER

- 1) Firma kuruluş yılı:..... 2) Firmanın çalışan sayısı.....
- 3) Firmanın faaliyet gösterdiği sektör:
- 4) Firmanızı “aile işletmesi” olarak tanımlar mısınız? ☐ Evet ☐ Hayır
- 5) Ünvanınız: ☐ Kurucu ☐ Şirket Sahibi ☐ Yönetim Kurulu Başkanı ☐ Yönetim Kurulu Üyesi
- ☐ Üst Kademe Yönetici ☐ Orta Kademe Yönetici ☐ Diğer.....
- 6) Eğer yöneticisi olduğunuz departman varsa adını yazınız (örneğin, üretim, pazarlama, finansman vb.)
- 7) Eğitim durumunuz: ☐ İlköğretim ☐ Lise ☐ Üniversite ☐ Yüksek Lisans ☐ Doktora
- 8) Cinsiyetiniz: ☐ Erkek ☐ Kadın 9) Yaşınız:.....

APPENDIX II: QUESTIONNAIRE (ENGLISH)

SECTION I: ENTREPRENEURIAL ORIENTATION

Scale is designed to measure your firm's innovativeness, proactiveness and risk-taking. Each contains a 7-point scale and please circle the number that best represents your firm's status.

- | | | |
|--|------------------------------------|---|
| 1- In general, the top managers of my firm favor a strong emphasis on
The marketing of tried and true products and services. | Disagree Agree
1 2 3 4 5 6 7 | A strong emphasis on R&D, technological leadership, and innovations. |
| 2- How many new lines of products or services has your firm marketed in the past 5 years?
No new lines of products or services | Disagree Agree
1 2 3 4 5 6 7 | Very many new lines of products or services |
| 3- Changes in product or service lines
Have been mostly of a minor nature. | Disagree Agree
1 2 3 4 5 6 7 | Have usually been quite dramatic. |
| 4- In dealing with its competitors, my firm
Typically responds to actions which competitors initiate. | Disagree Agree
1 2 3 4 5 6 7 | Typically initiates actions which competitors then respond to. |
| 5- In dealing with its competitors, my firm
Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc. | Disagree Agree
1 2 3 4 5 6 7 | Is very often the first business to introduce New products/services, administrative techniques. |
| 6- In dealing with its competitors, my firm
Typically seeks to avoid competitive clashes, preferring a 'live-and-let-live' posture | Disagree Agree
1 2 3 4 5 6 7 | Typically adopts a very competitive, 'undo the competitors' posture |
| 7- In general, the top managers of my firm have | | |

A strong proclivity for low risk projects
(with normal and certain rates of return).

Disagree Agree
1 2 3 4 5 6 7

8- In general, the top managers of my firm believe that
Owing to the nature of the environment, it is
best to explore it gradually via timid,
incremental behavior

Disagree Agree
1 2 3 4 5 6 7

9- When confronted with decision-making situations involving uncertainty, my firm
Typically adopts a cautious, “wait-and-see”
posture in order to minimize the probability
of making costly decisions.

Disagree Agree
1 2 3 4 5 6 7

A strong proclivity for high-risk projects
(with chances of very high returns).

Owing to the nature of the of the
environment, bold wide-ranging acts are
necessary to achieve the firm’s objectives

Typically adopts a bold, aggressive
posture in order to maximize the
probability of exploiting potential.

SECTION II: BUSINESS STRATEGY

Which one of the following descriptions most closely fits your organization compared to other firms in the industry? (Please consider your division or company as a whole and note that none of the types listed below is inherently "good" or "bad.")

