

MEASURING EFFICIENCY OF AUTOMOTIVE PARTS SUPPLIERS FROM  
ENTREPRENEURIAL ORIENTATION BY USING DATA ENVELOPMENT  
ANALYSIS

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A thesis submitted in fulfilment of the  
requirements for the award of the degree of  
Doctor of Philosophy (Management)

Faculty of Management  
Universiti Teknologi Malaysia

MARCH 2015

*To Mahdi, the promised savior of mankind and his rightful successor...*

## ACKNOWLEDGEMENT

It is only by the strength and love of God that I have been blessed with this opportunity to obtain my doctoral degree. I just thank God for all of the blessing. Peace be upon our prophet, the teacher of all mankind.

I would like to express my sincere appreciation and special thanks to my supervisor, Assoc. Prof. Dr Saudah Sofian, for her encouragement, guidance and patient supervision. I would also like to thank my co-supervisors Prof. Dr. Abu Bakar Abdul Hamid and Prof. Dr. Mostafa Kazemi, who supported me in all levels of my study.

I would also like to thank the Universiti Teknologi Malaysia (UTM) for providing me with all the requirements and needs of a research student.

At last but not least, my special gratitude is extended to my parents and my wife's parents, who deserve my gratitude for their inseparable prayer, encouragement and endless patience. Words fail me in expressing my deepest appreciation to my wife, whose dedication, love and support gave me confidence. My thesis would not have been possible without her patience and encouragement. I owe so much to my beloved daughter, Najmeh, who has got over homesickness and encouraged my heart.

## ABSTRACT

Entrepreneurship indices should be considered for measuring efficiency in parallel with rapid growth in manufacturing technology industry. However, in Iran, automotive industries lack entrepreneurship and effective methods for measuring efficiency. To address the problem, the study has three main aims: firstly, to examine the relationship between enabler factors of entrepreneurial orientation and entrepreneurial orientation of automotive parts suppliers, secondly, to rank and identify inefficient suppliers through measuring efficiency from an entrepreneurial orientation perspective, and finally, to find ways to improve inefficient suppliers. This study applied both quantitative and qualitative approaches. In the quantitative phase, 422 out of 510 sets of questionnaire focusing on enabler factors of entrepreneurial orientation and entrepreneurial orientation were collected from middle and lower managers as well as technicians of 51 Iranian automotive parts supplier firms. SPSS was used to statistically analyze data and data envelopment analysis method was applied specifically to measure efficiency. The results revealed that two (structure and policy) out of six enabler factors of entrepreneurial orientation, were not significant predictors of entrepreneurial orientation. Scores of efficiency indicated that 16 of these firms were inefficient from an entrepreneurial orientation viewpoint. The data envelopment analysis not only showed the inefficient suppliers but also revealed quantitative suggestions. Besides that, qualitative data collection based on open-ended questionnaires to seek the opinions of nine industry and entrepreneurship experts were carried out. Based on the findings, it is suggested that attention be drawn to the components of entrepreneurial orientation, namely innovation, risk-taking, pro-activeness, autonomy, competitive and aggressiveness. They have roles with various degrees of importance in entrepreneurship and consequently in the improvement of efficiency score of inefficient suppliers. Recommendations based on data envelopment analysis and experts' opinions to improve the efficiency of the inefficient firms have been made in the study by suggesting ways to eliminate inefficiency due to lack of entrepreneurial orientation among suppliers.

## ABSTRAK

Indeks keusahawanan perlu dipertimbangkan dalam mengukur kecekapan selari dengan pertumbuhan pesat industri teknologi pembuatan. Namun begitu, di Iran, industri automotif di Iran mengalami kekurangan keusahawanan dan kaedah yang berkesan dalam mengukur kecekapan. Bagi menangani masalah ini, terdapat tiga matlamat utama kajian: pertama, untuk mengkaji hubungan antara faktor pemboleh orientasi keusahawanan dengan orientasi keusahawanan pembekal alat ganti automotif; kedua, untuk menyusun kedudukan dan mengenal pasti pembekal yang tidak cekap dengan mengukur kecekapan dari perspektif orientasi keusahawanan, dan akhirnya untuk mencari cara bagi memperbaiki pembekal yang tidak cekap. Kajian ini menggunakan pendekatan kuantitatif dan kualitatif. Dalam fasa kuantitatif, 422 daripada 510 set soal selidik yang memberi fokus kepada faktor pemboleh orientasi keusahawanan dan orientasi keusahawanan telah dikumpul daripada pengurus pertengahan dan rendah termasuk juruteknik daripada 51 firma pembekal alat ganti automotif Iran. Perisian SPSS digunakan dalam menganalisis data statistik dan kaedah analisis pengumpulan data digunakan khususnya untuk mengukur kecekapan. Hasil kajian menunjukkan bahawa dua (struktur dan dasar) daripada enam faktor pemboleh orientasi keusahawanan, bukan merupakan peramal orientasi keusahawanan yang signifikan. Skor kecekapan menunjukkan 16 daripada firma tersebut tidak cekap jika dilihat dari sudut pandang orientasi keusahawanan. Analisis pengumpulan data bukan sahaja menunjukkan ketidakcekapan para pembekal tetapi juga memperlihatkan cadangan berbentuk kuantitatif. Di samping itu, pengumpulan data kualitatif berdasarkan soal selidik dengan pertanyaan terbuka digunakan untuk mendapatkan pandangan daripada sembilan industri dan pakar keusahawanan telah dijalankan. Berdasarkan hasil kajian, adalah dicadangkan agar perhatian diberikan kepada komponen orientasi keusahawanan, iaitu inovasi, pengambilan risiko, keproaktifan, autonomi, daya saing dan keagresifan. Komponen tersebut mempunyai peranan dalam pelbagai darjah kepentingan keusahawanan dan mengakibatkan peningkatan skor kecekapan pembekal yang tidak cekap. Cadangan berdasarkan analisis pengumpulan data dan pandangan para pakar untuk meningkatkan kecekapan firma yang tidak cekap telah dijalankan dalam kajian ini dengan mencadangkan cara melenyapkan ketidakcekapan ekoran daripada kekurangan orientasi keusahawanan dalam kalangan pembekal.

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**LIST OF ABBREVIATIONS**

PMS	-	Performance measurement systems
DEA	-	Data Envelopment Analysis
DMUs	-	Decision making units
CE	-	Corporate Entrepreneurship
EO	-	Entrepreneurial orientation
IKCO	-	Iran Khodro Company
CRM	-	Customer Relationship Management
SRM	-	Supplier Relationship Management
FMEA	-	Failure Mode and Effects Analysis
AHP	-	Analysis Hierarchical Processes

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background**

Over the past several years, entrepreneurship has been widely used by scholars and practitioners as an efficient means of revitalizing companies and enhancing their performance (Zahra and Covin, 1995). Developed and developing countries have paid a serious attention to entrepreneurship since late 1970s and late 1980s respectively (Ruef and Lounsbury, 2007). In the Islamic Republic of Iran, entrepreneurship has been taken into consideration by both politicians and scholars over the last three decades. The first inclination in this area started from the third development plan of the country (Moghimi, 2007). However, the unemployment problem has become worse in the last decade leading the government to focus on entrepreneurship development (Rasem and Hassan, 2011). In the country's fourth and fifth plans, Iran has increased the development of entrepreneurship in all aspects and tried to develop entrepreneurial policies throughout the country due to its likely significant impact on efficiency and productivity (Mazdeh *et al.*, 2012).

Having recognized the need to implement entrepreneurship orientation (EO), all Iranian organizations have developed strategic plans for product entrepreneurship and production process entrepreneurship (Dehghan and Haghghi, 2008). This need has arisen in response to a number of pressing problems including a rapidly growing number of new and sophisticated competitors, presence of a sense of distrust regarding the traditional methods of corporate management, missing skillful human resource at

managerial levels who are leaving corporations to become small-business entrepreneurs, international competition, downsizing of major corporations, and an overall desire to improve efficiency and productivity (Merrifield, 1993 and Kuratko, 1993).

Based on the aforementioned discussion, one of the reasons highlighting the necessity of practicing entrepreneurship in organization is “an overall desire to improve efficiency and productivity”. Therefore, there is call for incorporating the entrepreneurial orientation to boost efficiency in organizations and industries like automotive industry.

### **1.1.1 Automotive industry: Current State in Iran**

Automotive industry called as "industry of industries" (Peter Drucker, 1946) is still regarded as one of the important and fundamental industries in the world (Nag et al., 2007). It deals with designing, developing, manufacturing, marketing, and selling the world's motor vehicles. This industry is characterized by certain factors such as competitiveness, the requirements of customer, etc. Furthermore, automobile industry creates many job opportunities. According to Forouzan and Mirassadallahi (2009), the automobile industry makes a significant contribution in everyone's life. Over the last fifty years, this industry has changed the human's view on how to manufacture and produce artifacts (Reed *et al.*, 2004). These changes have led to innovations in work style, life style and even thinking style. The main product of this industry has increasingly attracted the attention of people and governments due to the various roles played by this product in society, such as facilitation of relation in vital activities within the society (Forouzan *et al.*, 2009). The importance of this industry has been emphasized as owning an automobile has turned to be the criteria in measuring and assessing the degree of development in the world.