- ☐ This type of organization attempts to locate and maintain a secure niche in a relatively stable product or service area. The organization tends to offer a more limited range of products or services than its competitors, and it tries to protect its domain by offering higher quality, superior service, lower prices, and so forth. Often this type of organization is not at the forefront of developments in the industry — it tends to ignore industry changes that have no direct influence on current areas of operation and concentrates instead on doing the best job possible in a limited area.
- ☐ This type of organization typically operates within a broad product-market domain that undergoes periodic redefinition. The organization values being "first in" in new product and market areas even if not all of these efforts prove to be highly profitable. The organization responds rapidly to early signals concerning areas of opportunity, and these responses often lead to a new round of competitive actions. However, this type of organization may not maintain market strength in all of the areas it enters.
- ☐ This type of organization attempts to maintain a stable, limited line of products or services, while at the same time moving out quickly to follow a carefully selected set of the more promising new developments in the industry. The organization is seldom "first in" with new products or services. However, by carefully monitoring the actions of major competitors in areas compatible with its stable product-market base, the organization can frequently be "second in" with a more cost-efficient product or service.
- ☐ This type of organization does not appear to have a consistent product-market orientation. The organization is usually not as aggressive in maintaining established products and markets as some of its competitors, nor is it willing to take as many risks as other competitors. Rather, the organization responds in those areas where it is forced to by environmental pressures.

SECTION III: ORGANIZATIONAL STRUCTURE

In general, the operating management philosophy in my firm favors

- | | | |
|--|---------------|--|
| 1- Highly structured channels of communication and a highly restricted access to important financial and operating information | 1 2 3 4 5 6 7 | Open channels of communication with important financial and operating information flowing quite freely throughout the organization |
| 2- A strong insistence on a uniform managerial style throughout the firm | 1 2 3 4 5 6 7 | Managers' operating styles allowed to range freely from the very formal to the very informal |
| 3- A strong emphasis on giving the most to say in decision-making to formal line managers | 1 2 3 4 5 6 7 | A strong tendency to let the expert in a given situation have the most say in decision-making, even if this means temporary bypassing of formal line authority |
| 4- A strong emphasis on holding fast to tried and true management principles despite any changes in business conditions | 1 2 3 4 5 6 7 | A strong emphasis on holding fast to tried changing circumstances without too much concern for past practice |
| 5- A strong emphasis on always getting personnel to follow the formally laid down procedures | 1 2 3 4 5 6 7 | A strong emphasis on getting things done even if this means disregarding formal procedures |
| 6- Tight formal control of most operations by means of sophisticated control and information systems | 1 2 3 4 5 6 7 | Loose, informal control; heavy dependence on informal relationships and norm of cooperation for getting things done |
| 7- A strong emphasis on getting line and staff personnel to adhere closely to formal job descriptions | 1 2 3 4 5 6 7 | A strong tendency to let the requirements of the situation and the individual's personality define proper on-job behaviour |

SECTION IV: ENVIRONMENTAL UNCERTAINTY

Please mark the number to indicate the degree to which you agree or disagree with the following statements about environmental uncertainty in the organization's industry.

	Disagree	Agree
1- Products/services in our industry become obsolete very quickly	1 2 3 4 5 6 7	
2- The products/services technologies in our industry change very quickly	1 2 3 4 5 6 7	
3- We can predict what our competitors are going to do next	1 2 3 4 5 6 7	
4- We can predict what our products/services demand changes	1 2 3 4 5 6 7	
5- In our industry, there is considerable diversity in customer buying habits	1 2 3 4 5 6 7	
6- In our industry, there is considerable diversity in nature of competition	1 2 3 4 5 6 7	
7- In our industry, there is considerable diversity in product lines	1 2 3 4 5 6 7	
8- The survival of this organization is currently threatened by scarce supply of labor	1 2 3 4 5 6 7	
9- The survival of this organization is currently threatened by scarce supply of materials	1 2 3 4 5 6 7	
10- The survival of this organization is currently threatened by tough price competition	1 2 3 4 5 6 7	
11- The survival of this organization is currently threatened by tough competition in product/service quality	1 2 3 4 5 6 7	
12- The survival of this organization is currently threatened by tough competition in product/service differentiation	1 2 3 4 5 6 7	

SECTION V: FIRM RESOURCES

Please indicate on a scale of 1-7 the extent to which each of the following categories of resources and capabilities confers a competitive advantage or disadvantages on your firm in the marketplace

	Great Disadvantages							Great Advantages						
1- Access to capital (debt, equity, etc.)	1	2	3	4	5	6	7							
2- Relationship with bankers and financier	1	2	3	4	5	6	7							
3- Management of the firm's working capital	1	2	3	4	5	6	7							
4- Skills in the development of new products	1	2	3	4	5	6	7							
5- Ability to retain key employees	1	2	3	4	5	6	7							
6- The productivity of employees	1	2	3	4	5	6	7							
7- The rate of new product development	1	2	3	4	5	6	7							
8- Ability to develop proprietary technology	1	2	3	4	5	6	7							
9- Quality control system	1	2	3	4	5	6	7							
10- Management information systems	1	2	3	4	5	6	7							
11- Reputation for customer service	1	2	3	4	5	6	7							
12- Ability to retain customers	1	2	3	4	5	6	7							

SECTION VI: INDUSTRY LIFE CYCLE

Please describe the breakdown of the life cycle stages of products/services sold by business during the last three years in percentages using classification below.

- 1- **Introductory Stage:** primary demand for products/ services just starting to grow, products/ services still unfamiliar with many potential users. _____%
 - 2- **Growth Stage:** Demand growing at 10% or more annually in real terms; technology and/or competitive structure still changing. _____%
 - 3- **Maturing Stage:** Products or services familiar to vast majority of prospective users; technology and competitive structure reasonably stable. _____%
 - 4- **Decline Stage:** Products viewed as commodities, weaker competitors beginning to exit. _____%
- 100 %**

SECTION VII: FIRM PERFORMANCE

- **Objective Fulfillment**

Please indicate the extent to which you have been successful in the achieving of the following objectives in the last five years. For each question please circle one number between 1 and 7 in the scale provided.

	Not all Successful				Very Successful		
1- Improvement in long-term performance	1	2	3	4	5	6	7
2- Predicting future trends	1	2	3	4	5	6	7
3- Evaluating alternative based on relevant information	1	2	3	4	5	6	7
4- Avoiding problem areas	1	2	3	4	5	6	7
5- Resolving problems	1	2	3	4	5	6	7
6- Enhancing management development	1	2	3	4	5	6	7

- **Relative Competitive Performance**

Please compare the performance of your organization in the last five years with that of your main competitors based on the following nine factors. For each factor please indicate your assessment by circle one number between 1 and 7 in the scale provided.

	Has Deteriorated Significantly	Has Improved Significantly
1- Sales Growth	1 2 3 4 5 6 7	1 2 3 4 5 6 7
2- Growth in profit	1 2 3 4 5 6 7	1 2 3 4 5 6 7
3- Market share change	1 2 3 4 5 6 7	1 2 3 4 5 6 7
4- Overall firm performance and success	1 2 3 4 5 6 7	1 2 3 4 5 6 7
5- Our competitive position	1 2 3 4 5 6 7	1 2 3 4 5 6 7

SECTION VIII: DEMOGRAPHIC INFORMATION

- 1- Foundation Year:..... 2- Employees number:.....
- 3- Sector:.....
- 4- Do you consider the company as a "family business"? ☐ Yes ☐ No
- 5- Your title is....
- ☐ Founder ☐ Owner ☐ Chairman of the board of directors ☐ Member of the board of directors ☐ Top-level manager
- ☐ Middle-level manager ☐ Other.....
- 6- Please write the name of department you manage, (e.g, production, marketing, finance etc.).....
- 7- Your Education level:
- ☐ Primary school ☐ Secondary school ☐ University ☐ Master Degree ☐ Ph.D Degree
- 8- Your gender is: ☐ Male ☐ Female
- 9- Your age is:

APPENDIX III: ENTREPRENEURIAL ORIENTATION SCALE

Sub-dimension	No	Question	Yes
Innovativeness	1	In general, the top managers of my firm favor a strong emphasis on The marketing of tried and true products and services.	A strong emphasis on R&D, technological leadership, and innovations
	2	How many new lines of products or services has your firm marketed in the past 5 years?.	Very many new lines of products or services
	3	No new lines of products or services	Changes in product or service lines
		Have been mostly of a minor nature	Have usually been quite dramatic
Proactiveness	4	In dealing with its competitors, my firm Typically responds to actions which competitors initiate	Typically initiates actions which competitors then respond to
	5	In dealing with its competitors, my firm Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	Is very often the first business to introduce New products/services, administrative techniques,
	6	In dealing with its competitors, my firm Typically seeks to avoid competitive clashes, preferring a 'live-and-let-live' posture.	Typically adopts a very competitive, 'undo the competitors' posture.