According to annual report of “Organisation Internationale des Constructeurs d’Automobiles” (OICA) in 2012, Iran is the sixteenth largest automaker in the world

and the biggest among Middle East countries. According to Iran's "Twenty-Year Vision Document, the objectives of the automotive industry are: (1) To gain the market share of value added of the automotive industry at least 2.6% of GDP; (2) To gain the market share of value added of the automotive industry at least 19% of the total value of the industry; (3) To preserve at least 80% of the total units of the automotive market share; (4) To gain the export share of 40% of Rial volume of the sold automobiles by concentrating on global markets; (5) To gain the share of at least 3.5 % of the total units of global automobile manufacturing. Iran's automotive sector dates back to more than 45 years ago, and is the second most active industry after its oil and gas industry. According to Forouzan *et al.* (2009) the production of automobile is around 50,500,000 units a year and engages approximately 100,000,000 workers, in the world.

According to Rahmati and Yousefi (2011), the automobile market in Iran is supplied by two major automotive companies named I.K. Co. (Iran Khodro Company) and Saipa as the two major automakers in Iranian automotive market. The other companies are relatively small producers and importers. These two companies are considered as the two largest companies with more than 95% of the total market share, however their products are often viewed as low quality products (Arumugam and Mojtahedzadeh, 2011). Therefore, the Iranian automotive industry should take into consideration competitive strategies like entrepreneurial orientation for its survival in the competitive market (Abrishamkar *et al.*, 2011; Khaksar *et al.*, 2011). Considering the fact that taking advantage of entrepreneurial indicators facilitates the path of IKCO and Saipa-Yadak toward enhancing the EO, the companies should provide suitable grounds to promote plans for entrepreneurial orientation utilizing all required facilities. In fact, the unity of automotive industry coming from commitment of IKCO and Saipa-Yadak is an issue of high importance in carrying out the factors of EO (Forozanfar *et al.*, 2011).

According to Abedini and Peridy (2009), there are many advantages in Iranian Automobile Industry. The capacity in this industry is very high, and it has easy access to Middle East market due to Iran's geographical position. Despite these advantages, this industry has not achieved an appropriate status, and the products of Iran's

automakers have not been widely exported yet. According to Arumugam and Mojtahedzadeh (2011), the gap between production and export can be explained by several reasons such as the lack of competition in domestic market, lacking in product design, suffering from the lack of team working, low quality of suppliers, lack of strong and capable leaders, lack of customer focus, lack of training, lack of performance, high protection levels and weak international marketing programs as well as quality culture. In addition, there are other related problems such as the lack of adequate innovation or proactiveness and change in demand creating the need for recruiting properly trained staff, which have not been dealt with properly due to the automotive industries' limited capacity to respond and react to these changing global and nationalized priorities (Arumugam and Mojtahedzadeh, 2011).

On the other hand, as cited by Morris and Kuratko (2002), global economy is creating substantial changes for industries and organizations such as automotive industry throughout the world. Automotive industry like other organizations is prone to changes and evolutions. Therefore, there is a call for adopting new strategies with which companies can be revitalized in competitive environment (Zahra and Covin, 1995). EO is an appropriate response to these concerns in Iran (Mazdeh *et al.*, 2012). Additionally, regarding the fact that EO is a strategy used for gaining competitive advantage (Dehghan and Haghghi, 2008), its implementation in companies applying such strategy should be measured (Shepherd and Günter, 2006). Thus, there is a call for controlling and assessing EO as it is considered as a key success factor (Kuratko *et al.*, 1993).

Need for practicing EO can also be highlighted considering the fact that automotive industry is a big supplier in economy of Iran, in fact this industry should move toward entrepreneurial orientation so that it can learn how to manage it more effectively and efficiently. However, It would not be achieved unless appropriate tools and instruments are employed in order to measure performance of suppliers (Beamon, 1996; Shah and Singh, 2001). So far, many scholarly activities have been carried out in terms of performance and efficiency as the key factors contributing to automotive

industry. However, the difference between efficiency and performance has not been taken into account practically by researchers (Prokopenko and North, 1996).

Performance measurement systems (PMSs) as a stage of controlling and also a Performance measurement (PM) tool have been increasingly gaining significance in business, through which any potential issue resulting in improvement of the business can be detected. (Kittelsson and Associates, 2003). According to Beamon (1999), and Shah and Singh (2001), the improvement of a proper PM tool is absolutely essential since it helps the business to operate effectively. Furthermore, other authors have emphasized that a PMS plays a significant role in controlling performance, improving incentive, enhancing communications and detecting issues (Beamon, 1996; Brewer, 2000; Holmberg, 2000; Lau, 2001; Morash, 2001; Bullinger, 2002; Bullinger, 2002; Tan, 2002; Otto, 2003; Gunasekaran, 2004). Neely *et al.* (1995) has also explained PM as a process of evaluating both the efficiency and the effectiveness of events.

The new performance evaluation systems are contingent upon new expansion of performance indices (Holmberg, 2000). Many criticisms to traditional performance evaluation are comprehensively focusing on financial indices (Atkinson *et al.*, 1997). In order to achieve organizational integration, companies and organizations are exploring ways such as quality management, sustainability of the business, attention to customer, research development and innovation in continuous evaluation of performance. Traditional indices have been incomplete in offering general definitions that are not suitable for new environments of business and competitive affairs (Laats *et al.*, 2011). Based on the Iran Khodro Company's rule, the outmoded methods and indicators for performance measurement are being replaced by competitive methods and indicators.

Considering the involvement of organizations in upstream and downstream stages of supply chain has turned the organizations and their supply chain into a single entity, as they can have a mutual contribution to their customers and internal operation of the company, which are known as two drivers of business strategy (Hugos, 2008). In this regard, scholars believe that each strategy should be measured after

implementation. In addition, referring to the fact that EO is a strategy for gaining competitive advantage (Dehghan and Haghghi, 2008), implementation of EO should be measured (Shepherd and Günter, 2006). In fact, it should be investigated if there is an alignment between EO as the strategy and management and suppliers as one of the components of automotive company. Therefore, there is a call for control and assessment of EO as the vital success factor of companies (Kuratko *et al.*, 1993).

As a result, this study is not only focusing on seeking ways of improving the efficiency in Iranian automotive parts suppliers, but also is shedding new insight in measuring efficiency since it has applied the EO approach as a new indicator instead of some financial indicators.

## **1.2 Research Problem**

The necessity of pursuing EO in an organization (like Iranian automotive industry) has resulted from a diversity of pressing issues comprising: scientific changes, innovations, and developments in the market, observed weakness in the traditional approaches of corporate management, repeated downsizing of businesses seeking more efficiency, the loss of entrepreneurial-minded personnel who are disenchanted with bureaucratic corporations, and increasing ranks of global competition (Merrifield, 1993; Kuratko and Hodgetts, 1998; Morris and Kuratko, 2002).

It can be noted that EO has been accepted as a potentially viable methods for promoting and supporting corporate competitiveness and innovation in Iranian automotive industry, due to the fact that Lumpkin and Dess (1996) noted that EO can be employed to develop competitive positioning and renovate companies, marketplaces and industries. Efficiency's position of automotive industry in Iran is prone to many challenges, issues and threats.

Lastly, the patterns across various global areas concerning how entrepreneurial firms generate, foster, and deploy new value creation occasions is of particular and special interest (Kickul *et al.*, 2011). While studies on entrepreneurship have significantly grown during the past decades, studies on the intersection between entrepreneurship and operations management (like measuring efficiency) are scarce (Goodale *et al.*, 2011; Kickul *et al.*, 2011). The concept of entrepreneurship is new especially for practitioners and also in developing countries like Iran. As mentioned before, entrepreneurship has been ignored by academic organizations and industrial organizations like automotive industries (Mazdeh *et al.*, 2012). Whereas, automotive market is a competitive market which encompasses a lots of markets and also effects on a lot of industries and resources. Low market share has arisen from missing market opportunities and lack of aggressiveness. Speaking on this matter, despite quick changes in innovations in products and services in global automotive industry, Iran is suffering from lag in innovativeness in product and designs policies (Arumugam and Mojtahedzadeh, 2011). Further, in developing countries (like Iran), despite of allocating many subsidies and supports by government, producers are not committed to government for doing R&D activities, as drivers of innovativeness and risk taking, since there are some weakness of the control policy in this industry (Fuangkajonsak, 2006). As a result, the producers feel there is no competitive environment and there is no motivation for achieving to competitive advantages. This condition, undoubtedly, leads to not only unsustainability in entrepreneurial orientation (since innovation, risk taking, proactiveness, autonomy and competitive aggressiveness are dimensions of EO (Lumpkin and Dess (2005)) but also inefficiency.

Cultivating from the above, this study was prompted to investigate three interesting issues:

1. Measuring the degree of EO.
2. Investigation of the relationship between behavioral and organizational factors and EO.
3. Measuring efficiency of suppliers from the viewpoint of EO.