Risk Taking

-
- | | | |
|---|--|--|
| 7 | In general, the top managers of my firm have | |
| | A strong proclivity for low risk projects (with normal and certain rates of return). | A strong proclivity for high-risk projects (with chances of very high returns). |
| 8 | In general, the top managers of my firm believe that | |
| | Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior. | Owing to the nature of the environment, bold wide-ranging acts are necessary to achieve the firm's objectives. |
| 9 | When confronted with decision-making situations involving uncertainty, my firm | |
| | Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions. | Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential. |
-

APPENDIX IV: ORGANIZATIONAL STRUCTURE

NO	Sub-dimension	Paragraph
1	Defender	This type of organization attempts to locate and maintain a secure niche in a relatively stable product or service area. The organization tends to offer a more limited range of products or services than its competitors, and it tries to protect its domain by offering higher quality, superior service, lower prices, and so forth. Often this type of organization is not at the forefront of developments in the industry — it tends to ignore industry changes that have no direct influence on current areas of operation and concentrates instead on doing the best job possible in a limited area.
2	Prospector	This type of organization typically operates within a broad product-market domain that undergoes periodic redefinition. The organization values being "first in" in new product and market areas even if not all of these efforts prove to be highly profitable. The organization responds rapidly to early signals concerning areas of opportunity, and these responses often lead to a new round of competitive actions. However, this type of organization may not maintain market strength in all of the areas it enters.
3	Analyzer	This type of organization attempts to maintain a stable, limited line of products or services, while at the same time moving out quickly to follow a carefully selected set of the more promising new developments in the industry. The organization is seldom "first in" with new products or services. However, by carefully monitoring the actions of major competitors in areas compatible with its stable product-market base, the organization can frequently be "second in" with a more cost-efficient product or service.
4	Reactor	This type of organization does not appear to have a consistent product-market orientation. The organization is usually not as aggressive in maintaining established products and markets as some of its competitors, nor is it willing to take as many risks as other competitors. Rather, the organization responds in those areas where it is forced to by environmental pressures.

APPENDIX V: ORGANIZATIONAL STRUCTURE

NO	Question
In general, the operating management philosophy in my firm favors	
1	Highly structured channels of communication and a highly restricted access to important financial and operating information.
2	A strong insistence on a uniform managerial style throughout the firm.
3	A strong emphasis on giving the most to say in decision-making to formal line managers.
4	A strong emphasis on holding fast to tried and true management principles despite any changes in business conditions.
5	A strong emphasis on always getting personnel to follow the formally laid down procedures.
6	Tight formal control of most operations by means of sophisticated control and information systems.
7	A strong emphasis on getting line and staff personnel to adhere closely to formal job descriptions.

APPENDIX VI: INDUSTRY LIFE CYCLE

Sub-dimension	NO	Questions
Introductory Stage	1	Primary demand for products/ services just starting to grow, products/ services still unfamiliar with many potential users.
Growth Stage	2	Demand growing at 10% or more annually in real terms; technology and/or competitive structure still changing.
Maturing Stage	3	Products or services familiar to vast majority of prospective users; technology and competitive structure reasonably stable.
Decline Stage	4	Products viewed as commodities, weaker competitors beginning to exit.

APPENDIX VII: ENVIRONMENTAL UNCERTAINTY

Sub-dimension	NO	Question
Environmental Dynamism	1	Products/services in our industry become obsolete very quickly
	2	The products/services technologies in our industry change very quickly
	3	We can predict what our competitors are going to do next (R)
	4	We can predict what our products/services demand changes (R)
Environmental Heterogeneity	5	In our industry, there is considerable diversity in customer buying habits
	6	In our industry, there is considerable diversity in nature of competition
	7	In our industry, there is considerable diversity in product lines
Environmental Hostility	8	The survival of this organization is currently threatened by scarce supply of labor
	9	The survival of this organization is currently threatened by scarce supply of materials
	10	The survival of this organization is currently threatened by tough price competition
	11	The survival of this organization is currently threatened by tough competition in product/service quality
	12	The survival of this organization is currently threatened by tough competition in product/service differentiation