### **1.2.1 Issue 1: Measuring Degree of EO**

One of the things that is really important for government is to make sure that the environment is such that the entrepreneurial spirit remains strong (Bush, 2005). Sustainable entrepreneurship is needed to explore and assess entrepreneurial actions and strategies as a mechanism for making existing business practices more sustainable while providing economic and non-economic gains for investors, entrepreneurs, and communities. In other words, based on Morris and Kuratko (2002), sustainable entrepreneurship requires that managers are involved in ongoing efforts at assessment. The entire concept of assessment revolves around the measurement of processes and outputs. The necessity of measuring the level of EO can be explained by referring to contribution of automotive company management in business strategy considering the organization as a single entity and emergence of the concept of strategic management (Hugos, 2008). Additionally, the author pointed out that firms can achieve competitive advantage as long as their company is in alignment with their strategies in doing business. In fact, the company performs, based on the type of strategy. EO, as conceptualized by Lumpkin and Dess (1996, 2005), has five dimensions. As a result, EO should be monitored from the viewpoint of its five dimensions.

It can be seen that there is a relation between management and strategy (Hugos, 2008). Among different strategies adopted by firms, entrepreneurship can be considered as one of the strategies whose alignment with organization (or suppliers) can be considered in order to gain competitive advantage (Covin and Miles, 1999). Investigation on how EO strategy works can provide the firms with the information on the efficiency suppliers.

Improving EO in current organizations and creating appropriate base for their development is a tool for economic development of countries, especially developing countries (Rodriguez and Martí 2006). Increasing importance of EO as a driver of strategy leading to success and competitive advantage of firms in supplier's industry needs for research to be done on measuring their level of EO (Davis, 2006). The author noted that the necessity of investigating on applying degree of EO as a way of



measuring the efficiency of supplier firms can be shown by referring to the fact that there is a gap in area of measuring the full performance of the whole automotive company network's attributes of collaboration, integration, cohesion and ability. As a means of achieving the unified business objectives leading to continuous improvement which has created a challenging issue.

From the other standpoint, creating and maintaining a long-term work relationship leading to developing relation with fewer reliable suppliers is essential. Thus, choosing the best supplier is beyond considering the price, which encompasses a lot of quantitative and qualitative indicators (Ho *et al.*, 2010). It is related to the fact that selecting and measuring the suppliers is one of the important concerns in automotive company management since making the wrong choice of supplier leads to loss of company performance and financial position, and conversely a good choice of suppliers leads to lower supply cost, competitive advantage and customer satisfaction (Liu *et al.*, 2000; Hugos, 2008). The potentiality of EO's being used as a means of performance measurement can be highlighted by referring to the fact that, at the beginning of the 80s, with the sudden development in the industry field and competitive world, the importance of entrepreneurial processes have been considered in big companies more than ever (Stevenson *et al.*, 1985). Today, organizations are facing rapid technological change, complex competition, fast-growing number of new competitors, a sense of distrust in management of traditional methods, a large of the best company's employees leaving, an international competition, corporate downsizing and an overall desire to increase efficiency and productivity. So, today, a lot of companies are recognizing the requirement for EO and corporate entrepreneuring (Kuratko, 2009). It means that the key performance indicators for choosing the best performers are getting change and moving toward EO.

Speaking to this matter, making a comparison with earlier decades shows that changes, innovations, and development are now more widespread in the marketplace. Companies and organizations are trying to become entrepreneurs in order to be flexible to change and retain opportunities in market. As a result, under these conditions, companies have to be innovator, otherwise they become outmoded (Abrishamkar *et*

*al.*, 2011; Khaksar *et al.*, 2011; Kuratko, 2009). In every organization, there are potential entrepreneurs seeking to improve their abilities. Therefore, advocating and fostering entrepreneurship and creating a platform is one of the real sources of competitiveness for all organizations (Edmiston, 2007; Moosakhani *et al.*, 2011). Additionally, in case organizations are prepared with productive knowledge and also productive entrepreneurial skill, they can move forward and accelerate on the development path. Therefore, by using these abilities, other resource of organizations and society can be led to create value and achieve growth and development (Rodriguez and Mart í 2006).

Thus, it can be stated that EO is one of the strategic approaches to achieve success (Antoncic and Hisrich, 2004) for suppliers. Yet, the implementation of EO is becoming a vital action for organizations (Zahra, 1996). Successful EO is related to each factor in organization. Defining measurement criteria of EO and tools of entrepreneurship strategic management is one of the most important subjects of dispute in industry and organization because of the many factors involved in efficiency (Davis, 2006). The current state of Iranian automotive industry, as mentioned before, is not in acceptable from viewpoint of manufacturing and export. Hence, Iran has adopted plans of supremacy, named “fifth plan of development” and “2025 vision plan”, which have emphasized promotion of domestic production, especially in strategic products and services and also increased efficiency in economic activity, improvement of economic competitiveness. In fact, the existent lack of entrepreneurship in Iran led to emphasis on learning entrepreneurship as a key objective of the presented plan of development. Entrepreneurship should be touted in all subjects, “mentioned in 2025 vision plan of Iran”. In addition, as Iran is under sanction, lack of entrepreneurship leads to unsuccessful wealth creation in country, as a result hazy future for industries and economy. Therefore, Iranian automotive industry will encounter more problem if could not pave the way for acting and thinking entrepreneurially. Simply viewed, large industries and organizations like automotive industries need to provide for entrepreneurial behavior within, to cope with the challenges and changes their internal and external environment brings (Allens, 2009).

Entrepreneurship in existing firms takes on many forms and occurs throughout the organization, therefore companies can differ significantly how entrepreneurial they are (Covin et al., 2008). Many scholars (e.g. Davis (2006) and Hornsby *et al.*, (2002)) recommended that EO performs as a strategy and the effectiveness of the key internal organizational factors and the climate influencing innovative activities and behaviors should be measured. Therefore, the adoption of comprehensive and multidimensional instrument for assessing EO is a significant help to measure degree of EO of automotive parts supplier firms.

### **1.2.2 Issue 2: Investigation of the Relationship between Behavioral and Organizational Factors and EO**

This issue deals with investigation of any significant relationship between organizational factors (including: structure, policy, HR, and strategy) and behavioural factors (including: culture and leadership) as independent variables and EO in automotive parts suppliers. This issue is raised since there is need on understanding the encouraging factors with which EO can be developed or enhanced in firms (Dhliwayo, 2010). This issue can also be considered with regard to contribution of these factors in achieving entrepreneurship point of view in suppliers as a part of the automotive company. Because the major players in automotive supplier industry in Iran are suffering from inefficiency (Alizadeh and Hakimian (2013); Arumugam and Mojtahedzadeh (2011)), therefore, investigation on encouraging factors of EO leading to development of EO can be viewed as a way of eliminating the inefficiency among automotive parts supplier (Arumugam and Mojtahedzadeh, 2011).

Turker and Selcuk (2009) pointed out that there are many factors fostering the entrepreneurship which are appeared in organization. Organizational behavior is a function of structural and contextual factors. The structural and contextual factors should be managed to make entrepreneurial organizational behavior since the organization can achieve its developmental goals through an entrepreneurial approach.

Antonic and Hisrich (2001) suggested a model in which the environmental and the organizational factors fostered entrepreneurship which, in turn, increased organizational performance. Peterson and Berger (1972) published the results of their groundbreaking research on identifying the organizational and environmental factors influencing on the entrepreneurial actions taken by companies. Miller's study in 1983 also made a significant contribution to the field. He sets out some powerful arguments which were used by other researchers. In fact, researchers have used Miller's theory and research instruments to examine the linkages between environmental, organizational, and behavioral factors and variables, and a company's entrepreneurial activities (Zahra *et al.*, 1999). Considering the new perspective drawn by the above researchers, a new conceptualization of EO in Iranian suppliers is suggested in which the organizational and behavioral factors make a significant contribution in developing the necessary context for EO. As antecedents of EO are not same for each organization, automotive industry in Iran should investigate drivers of EO. In other words, each of these antecedents or any combination of them may considered the prerequisite an important forepart for EO efforts. Because, they affect the internal environment of the organization in which inclination to entrepreneurial activities are determined and supported.

Based on the above, this study found it very important to investigate the impact of organizational and behavioral factors on EO among automotive parts supplier.

### **1.2.3 Issue 3: Measuring Efficiency of Suppliers by Using DEA from the Perspective of Entrepreneurial Orientation**

The last issue of the study highlighted the importance of drawing attention to the antecedents of EO. In fact, determining the antecedents (or prerequisites) of EO in automotive parts suppliers leads to pave the ways for boosting and strengthening EO efforts. Therefore, boosting EO should be taken as a strategy for suppliers and this strategy should be assessed in order to monitoring efficiency of suppliers, otherwise making the wrong choice of supplier leads to loss of company performance and

financial position, and as a result higher supply cost, lag in competitiveness and customer satisfaction (Liu *et al.*, 2000; Hugos, 2008).

Rising significance of international competitive market has lead performance measurement to become a key research field in industry and academic world. Measuring performance is connected to practices of business, which makes it possible for companies to be successful in their initiatives (Brewer and Speh, 2000). In the realm of measuring performance and efficiency, two major questions must be addressed. First, what indexes (or criterion) should be applied and second, what methods can be utilized to compare (or evaluate) suppliers (Amindoust *et al.*, 2012). The recent researches which are using an index approach to evaluate business performance are widespread (Ip, 2011; Faisal, 2007; Simatupang, 2005).

Light (1998) in supporting a wider range of performance measures to achieve alignment with strategy stated that intangibles such as “management performance, quality of strategy, customer satisfaction and employee retention” must be addressed. He argued, along with Dangayach and Deshmukh (2001), that measurement, monitoring and control of these aspects helps to “pinpoint problems, improve processes and achieve company goals”.

In addition, in order to define the level of efficiency in the organizations, and level of the mentioned criteria, an efficient method should be applied. In this regard, Data Envelopment Analysis (DEA) as an efficient mathematical model which is based on linear programming, efficiency of a set of decision making units (DMUs) is evaluated based on the indexes of input and output, as compared with each other, to determine the efficient and inefficient units (Charnes *et al.*, 1978; Cooper *et al.*, 2007). Based on Li *et al.* (2014), choosing the most proper inputs and outputs is of vital importance when conducting all DEA researches, but so far, there is no generally agreed technique for the selection. Various DEA studies have applied different inputs and outputs (Premachandra *et al.*, 2009). Inputs and outputs should be meaningful in the framework of the competitive environment (Oral and Yolalan, 1990). Applying

DEA by new inputs and outputs (CE approach) leads to new approach to efficiency and meaningful related to competitive environment.

According to Cooper *et al.* (2007), DEA divides all units into two groups: efficient and inefficient. A unit is efficient if its efficiency score equals to 1. Inefficient units can be ranked if they gain efficiency score. Finally, inefficient and weak organizations should be promoted and improved. For this purpose, a road map and pattern of successful organizations are needed. Therefore, identifying and helping the inefficient automotive parts suppliers to improve their efficiency were deemed necessary through the obtained suggestion from DEA and recommendations of experts and consultants in Iranian automotive industry.

### **1.3 Research Questions**

Considering the concerns raised in the problem statement, hence, the research questions recognized in this study are:

RQ1: What is the degree of entrepreneurial orientation among automotive parts supplier firms?

RQ2: To what extent can the EO-enabler factors be significant predictors of EO in automotive parts supplier firms?

RQ3: To what extent is the efficiency of the automotive parts supplier firms from the perspective of EO by using DEA method?

RQ4: Which supplier are performance models of each inefficient automotive parts supplier firms from EO point of view?

RQ5: What are the ways to improve inefficient automotive parts supplier firms?

#### **1.4 Purpose of Study**

The aim of this study is threefold: first, to examine the relationship between enabler factors of EO (EO-enablers) and EO in automotive parts suppliers, second, to rank the suppliers through measuring efficiency from EO and identifying the inefficient suppliers by Data Envelopment Analysis (DEA). And finally, to find the ways which can improve the efficiency of inefficient suppliers.

#### **1.5 Objectives of Study**

This study focused on the following research objectives:

1. To identify the degree entrepreneurial orientation among automotive parts suppliers.
2. To investigate the extent of the relationship between EO-enabler factors and EO in automotive parts suppliers.
3. To evaluate the efficiency of automotive parts supplier firms from EO by using DEA method.
4. To determine the inefficient automotive parts supplier firms and identify relevant peers for each supplier that can serve as performance models of each supplier.
5. To suggest the method to improve the efficiency of inefficient automotive parts suppliers from EO.

## **1.6 Scope of Study**

The scope of this study is twofold: knowledge and location scope. Knowledge scope of this study is limited to measuring efficiency of Iranian automotive parts suppliers from EO by using DEA. The location scope of this study is limited to the investigated suppliers in Iran. The sample of this study was all automotive parts suppliers that were subordinates and under direct contract of Iran Khodro (IKCO) which were located in Khorasan province. All mentioned suppliers are classified into large size company since they had more than 200 personnel. To find the extent to which each of the EO-enabler factors is related with EO, a set of questionnaire were distributed among 510 middle managers, lower managers and technicians of selected automotive parts supplier firms in Khorasan. Nine experts in entrepreneurship and those who are experts in automotive field were interviewed through open ended questionnaire to provide supportive and clarifying suggestions regarding how EO can be improved (or how automotive parts suppliers' efficiency can be improved).

## **1.7 Significance of Study**

Enhancement of the performance is one of the challenging issues to organizations in public, private and governmental sectors. Active organizations in private sectors need to develop entrepreneurship and adopt an entrepreneurial approach for several reasons. The following are the most important ones: continuous intensification of competition in the market and need for innovative activities, fast environmental changes, fast advancement of technology, efficacious forces, pressures of lowering the costs, existence of high potentialities and quick paces to take advantage of opportunities (Kraatz and Zajac, 2001; Morris and Kuratko, 2002a; Twomey and Harris, 2000).

The result of this study can also be important since it is an attempt in identifying the non-financial indicators capable of being used in measurement of success of different parts of automotive company including the suppliers. It is hoped



that the findings of this study provide more insight in the way automotive companies and organizations are viewed as a single entity. Indeed, it will provide more insight on a strategic approach toward automotive companies.

Due to the attention paid by the Iranian economy players to the automotive industry and the rapid growth of this area in Iran, existence of domestic competitions, possibility of foreign competition emergence to maintain a competitive position in the market and attract loyal customers, it seems necessary to conduct performance measurement for selection and promotion of suppliers by competitive indices, with which the weaknesses will be identified and eliminated (Hemati *et al.*, 2010).

In the view of Dhliwayo (2010), companies and organizations are trying to become entrepreneurs in order to be flexible to change and retain opportunities in market. Confirmation of the relationship between EO-enabler factors and EO is another significance of this study. EO occurs in entrepreneurial organizations provided that improving the prerequisites of EO with which organizations progress toward entrepreneurial practicing. Therefore, recognition of these prerequisites enables organizations to modify behaviours in acting more entrepreneurial strategic orientation and better performance. In addition, the findings of this study are important in evaluating the efficiency of suppliers from the perspective of EO. Further, the results allow the managers to distinguish and recognize the entrepreneurial weaknesses in suppliers.

Considering the fact that today, organizations are considered as a single entity, they can have a mutual contribution to customers and internal operation of the company, known as two drivers of business strategy (Hugos, 2008). An effective automotive company management and high performance of its subordinate part such as suppliers requires considering both customers and internal efficiency of the organization to make the automotive companies and suppliers in alignment with such business strategy (like CE).

The most important significance of this study is not only to identify the inefficient firms through DEA but also to provide suggestions how inefficient firms can be improved. The findings highlighted that how EO constructs can be improved to the extent suggested by DEA. This stage of the present study can be considered a contribution to research community since this study contributes to the literature by offering a rather novel, qualitative, case-based approach to screening EO and the processes and contributory factors that cause to boost it.

## 1.8 Definition of Terms

The following are the operational definitions of all terms which were used in this study.

- i. Entrepreneurship: Nasution *et al.* (2011) define that entrepreneurship is a process of creating wealth through innovation and taking advantage of opportunities that requires venturing, autonomy and proactiveness. In addition, Hornaday (1992) states that the basis of entrepreneurship is innovation and economic value creation that leads to more profit in the market.
- ii. Entrepreneurial Orientation (EO): EO is a strategic construct whose conceptual domain includes certain firm-level outcomes and management-related preferences, beliefs, and behaviors as expressed among a firm's top-level managers. As originally proposed by Lumpkin and Dess (1996, 2005), EO is revealed through an organization's exhibition of risk taking, innovativeness, and proactiveness, autonomy, and competitive aggressiveness.
- iii. Organizational factors: Include the aspects related to physical and non-human components and the organization's conditions that are bounded together via particular order, with which the structure is ruled and established. In fact, organizational factors include non-alive factors of the organization (Sarlak *et al.*, 2009; Sarlak and Mirzaei, 2005).

Organizational factors comprises: Politics (Dhliwayo, 2010; Tushman and Nadler, 1997), organizational structure (Covin, 1991; Dess, 1999; Naman, 1993; Dhliwayo, 2010 ; Tushman, 1997; Randall, 1986; Dess, 1997), organizational strategy (Dhliwayo, 2010; Karimi *et al.*, 2011), and human resource (Bishop *et al.*, 2005; Dhliwayo, 2010; Karimi *et al.*, 2011; Schuler, 1986).

- iv. Behavioral factors: The organization's behavioral factors indicating human's conduct and behavior in the organization conjoined together by specific patterns, informal interactions and behavioral norms , with which the organization's main content are established are considered as the organization's alive factors (Sarlak *et al.*, 2009; Sarlak and Mirzaei, 2005). Behavioral factors comprises: culture (Burgelman, 1983; Hornsby, 2002; Wong, 2005; Johnson, 2002; McGrath, 2000; Dhliwayo, 2010; Bishop, 2005; Hornsby, 2002), and leadership (Dhliwayo, 2010; Hill, 2003; Karimi *et al.*, 2011).
- v. Efficiency: Efficiency refer to inputs, i.e. actual source consumption over expected source consumption (Prokopenko and North, 1996).
- vi. Data Envelopment Analysis (DEA): DEA is an efficient mathematical model which is based on linear programming. Through DEA, efficiency of a set of decision making units is evaluated based on the indexes of input and output, as compared with each other, to determine the efficient and inefficient units (Cooper *et al.*, 2007).