APPENDIX VIII: FIRM RESOURCES

Sub-dimension	NO	Questions
Financial resources	1	Access to capital (debt, equity, etc.)
	2	Relationship with bankers and financier
	3	Management of the firm's working capital
Technology resources	4	Skills in the development of new products
	7	The rate of new product development
	8	Ability to develop proprietary technology
Skills resources	5	Ability to retain key employees
	6	The productivity of employees
System resources	9	Quality control system
	10	Management information systems
Service resources	11	Reputation for customer service
	12	Ability to retain customers

APPENDIX IX: FIRM PERFORMANCE

Sub-dimension	NO	Questions
Objective Fulfillment	1	Improvement in long-term performance
	2	Predicting future trends
	3	Evaluating alternative based on relevant information
	4	Avoiding problem areas
	5	Resolving problems
	6	Enhancing management development
Relative Competitive Performance	1	Sales Growth
	2	Growth in profit
	3	Market share change
	4	Overall firm performance and success
	5	Our competitive position

APPENDIX X: MEANS AND STANDARD DEVIATIONS OF VARIABLES AND THE CORRELATION COEFFICIENT VALUES AMONG VARIABLES

	M	SD	1	2	3	4	4 _a	4 _b	5 _a	5 _b	5 _c	5 _d	6	7	8 _a	8 _b	8 _c	9	9 _a	9 _b	10	10 _a	
1.Firm Age	1.2134	0.37362																					
2.Firm Size	2.0071	0.19812	-0.019																				
3. Ownership Type (Family Vs, Non-family)	0.7656	0.42527	0.127	-0.119																			
4.EO	4.2079	1.19191	-0.055	0.066	-.259**																		
4 _a Innovation	4.8281	1.69231	0.018	0.021	-.182*	.715**																	
4 _b Risk Taking	3.7944	1.41928	-0.091	0.075	-.217*	.831**	.206*																
5 _a Prospector Strategy	0.4609	0.50043	-0.043	-0.109	-0.080	.317**	.238**	.254**															
5 _b Analyzer Strategy	0.3672	0.48393	0.024	0.173	0.001	0.008	-0.033	0.037	-.704**														
5 _c Defender Strategy	0.1250	0.33202	0.021	-0.112	0.098	-.297**	-.235**	-.229**	-.350**	-.288**													
5 _d Reactor Strategy	0.0469	0.21220	0.013	0.037	0.035	-.300**	-0.120	-.325**	-.205*	-0.169	-0.084												
6.Organizational Structure	3.9855	1.06329	0.084	0.041	-.217*	.261**	0.167	.233**	-0.085	0.104	0.018	-0.067											
7.Industry Life Cycle	2.5127	0.35418	0.089	0.113	-0.036	-0.075	-.253**	0.093	-0.040	0.054	-0.017	-0.003	-0.020										
8 _a Environmental Dynamism	4.0430	1.65419	-0.049	-0.001	-0.002	.182*	.214*	0.085	0.090	0.069	-.211*	-0.039	0.142	-0.081									
8 _b Environmental Heterogeneity	5.1831	1.50377	0.033	-0.007	0.013	0.133	.211*	0.018	0.159	-0.099	-0.009	-0.134	0.057	-0.116	.336**								
8 _c Environmental Hostility	3.2219	1.48531	-0.029	0.085	.223*	-.282**	-.200*	-.236**	-0.126	0.035	0.042	0.152	0.026	0.094	.278**	0.118							
9.Firm Resources	5.6128	0.80064	-0.064	0.021	-.215*	.238**	.276**	0.114	0.126	-0.006	-0.028	-.240**	0.014	-.224*	.193*	.191*	-.279**						
9 _a Financial Resources	5.4570	1.35016	0.059	-0.038	0.010	-0.009	-0.104	0.071	0.024	0.115	-0.058	-.227*	-0.112	0.064	0.107	.179*	-0.073	.543**					
9 _b Non-Financial Resources	5.6439	0.84512	-0.092	0.036	-.247**	.273**	.347**	0.107	0.136	-0.044	-0.013	-.200*	0.052	-.274**	.186*	0.160	-.294**	.963**	.298**				
10.Overall Performance	5.6776	0.68578	-0.064	0.052	-0.152	.268**	.213*	.206*	.238**	-0.107	-0.125	-0.123	0.069	-0.051	.217*	0.047	-.200*	.528**	.179*	.543**			
10 _a Objective Fulfillment	5.7591	0.88088	-0.085	0.053	-0.169	.287**	.285**	.175*	.224*	-0.139	-0.013	-.192*	0.083	-0.110	.180*	0.108	-.209*	.616**	.188*	.640**	.858**		
10 _b Relative Competitive Performance	5.5960	0.76449	-0.017	0.032	-0.078	0.150	0.054	0.168	0.170	-0.032	-.209*	0.001	0.028	0.038	.183*	-0.041	-0.119	.237**	0.105	.236**	.806**	.387**	

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). c. Cannot be computed because at least one of the variables is constant.

**APPENDIX XI: DIFFERENTIATION OF OVERALL PERFORMANCE LEVEL
ACCORDING TO BUSINESS STRATEGY: MULTIPLE COMPARISONS TEST OF
GAMES-HOWELLS**

(I) Industry	(J) Industry	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Division 24	Division 10	.66744	.20186	.172	-.1498	1.4847
	Division 11	.78667	.19361	.274	-.9271	2.5004
	Division 13	.91167*	.21566	.032	.0508	1.7726
	Division 14	.84292*	.19074	.042	.0236	1.6623
	Division 17	.70432	.21140	.220	-.2584	1.6670
	Division 18	1.23667*	.12686	.006	.4986	1.9748
	Division 20	.60611	.27452	.681	-.7097	1.9219
	Division 22	.98222	.31819	.228	-.2758	2.2402
	Division 23	1.06667*	.22824	.021	.1202	2.0131
	Division 25	1.03754*	.20855	.006	.2206	1.8545
	Division 27	1.14500	.45832	.659	-11.6676	13.9576
	Division 28	.64179	.17280	.106	-.0861	1.3697
	Division 29	.91167	.55533	.854	-16.3944	18.2177
	Division 30	1.03111	.41635	.610	-2.8240	4.8863
	Division 31	1.15125*	.24123	.027	.1063	2.1962
Division 28	Division 10	.02564	.20160	1.000	-.7471	.7984
	Division 11	.14487	.19333	.999	-1.4690	1.7588
	Division 13	.26987	.21541	.994	-.5546	1.0944
	Division 14	.20112	.19046	.999	-.5637	.9659
	Division 17	.06252	.21114	1.000	-.8580	.9831
	Division 18	.59487*	.12644	.020	.0707	1.1191

Division 20	-.03568	.27433	1.000	-1.3314	1.2600
Division 22	.34043	.31802	.999	-.9061	1.5869
Division 23	.42487	.22801	.859	-.4901	1.3398
Division 24	-.64179	.17280	.106	-1.3697	.0861
Division 25	.39575	.20829	.856	-.3815	1.1730
Division 27	.50321	.45820	.965	-12.3068	13.3132
Division 29	.26987	.55523	1.000	-17.0435	17.5832
Division 30	.38932	.41622	.994	-3.4579	4.2365
Division 31	.50946	.24101	.732	-.5079	1.5269

Dependent Variable: Overall Performance

**APPENDIX XII: DIFFERENTIATION OF OVERALL PERFORMANCE LEVEL
ACCORDING TO BUSINESS STRATEGY: MULTIPLE COMPARISONS TEST OF
GAMES-HOWELLS**

(I) STRATEGY	(J) STRATEGY	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Cluster 9	Cluster 1	1.13889*	.31538	.016	.1102	2.1676
	Cluster 2	.99167	.30901	.059	-.0162	1.9996
	Cluster 3	.41667	.40247	1.000	-.8961	1.7294
	Cluster 4	.71667	.36235	.820	-.4652	1.8985
	Cluster 5	.58333	.30624	.868	-.4155	1.5822
	Cluster 6	.70833	.34548	.766	-.4185	1.8352
	Cluster 7	.53788	.35325	.990	-.6143	1.6901
	Cluster 8	.41667	.31907	.999	-.6240	1.4574