## 1.9 Organization of the Thesis

This chapter (Chapter 1) is the foremost chapter of the three chapters of this proposal. It presents the overview of the study background, statement of the research problem, research questions, research objectives that are stated in consonant with the research questions, the significance and limitations of study. Chapter 2 presents the review of the related literature of the construct as well as research findings done by previous researchers. In other words, second chapter describes entrepreneurship, EO,

EO-enablers factors, measuring intensity of EO, efficiency and various models of efficiency. DEA as a mathematical method for measuring efficiency is introduced. Previously conducted studies on DEA applications are investigated. In accordance with one of the conducted studies, DEA applies entrepreneurial oriented input and output. The conceptual framework of this study is interpreted in the end of Chapter 2. The method for the study, which is the research design and procedure were presented in chapter 3. This chapter demonstrates the selection of the respondents, sample types and size, the development of the questionnaire and data collection procedure or method. Chapter 3 ends with a brief description of the strategies and procedures that are employed to evaluate data collected from the survey as well as the most popular models of DEA method (CCR and BCC methods). The results and findings of quantitative and qualitative analyses are represented by Chapter 4. This journey is ended by discussion and conclusion of the findings, recommendation for future studies, and highlighting the limitations and contributions.

## REFERENCES

- Abrishamkar, M. M., Sanati, F. and Allameh, S. M. (2011). The Relationship between Corporate Entrepreneurship and Sales in Iran-Khodro Agencies of Isfahan and Shiraz. *International Journal of Knowledge, Culture and Change Management*.10(12), 115-127.
- Aktan, B. and Bulut, C. (2008). Financial Performance Impacts of Corporate Entrepreneurship in Emerging Markets: A Case of Turkey. *European Journal of Economics, Finance and Administrative Sciences*. (12), 69-79.
- Alam, I. and Perry, C. (2002). A customer-oriented new service development process, *Journal of Services Marketing*. 16(6), 15-534.
- Aliaga, M. and Gunderson, B. (2002). *Interactive Statistics. Second Edition*. Harlow: Pearson Education.
- Alirezaei, M. R. and Rafiei, M. R. (2011). Developing AHP/DEA for Ranking DMUs. *Journal of industrial management (Persian journal)*. 2(5).
- Allen, R., Athanassopoulos, A., Dyson, R. G., and Thanassoulis, E. (1997). Weights restrictions and value judgments in data envelopment analysis: Evolution, development and future directions. *Annals of Operations Research*. 73, 13–34.
- Alpkan, L., Bulut, C., and Gunday, G. (2010). Organizational support for intrapreneurship and its interaction with human capital to enhance innovative performance. *Management Decision*. 48(5), 732–755.
- Altenburg, T. (2011). *Industrial policy in developing countries: overview and lessons from seven country cases*. Discussion Paper 4/2011. Bonn: German Development Institute. Deutsches Institut für Entwicklungspolitik (DIE).
- Alvesson, M. and Deetz, S. (2000). *Doing Critical Management Research*. Thousand Oaks, CA: Sage.
- Amindoost, A and Ketabi. S. (2006). Evaluating and Selecting Suppliers in Supply Chain Network Using DEA. *1st International Conference on Supply Chain Management and Information Systems. Iran*.
- Amindoust, A., Ahmed, S., and Saghafinia, A. (2012). Supplier selection and performance evaluation of telecommunication company. *American Journal of Engineering and Applied Sciences*. 5(1).
- Anastasi, A. and Urbina, S. (1997). *Psychological Testing*. (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Anderson, D. R., Sweeney, D. J. and Williams, T. A. (1999). *Statistics for Business and Economics*. Ohio: South-Western College.
- Ansoff, H. I. (1979). *Strategic Management*. New York: Wiley.

- Antoncic, B. and Hisrich, R. D. (2001). Intrapreneurship: Construct Refinement and Cross-Cultural Validation. *Journal of Business Venturing*, 16 (5), 495-527.
- Antoncic, B. and Hisrich, R. D. (2004). Corporate Entrepreneurship Contingencies and Organizational Wealth Creation. *Journal of Management Development*, 23(6), 518-550.
- Antoncic, B. and Scarlat, C. (2005). Corporate Entrepreneurship and Organizational Performance : A Comparison between Slovenia and Romania, Managing the Process of Globalization in New and Upcoming EU Members. *6th International Confrence of the Faculty of Management Koper*. Congress Center Bernardin. Slovenia.
- Arham, A., Muenjohn, N., and Boucher, C. (2011). The role of entrepreneurial orientation in the leadership-Organisational performance relationship: A Malaysian SMEs perspectives. *24th Annual SEAANZ Conference*. The Small Enterprise Association of Australia and New Zealand.4-26.
- Arumugam, V. C. and Mojtahedzadeh, R. (2011). Critical Success Factors of Total Quality Management and Their Impact on Performance of Iranian Automotive Industry: A Theoretical Approach. *European Journal of Economics, Finance and Administrative Sciences*. (33), 25-41.
- Asadi, M., Arabani, S., Abatary, B., and Zareii, R. (2013). Role and Importance of Entrepreneurship. *Universal Journal of Management and Social Sciences*. 3(6), 46-52.
- Atkinson, A. A., Waterhouse, J. H. and Wells, R. B. (1997). A Stakeholder Approach to Strategic Performance Measurement. *Sloan Management Review*. 38(3), 25-37.
- Azadi, M., Saen, R. F. and Tavana, M. (2012). Supplier Selection Using Chance-Constrained Data Envelopment Analysis with Non-Discretionary Factors and Stochastic Data. *International Journal of Industrial and Systems Engineering*. 10(2), 167-196.
- Baker, T. L. (1994). *Doing Social Research* (2nd ed.). New York: McGraw-Hill.
- Balkin, D. B., Markman, G. D. and Gomez-Mejia, L. R. (2000). Is Ceo Pay in High Technology Firms Related to Innovation? *Academy of Management Journal*. 43(6), 1118-1129.
- Banker, R. D., Bardhan, I. R., Hsihui, C. and Shu, L. (2006). Plant Information Systems, Manufacturing Capabilities, and Plant Performance. *MIS Quarterly: Management Information Systems*. 30(2), 315-337.
- Banker, R. D., Charnes, A. and Cooper, W. W. (1984). Models for Estimating Technical and Scale Efficiencies in Data Envelopment Analysis. *Management Science*. 30(9), 1078-1092.
- Basdeo, D. K., Smith, K. G., Grimm, C. M., Rindova, V. P., and Derfus, P. J. (2006). The impact of market actions on firm reputation. *Strategic Management Journal*. 27(12), 1205–1219.
- Bass, B. M. (1981). *Stodgill's Handbook of Leadership*. New York: Free Press.
- Baum, J. R., Frese, M., and Baron, R. A. (2014). *The Psychology of Entrepreneurship*. East Sussex: Psychology Press.

- Baumol, W. J. (2002). *The free-market innovation machine: Analyzing the growth miracle of capitalis*. Princeton: Princeton University Press.
- Beamon, B. M. (1996). Performance Measure in Supply Chain Management. *Agile and Intelligent Manufacturing Symposium, Rensselaer Polytechnic Institute Troy*. NY. USA.
- Beaver, G. and Prince, C. (2002). Innovation, Entrepreneurship and Competitive Advantage in the Entrepreneurial Venture. *Journal of Small Business and Enterprise Development*. 9(1), 28-37.
- Begley, T. M. and Boyd, D. P. (1987). Psychological Characteristics Associated with Performance in Entrepreneurial Firms and Smaller Businesses. *Journal of Business Venturing*. 2, 79-93.
- Belso-Mart ínez, J. A., Molina-Morales, F. X., and Mas-Verdu, F. (2013). Perceived usefulness of innovation programs for high-tech and low-tech firms. *Management Decision*. 51(6), 1190–1206.
- Berend, I. T. (2007). Social Shock in Transforming Central and Eastern Europe. *Communist and Post-Communist Studies*. 40(3), 269-280.
- Bernard, H. R. (1988). *Research Methods in Cultural Anthropology*. Newbury Park. CA: Sage Publications.
- Bhardwaj, B., Sushil and Momaya, K. (2011). Drivers and Enablers of Corporate Entrepreneurship. *The Journal of Management Development*. 30(2), 187-205.
- Bhuiyan, S. N. (1998). An Empirical Examination of Market Orientation in Saudi Arabian Manufacturing Companies. *Journal of Business Research*. 43(1), 13–25.
- Bird, B. (1988). Implementing Entrepreneurial Ideas: The Case for Intention. *Academy of Management Review*. 13, 442-453.
- Birkinshaw, J. (1999). The Determinants and Consequences of Subsidiary Initiative in Multinational Corporations. *Entrepreneurship Theory and Practice*. 24(1), 9-36.
- Birkinshaw, J., Hood, N. and Young, S. (2005). Subsidiary Entrepreneurship, Internal and External Competitive Forces, and Subsidiary Performance. *International Business Review*. 14(2), 247-248.
- Bishop, J. W., Hornsby, J. S. and Kuratko, D. F. (2005). Managers' Corporate Entrepreneurial Actions and Job Satisfaction. *The International Entrepreneurship and Management Journal*. 1(3), 275.
- Bogdan, R. C. and K., B. S. (1998). *Qualitative Research for Education: An Introduction to Theory and Methods* (3rd ed.). Boston: Allyn and Bacon.
- Bonet, F. P., Armengot, C. R. and Mart ín, M. A. G. (2011). Entrepreneurial Success and Human Resources. *International Journal of Manpower*. 32(1), 68-80.
- Bowlin, W. F. (1999). An Analysis of the Financial Performance of Defense Business Segments Using Data Envelopment Analysis. *Journal of Accounting and Public Policy*. 18, 287-310.
- Brazeal, D. V. and Herbert, T. T. (1999). The Genesis of Entrepreneurship. *Entrepreneurship Theory and Practice*. 23(3), 29-45.

- Brewer, P. C. and Speh, T. W. (2000). Using the Balanced Scorecard to Measure Supply Chain Performance. *Journal of Business Logistics*. 21(1), 75-92.
- Brizek, M. G. and Khan, M. A. (2007). An Empirical Investigation of Corporate Entrepreneurship Intensity in the Casual Dining Sector. *International Journal of Hospitality Management*. 26(4), 871-885.
- Brock, D. M. (2003). Autonomy of Individuals and Organizations: Towards a Strategy Research Agenda. *International Journal of Business and Economics*. 2, 57-73.
- Brockhaus, R. (1980). Risk Taking Propensity of Entrepreneurs. *Academy of Management Journal*. 23, 509-520.
- Brown, J. D. (2011). Likert items and scales of measurement. *Statistics*, 15(1), 10-14.
- Brown, T. E., Davidsson, P. and Wiklund, J. (2001). An Operationalization of Stevenson's Conceptualization of Entrepreneurship as Opportunity-Based Firm Behavior. *Strategic Management Journal*. 22(10), 953-968.
- Brundin E, Patzelt H, Shepherd DA. (2008). Managers' emotional displays and employees' willingness to act entrepreneurially. *Journal of Business Venturing*, 23(2), 221-243.
- Brush, C. G. (2006). *Women and Entrepreneurship: Contemporary Classics*. Northampton: Edward Elgar Publishing.
- Bruyat, C. and Julien, P. A. (2001). Defining the Field of Research in Entrepreneurship. *Journal of Business Venturing*. 16(1), 165-180.
- Bryman, A. (1987). The Generalizability of Implicit Leadership Theory. *Journal of Social Psychology*. 127, 129 - 141.
- Bryman, A. (1988). *Quantity and Quality in Social Research*. London: Unwin Hyman.
- Bryman, A. and Bell, E. (2011). *Business Research Methods*. (3rd ed.). Oxford Oxford University Press.
- Bryman, A., Lewis-Beck, M. S. and Liao, T. F. (2008). *Social Science Research Methods* (3rd ed.). New York: Oxford.
- Bullinger, H. J., Kuhner, M. and Hoof, A. V. (2002). Analyzing Supply Chain Performance Using a Balanced Measurement Method. *International Journal of Production Research*. 40(15), 3533-3543.
- Burch, John G. (1986). *Entrepreneurship*. New York, John Wiley & Sons Inc.
- Burgelman, R. A. (1983). Corporate Entrepreneurship and Strategic Management: Insights from a Process Study. *Management Science*. 23, 1349-1363.
- Burgelman, R. A. (1984). Designs for Corporate Entrepreneurship in Established Firms. *California Management Review*. 26(3), 154-166.
- Burgelman, R. A. (2001). *Strategy Is Destiny: How Strategy-Making Shapes a Company's Future*. New York: Free Press.
- Burns, A. T., Acar, W., and Datta, P. (2011). A qualitative exploration of entrepreneurial knowledge transfers. *Journal of Knowledge Management*. 15(2), 270-298.
- Burns, R. (2000). *Introduction to Research Methods*. 4<sup>th</sup> edition. New South Wales: Longman.
- Cai, L., Liu, Q., Deng, S., and Cao, D. (2014). Entrepreneurial orientation and external technology acquisition: an empirical test on performance of technology-based



- new ventures. *Journal of Business Economics and Management*. 15(3), 544–561.
- Camp, Robert C. (1998). *Global cases in benchmarking*. Milwaukee (WI): ASQ Quality Press.
- Carland, J. W., Hoy, H., Boulton, W. R. and Carland, J. C. (1984). Differentiating Entrepreneurs from Small Business Owners. *Academy of Management Review*, 9(2), 354-359.
- Carrell, M. R., Jennings, D. F. and Heavren, C. (1997). *Fundamentals of Organisational Behavior*. New Jersey: Prentice Hall.
- Carrier, C. (1996). Intrapreneurship in Small Businesses: An Exploratory Study. *Entrepreneurship Theory and Practice*. 21(1), 5-20.
- Cavana, R. Y., Delahaye, B. L. and Sekaran, U. (2001). *Applied Business Research: Qualitative and Quantitative Methods*. New York, NY: John Wiley and Sons.
- Celebi, D. and Bayraktar, D. (2008). An Integrated Neural Network and Data Envelopment Analysis for Supplier Evaluation under Incomplete Information. *Expert Systems with Applications*. 35(4), 1698-1710.
- Charnes, A., Cooper, W. W. and Rhodes, E. (1978). Measuring the Efficiency of Decision Making Units. *European Journal of Operational Research*. 2(6), 429-444.
- Charnes, A., Cooper, W. W. and Rhodes, E. (1981). Evaluating Program and Managerial Efficiency: An Application of Data Envelopment Analysis to Program Follow Through. *Management Science*. 27(6), 668-697.
- Charnes, A., Cooper, W., Lewin, A. and Seiford, L. (1995). *Data Envelopment Analysis Theory, Methodology and Applications*. London: Kluwer Academic Publishers.
- Chen, M. H. and Cangahuala, G. (2010). *Corporate Entrepreneurship Environment and Organizational Performance in Technology Manufacturing Sector*. New York: IEEE.
- Chen, M., and Miller, D. (2014). Reconceptualizing competitive dynamics: A multidimensional framework. *Strategic Management Journal*.
- Chen, Y. J. (2011). Structured Methodology for Supplier Selection and Evaluation in a Supply Chain. *Information Sciences*. 181(9), 1651-1670.
- Choy, K. L., Lee, W. B., and Lo, V. (2003). Design of a case based intelligent supplier relationship management system-the integration of supplier rating system and product coding system. *Expert Systems with Applications*. 25(1), 87–100.
- Coelli, T. J., 1996. A Guide to DEAP Version 2.1: A data envelopment analysis (computer) program. *Center for Efficiency and Productivity Analysis. University of New England. Working paper*, 96(08).
- Coelli, T. J., Prasada Rao, D. S., O'Donnell, C. J. and Battese, G. E. (2005). *An Introduction to Efficiency and Productivity Analysis* (Second ed.). New York: Springer US.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (Second ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

- Cohen, L. and Manion, L. (1994). *Research Methods in Education* (4th ed.). London: Routledge.
- Cohen, W.; Levinthal, D. 1990. Absorptive-capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*. 35(1), 128–15.
- Collins, K. M. T. and Onwuegbuzie, A. J. (2007). A Typology of Mixed Methods Sampling Designs in Social Science Research. *The Qualitative Report*. 12(2), 281.
- Conger, J.A. and Kanungo, R.N. (1987). Toward a behavioural theory of charismatic leadership in organisational settings. *Academy of Management Review*. 12, 637-47.
- Cook, W. C. and Hunsaker, P. L. (2001). *Management and Organisational Behaviour*. New York: McGraw-Hill Irwin.
- Cook, W. D., Kress, M. and Seiford, L. M. (1996). Data Envelopment Analysis in the Presence of Both Quantitative and Qualitative Factors. *Journal of the Operational Research Society*, 47(7), 945-953.
- Cook, W. D., Kress, M., and Seiford, L. M. (1993). On the use of ordinal data in data envelopment analysis. *Journal of the Operational Research Society*. 44(2).133-140.
- Cooper, A. C., Markman, G. D., & Niss, G. (2000). The evolution of the field of entrepreneurship. *Entrepreneurship as strategy*, 115-133.
- Cooper, W. W., Seiford, L. M. and Tone, K. (2007). *Data Envelopment Analysis. A Comprehensive Text with Models, Applications, References, and DEA-Solver Software* (2nd ed.). New York: Springer.
- Cornwall, J. R. and Perlman, B. (1990). *Organizational Entrepreneurship*. Home-Wood: Irwin.
- Covin, J. G. and Covin, T. J. (1990). Competitive Aggressiveness, Environmental Context and Small Firm Performance. *Entrepreneurship: Theory and Practice*, 14(4), 35-50.
- Covin, J. G. and Miles, M. P. (1999). Corporate Entrepreneurship and the Pursuit of Competitive Advantage. *Entrepreneurship: Theory and Practice*, 23(3), 47-63.
- Covin, J. G. and Slevin, D. P. (1991). A Conceptual Model of Entrepreneurship as Firm Behavior. *Entrepreneurship: Theory and Practice*, 16(1), 7-25.
- Covin, J. G. and Slevin, D. P. (2002). The Entrepreneurial Imperatives of Strategic Leadership. In M. A. Hitt *et al.* (Eds.), *Strategic Entrepreneurship: Creating a New Mindset* (pp. 309-327). Oxford: Blackwell Publishers.
- Covin, J. G., Green, K. M. and Slevin, D. P. (2006). Strategic Process Effects on the Entrepreneurial Orientation - Sales Growth Rate Relationship. *Entrepreneurship: Theory and Practice*, 30(1), 57-81.
- Crant, M. J. 2000. Proactive Behavior in Organizations. *Journal of Management*. 26, 435-462.
- Crant, M. J. (1996). The Proactive Personality Scale as a Predictor of Entrepreneurial Intentions. *Journal of Small Business Management*, 34, 42-49.
- Creswell, J. W. (2002). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Saddle River, NJ: Prentice Hall

- Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (2nd ed.). Thousand Oaks: Sage.
- Cricelli, L., Gastald, M. and Leviald, N. (2002). Efficiency Measurement of Factories Via Data Envelopment Analysis. *Systems Analysis Modelling Simulation*, 42(10), 1521-1536.
- D'Aveni, R. (1994). *Hypercompetition: Managing the Dynamics of Strategic Maneuvering*. Free Press, New York.
- Daft, R. L. (2001). *Organization Theory and Design*. Ohio: South-Western College Publishing.
- Daily, C. A., McDougall, P. P., Covin, J. G. and Dalton, D. R. (2002). Governance and Strategic Leadership in Entrepreneurial Firms. *Journal of Management*, 28(3), 387-412.
- Dale, B. G., Van Der Wiele, T., and Van Iwaarden, J. (2013). *Managing quality*. John Wiley & Sons.
- Dangayach, G. and Deshmukh, S. (2001). Manufacturing Strategy. *International Journal of Operations and Production Management*, 21(7), 884-932.
- Darabi, M.; Saeedi, M.(2008). The design of an integrated model for supplier evaluation and order allocation model using data envelopment analysis and multi-objective mathematical programming. *Journal of Automobile Engineering and Industry*. 20(4).
- Daryani, M. A. (2001). *Entrepreneurship: Definitions, Theories and Models* (Fourth ed.). Tehran: Prdis 57.
- Daryani, M. A. and Moghimi, S. M. (2005). *Fundamental of Entrepreneurship* (Third ed.). Tehran: Farandish.
- Dauda, Y. (2009). *Managing Technology Innovation: The Human Resource Management Perspective*. Peter Lang.
- Davis, T. M. (2006). *Corporate Entrepreneurship Assessment Instrument (CEAI): Systematic Validation of a Measure*. Air University, Ohio.
- Dawson, B. K., Young, L., Tu, C., and Chongyi, F. (2014). Co-innovation in networks of resources: A case study in the Chinese exhibition industry. *Industrial Marketing Management*. 43(3), 496-503.
- De Boer, L., Labro, E. and Molrlacchi, P. (2001). A Review of Methods Supporting Supplier Selection. *European Journal of Purchasing and Supply Management*, 7, 75–89.
- De Castro, J. O. and Uhlenbruck, K. (2003). The transformation into entrepreneurial firms. Examining the context of privatization. *Management Research*. 1(2): 171–184.
- de Koster, M. B. M., Balk, B. M. and van Nus, W. T. I. (2009). On Using DEA for Benchmarking Container Terminals. *International Journal of Operations & Production Management*, 29(11-12), 1140-1155.
- De Quevedo Puente, E.; De La Fuente Sabat é J.M.; Delgado Garc á, J.B. (2007). Corporate Social Performance and Corporate Reputation: Two Interwoven Perspective, *Corporate Reputation Review*. 10 (1), 60-72.
- De Vaus, D. A. (1993). *Surveys in Social Research* (3rd ed.). London: UCL Press.

- Dehghan, N. and Haghghi, M. (2008). Corporate Entrepreneurship in Iran and Development of a Model for the Economic and Social Environments in Iran. *5th International AGSE Entrepreneurship Research Exchange*, Swinburne University of Technology, Melbourne, Australia.
- Del Monte, A., and Papagni, E. (2003). R&D and the growth of firms: empirical analysis of a panel of Italian firms. *Research Policy*. 32(6), 1003–1014.
- Deluyi, M., Hosein, A., Sofian, S., Hamid, A., Bakar, A., and Kazemi, M. (2014). Screening Efficiency and Entrepreneurship Potential in Automotive Suppliers Using DEA. *Applied Mechanics and Materials*. 554,510-514.
- Demirbag, M., Koh, S. C. L., Tatoglu, E. and Zaim, S. (2006). Tqm and Market Orientation's Impact on Smes' Performance. *Industrial Management and Data Systems*, 106 (8), 1206-1228.
- Desouza, KC, Dombrowski, C., Awazu, Y., Baloh, P., Papagari, S., Jha, S., and Kim, J. Y. (2009). Crafting organizational innovation processes. *Innovation: Management, Policy & Practice*. 11(1), 6–33.
- Dess, G.G. and Picken, J.C. (1999), Beyond Productivity: How Leading Companies Achieve Superior Performance by Leveraging Their Human Capital, AMACOM, New York, NY.
- Dess, G. G. and Lumpkin, G. T. (2005). Research Edge: The Role of Entrepreneurial Orientation in Stimulating Effective Corporate Entrepreneurship. *The Academy of Management Executive (1993-2005)*, 19(1), 147-156.
- Dess, G. G., Ireland, R. D., Zahra, S. A., Floyd, S. W., Janney, J. J. and Lane, P. J. (2003). Emerging Issues in Corporate Entrepreneurship. *Journal of Management*, 29(3), 351-378.
- Dess, G. G., Lumpkin, G. T. and Covin, J. G. (1997). Entrepreneurial Strategy Making and Firm Performance: Tests of Contingency and Configurational Models. *Strategic Management Journal*, 18(9), 677-695.
- Dess, G. G., Lumpkin, G. T. and McGee, J. E. (1999). Linking Corporate Entrepreneurship to Strategy, Structure, and Process: Suggested Research Directions. *Entrepreneurship: Theory and Practice*, 23(3), 85-102.
- Dess, G. G., Lumpkin, G. T., Eisner, A. B. and McNamara, G. (2011). *Strategic Management: Text and Cases* (6th ed.). New York: McGraw-Hill/Irwin.
- Dhliwayo, S. (2010). The Entrepreneurial Organisation. In B. Urban (Ed.), *Frontiers in Entrepreneurship* (pp. 139-158): Springer Berlin Heidelberg.
- Dickson, G. W. (1996). An Analysis of Vendor Selection Systems and Decisions. *Journal of Purchasing*, 2(1), 28-41.
- Donthu, N. and Yoo, B. (1998). Retail Productivity Assessment Using Data Envelopment Analysis. *Journal of Retailing*, 74(1), 89-105.
- Drucker, P. (1946). *The Concept of the Corporation*. New York: John Day.
- Drucker, P. (1985). The Discipline of the Innovator. *Harvard Business Review*, 63(3), 67-72.
- Dunteman, G. and Bass, B. M. (1963). Supervisory and Engineering Success Associated with Self, Interaction, and Task Orientation Scores. *Personnel Psychology*, 16, 13-22.