Dependent Variable: Objective Fulfillment

**APPENDIX XIII: THE EXTANT LITERATURE OF ENTREPRENEURIAL ORIENTATION
STUDIES ADDRESSED EO AS INDEPENDENT, MODERATOR, MEDIATOR, AND DEPENDENT
VARIABLES**

EO as Independent Variable	Morris & Paul (1987)	Miles, Arnold, & Thompson (1993)	Smart & Conant (1994)	Lumpkin & Dess (1996)
	Morris & Sexton (1996)	Mueller & Thomas (2000)	Slater & Narver (2000)	Lumpkin & Dess (2001)
	Tan (2001)	Jantunen, Puumalainen, Saarenketo, & Kyläheiko (2005)	Wiklund & Shepherd (2005)	Covin, Green, & Slevin (2006)
	Mostafa, Wheeler, & Jones (2006)	Walter, Auer, & Ritter (2006)	Avlonitis & Salavou (2007)	De Clercq & Rius (2007)
	Keh, Nguyen, & Ng (2007)	Naldi, Nordqvist, Sjöberg, & Wiklund (2007)	Moreno & Casillas (2008)	Runyan, Droge, & Swinney (2008)
	Stam & Elfring (2008)	Tang, Tang, Marino, Zhang, & Li (2008)	Wang (2008)	Anderson, Covin, & Slevin (2009)
	Baker & Sinkula (2009)	Pearce II, Fritz, & Davis (2009)	Renko, Carsrud, & Brännback (2009)	Zhao, Li, Lee, & Chen (2009)
	Casillas, Moreno, & Barbero (2010)	De Clercq, Dimov, & Thongpapanl (2010)	Chirico, Sirmon, Sciascia, & Mazzola (2011)	Javalgi & Todd (2011)
	Kreiser (2011)	Messersmith & Wales (2011)	Pérez-Luño, Wiklund, & Cabrera (2011)	Su, Xie, & Li (2011)
	Arend (2014)	Boso, Cadogan, & Story (2012)	Dada, & Watson (2012)	Kollmann, & Stöckmann (2012)

Alegre & Chiva (2013)	Anderson., & Eshima (2013)	Brettel & Rottenberger (2013)	Kreiser, Marino, Kuratko, & Weaver (2013).
Wales, Patel, Parida, & Kreiser (2013)	Wolfe & Shepherd (2013)	Yu, Dong, Shen, Khalifa, & Hao (2013)	Brouthers , Nakos, & Dimitratos (2014)
Lechner & Gudmundsson (2014)	Saeed, Yousafzai, & Engelen (2014)	Schepers, Voordeckers, Steijvers, & Laveren (2014)	Wincent, Thorgren, & Anokhin (2014)
Patel, Kohtamäki, Parida, & Wincent (2014)	Engelen, Gupta, Strenger, & Brettel (2015)	Felzensztein, Ciravegna, Robson, & Amorós (2015)	Gupta & Gupta (2015)
Morgan, Anokhin, Kretinin, & Frishammar (2015)	Mousa, Wales, & Harper (2015)	Su, Xie, & Wang (2015)	Wales, Wiklund, & McKelvie (2015)
Cadogan, Boso, Story, & Adeola (2016).	Dada & Fogg (2016)	Deligianni, Dimitratos, Petrou, & Aharoni (2016)	Gupta & Batra (2016)
Hakala, Siren, & Wincent (2016)	Hernández-Perlines (2016)	Hernández-Perlines, Moreno-García, & Yañez-Araque (2016)	Ho, Plewa, & Lu (2016)
Martin & Javalgi (2016).	Lisboa, Skarmas, & Saridakis (2016)	Lomberg, Urbig, Stöckmann, Marino, & Dickson (2016)	Mickiewicz, Sauka, & Stephan (2016)
Núñez-Pomar, Prado-Gascó, Sanz, Hervás, & Moreno (2016).	Reijonen, Tammi & Saastamoinen (2016)	Semrau, Ambos, & Kraus (2016)	Shan, Song, & Jua (2016)
Stenholm, Pukkinen, & Heinonen (2016)	Vega-Vázquez, Cossío-Silva, & Revilla-Camacho (2016)	Wang, & Juan (2016)	Andersén (2017)

	DiVito & Bohnsack (2017)	Keil, Maula, & Syrigos (2017)	Linton & Kask (2017)	Li, Jiang, Pei, & Jiang (2017)
	Palmer, Niem&, Stöckmann, Kraus, & Kailer (2017)	Thanos , Dimitratos, & Sapouna (2017)	Wang, Thornhill, & Castro (2017)	Arzubiaga, Kotlar, De Massis, Maseda, & Iturralde (2018).
	Bouncken , Ratzmann, Pesch, & Laudien (2018)		Jiang, Liu, Fey, & Jiang (2018)	
EO As Moderator	Richard, Barnett, Dwyer & Chadwick (2004)	Bhuian, Menguc, & Bell (2005)	Li, Zhao, Tan, & Liu (2008)	Wales, Parida, & Patel (2013).
	Revilla, Pérez-Luño, & Nieto (2016)		Moser, Tumasjan, & Welp (2017)	
EO As Mediators	Lee & Peterson (2000)	Wiklund, & Shepherd (2003)	Poon June M. L., Ainuddin Raja Azimah, & Junit Sa'Odah Haji (2006)	Wang & Altinay (2010)
	Liu, Li, & Xue (2011)	Miller, & Breton-Miller (2011)	Lumpkin, Moss, Gras Kato & Amezcua (2013).	Rosenbusch, Rauch, & Bausch (2013)
	Anderson, Kreiser, Kuratko, Hornsby, & Eshima (2015)		Miao, Coombs, Qian, & Sirmon (2017)	
EO as Dependent Variable	Luo, Zhou, & Liu (2005)	Kuivalainen, Sundqvist, & Servais (2007)	Green , Covin, & Slevin (2008).	Short, Payne, Brigham, Lumpkin, & Broberg (2009)
	Kreiser, Marino, Dickson, & Weaver (2010)	Simsek, Heavey,& Veiga (2010)	Cruz & Nordqvist (2012)	Sciascia, Mazzola, & Chirico, (2012)
	Zellweger & Sieger (2012)	De Clercq , Dimov, & Thongpapanl (2013)	Dai, Maksimov, Gilbert, & Fernhaber (2014).	Engelen, Flatten, Thalmann, & Brettel (2014)
	Wincent, Thorgren, & Anokhin (2014)	Brettel, Chomik, & Flatten (2015)	Boling, Pieper, & Covin (2016)	Cao, Simsek, & Jansen (2015)

EO in Several Positions (Independent/Moderator/Mediator Dependent)	De Clercq , Dimov, & Thongpapanl (2015)	Eshima & Anderson (2017)	Madanoglu, Altinay, & Wang (2015).	Grühn, Strese, Flatten, Jaeger, & Brettel (2016)
	Bauweraerts & Colot (2017)	Deb & Wiklund (2017)	García-Villaverde, Rodrigo-Alarcón, Parra-Requena, & Ruiz-Ortega (2018).	
	Ibeh (2003)	Ripollés-Meliá, Menguzzato-Boulard, & Sánchez-Peinado (2007).	Wales , Gupta , & Mousa (2011)	Tang & Hull (2012)
	Boso, Story, & Cadogan (2013).	Altinay, Madanoglu, Vita, Arasli, & Ekinci (2016)	Swoboda & Olejnik (2016)	

CURRICULUM VITAE

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EDUCATION BACKGROUND

2013-2018	Doctorate of Business Administration (Ph.D) Çukurova University, Adana, Turkey
2009-2012	Master of Business Administration (MBA) Islamic University Of Gaza-Palestine
2001-2006	Bachelor of Electrical Engineering (Communication and Control systems) Islamic University Of Gaza-Palestine

EXPERIENCE

2015-2017	Export Area Manager at Netral Elektrik company, Adana, Turkey.
2006-2012	“Computer and Network” Engineer at Modern Tech Corporation, Gaza, Palestine.

RESEARCHES

2012	The Quality of Working Life and Its Effect on The Job Performance of Employees in The Non Governmental Organization In Gaza Strip
2009	Wireless Control Of Robotic System

HONORS AND AWARDS

2012	Ph.D Scholarship Award in Business Administration from Presidency for Turks Abroad and Related Communities (YTB)
2009	Winning The First Place In “PCTI Business Plan Contest 2008/2009”