- Easterby-Smith, M., Thorpe, R. and Lowe, A. (2002). *Management Research: An Introduction* (2nd ed.). London: Sage.
- Ebel, R. and Frisbie, D. (1986). *Essential of Education Measurement* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Echols, A. E. and Neck, C. P. (1998). The Impact of Behaviors and Structure on Corporate Entrepreneurial Success. *Journal of Managerial Psychology*, 13(1/2), 38-46.
- Edmiston, K. D. (2007). The Role of Small and Large Businesses in Economic Development. *SSRN eLibrary*.
- Ellram, L. M. (1987). The Supplier Selection Decision in Strategic Partnerships. *Journal of Purchasing and Materials Management*, 26(3), 8-14.
- Emrouznejad, A., Parker, B. R. and Tavares, G. (2008). Evaluation of Research in Efficiency and Productivity: A Survey and Analysis of the First 30 Years of Scholarly Literature in DEA. *Socio-Economic Planning Sciences*, 42(3), 151-157.
- European Union. (2005). *Promoting growth and employment of the European Union. com 2005/551; IP/05/1404*. available at: [www.ec.europa.eu/enterprise](http://www.ec.europa.eu/enterprise) (accessed 3 February 2006).
- Fairlie, R. W. and Holleran, W. (2012). Entrepreneurship Training, Risk Aversion and Other Personality Traits: Evidence from a Random Experiment. *Journal of Economic Psychology*, 33(2), 366-378.
- Faisal, M. N., Banwet, D. K. and Shankar, R. (2007). Information Risks Management in Supply Chains: An Assessment and Mitigation Framework. *Journal of Enterprise Information Management*, 20(6), 677-699.
- Farrell, M. J. (1957). The Measurement of Productive Efficiency. *Journal of Royal Statistical Society*, 120 (3), 253-290.
- Femi, O. (2014). Building Construction Technician Training: It's Relevance to Modern Construction Industry in Nigeria. *International Journal Of Technology Enhancements And Emerging Engineering Research*. 2(3), 58–68.
- Ferrier, W. (2001). Navigating the Competitive Landscape: The Drivers and Consequences of Competitive Aggressiveness. *Academy of Management Journal*. 44(4), 858–877.
- Floyd, S. W. and Woolridge, B. (1994). Dinosaurs or Dynamos? Recognizing Middle Management's Strategic Role. *Academy of Management Executive*, 8, 47-58.
- Forlani, D. and Mullins, J. W. (2000). Perceived Risks and Choices in Entrepreneurs' New Venture Decisions. *Journal of Business Venturing*, 15(4), 305-322.
- Forozanfar, H., Shorofi, M. A. and Bahrami, S. (2011). Investigating Organizational Entrepreneurial Orientation in Ikco (Iran Khodro). *Australian Journal of Basic and Applied Sciences*, 5(9), 1790-1798.
- Fuangkajonsak, W. (2006). *Industrial policy options for developing countries the case of the automotive sector in Thailand & Malaysia*. Master of arts in law and diplomacy thesis. Tufts University.

- Fukuyama, H. (1995). Measuring Efficiency and Productivity Growth in Japanese Banking: A Non-Parametric Approach. *Applied Financial Economics*, 5(2), 95-107.
- Galetic, F. and Milovanovic, B. M. (2008). Linking Entrepreneurial Orientation with the Performance of Croatian Hotel Industry. *An Enterprise Odyssey. International Conference Proceedings, Zagreb*.
- Gall, M. D., Borg, W. R. and P., G. J. (2006). *Educational Research: An Introduction* (8th ed.). Boston, MA: Allyn & Bacon.
- Gall, M. D., Gall, J. P. and Borg, W. R. (2007). *Educational Research: An Introduction*. Pearson: Allyn & Bacon.
- Galloway, F. and Weinstein, O. (1997). Innovation in services. *Research Policy*, 26(4/5), 537-56.
- García-Morales, V. J., Llorens-Montes, F. J., and Verdú-Jover, A. J. (2006). Antecedents and consequences of organizational innovation and organizational learning in entrepreneurship. *Industrial Management & Data Systems*, 106(1), 21-42.
- Garcia, R. and Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *The Journal of Product Innovation Management*, 19(2), 110-32.
- Garfamy, R. M. (2006). A Data Envelopment Analysis Approach Based on Total Cost of Ownership for Supplier Selection. *Journal of Enterprise Information Management*, 19(6), 662-678.
- Gargari, A. S. and Asadollahi, A. (2014). Evaluation the relation between organizational structure and entrepreneurship in physical education of Islamic Azad University. *International Journal of Science Culture and Sport (IntJSCS)*, 2(1), 46-53.
- Gartner, W. B. (1990). What Are We Talking About When We Talk About Entrepreneurship? *Journal of Business Venturing*, 5(1), 15-28.
- Gatewood, R., Feild, H. S. and Barrick, M. (2011). *Human Resource Selection* (7th ed.). Mason, OH: South-Western, Cengage Learning.
- Gatignon, H., and Xuereb, J. (1997). Strategic orientation of the firm and new product performance. *Journal of marketing research*, 34(1), 77-90.
- Gay, L. R. and Airasian, P. (2000). *Educational Research: Competencies for Analysis and Application*. Upper Saddle River, NJ: Prentice-Hall, Inc.
- Gay, L. R., Mills, G. E. and Airasian, P. (2009). *Educational Research Competencies for Analysis and Application*. Singapore: Pearson.
- Gefen, D., and Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information systems*, 16(1), 5.
- Gelard, P. and Saleh, K. E. (2011). Impact of Some Contextual Factors on Entrepreneurial Intention of University Students. *African Journal of Business Management*, 5(26), 10707-10717.
- Gelderens, M. van. (2010). Autonomy as the guiding aim of entrepreneurship education. *Education + Training*, 52(8/9), 710-721.

- Ghodsypour, S. and O'Brien, C. (2001). The Total Cost of Logistics in Supplier Selection, under Conditions of Multiple Sourcing, Multiple Criteria and Capacity Constraint. *International Journal of Production Economics*, 73, 15-27.
- Gillham, B. (2005). *Research Interviewing*. Berkshire: Open University Press.
- Ginsberg, A. and Hay, M. (1994). Confronting the Challenges of Corporate Entrepreneurship: Guidelines for Venture Managers. *European Management Journal*, 12, 382-389.
- Goodale, J.C., Kuratko, D.F., Hornsby, J.S., Covin, J.G. (2011). Operations management and corporate entrepreneurship: the moderating effect of operations control on the antecedents of corporate entrepreneurial activity in relation to innovation performance. *Journal of Operations Management*. 29 (1-2), 116-127.
- Goosen, G. J. (2002). *Key Factor Intrapreneurship: The Development of a Systems Model to Facilitate the Perpetuation of Entrepreneurship in Large South African Organizations*. University of Stellenbosch, Stellenbosch.
- Gravetter, F. J., and Wallnau, L., B. (2007). *Statistics for the Behavioral Sciences*. Belmont, CA: Thompson Learning.
- Greenberg J. (2011). *Behavior in organizations*. (Tenth Edition) Upper Saddle River, NJ: Pearson Education/Prentice Hall.
- Greenberg, J. and Baron, R. A. (1997). *Behaviour in Organisations*. New Jersey: Prentice Hall.
- Guimaraes, T., and Bond, W. (1996). Empirically assessing the impact of BPR on manufacturing firms. *International Journal of Operations & Production Management*. 16(8), 5-28.
- Gulati R. (1995). Does familiarity breed trust? The implications of repeated ties for contractual choices in alliances. *Academy of Management Journal*. 38, 85-112.
- Gunasekaran, A., Patel, C. and McGaughey, R. E. (2004). A Framework for Supply Chain Performance Measurement. *International Journal of Production Economics*, 87(3), 333-347.
- Guth, W.D. and Ginsberg, A. (1990). Guest editor's introduction: corporate entrepreneurship. *Strategic Management Journal*. 1, 5-15.
- Hair, J. F., Anderson, R. E., Tatham, R. L., and Black, W. C. (1998) *Multivariate Data Analysis*. Prentice-Hall International, Inc., 5<sup>th</sup> Edition.
- Harbi, S. E. and Anderson, A. R. (2010). Institutions and the Shaping of Different Forms of Entrepreneurship. *Journal of Socio-Economics*, 39, 436-444.
- Harbison, F. and Myers, C. A. (1959). *Management and the Industrial World: An International Analysis*. New York, NY: McGraw-Hill.
- Harry, C. (2001). Parenting, Self-Control, and Delinquency: A Test of Self-Control Theory. *Criminology*, 39(3).
- Hart, S. L. (1992). An Integrative Framework for Strategy-Making Processes. *Academy of Management Review*, 17(2), 327-351.

- Harvie, C. and Lee, B.-C. (2005). *Sustaining Growth and Performance in East Asia: The Role of Small and Medium Sized Enterprises*. University of California: Edward Elgar.
- Hayes, R. H., and Abernathy, W. J. (1980). Managing our way to economic decline. *Harvard Bus. Rev. (United States)*. 58(4).
- Hemati, M., Azadnia, A. H. and Malekshah, M. A. (2010). Integrated AHP and Topsis Algorithm for Evaluating and Selecting Suppliers. *2rd International Conference in Operation Research*.
- Hertzog, M. A. (2008). Considerations in Determining Sample Size for Pilot Studies. *Research in Nursing & Health*, 31 180-191.
- Hewitt, M.(2009). Entrepreneurial Intensity: A Correlation between South African Firms. from [https://www.academia.edu/197290/Entrepreneurial\\_Intensity\\_A\\_Correlation\\_Amongst\\_Firms](https://www.academia.edu/197290/Entrepreneurial_Intensity_A_Correlation_Amongst_Firms).
- Hill, M. E. (2003). *The Development of an Instrument to Measure Intrapreneurship: Entrepreneurship within the Corporate Setting*. Rhodes University Grahamstown.
- Hinton, P. B., Brownlow, C., McMurray, I. and Cozens, B. (2004). *Spss Explained*. London: Routledge.
- Hisrich, R. D. and Peters, M. P. (2002). *Entrepreneurship* (Fifth ed.). New York: McGraw-Hill Irwin.
- Hisrich, R. D. and Peters, M. P. (2002). *Entrepreneurship* (5th ed.). New York: McGraw-Hill/Irwin.
- Hisrich, R. D., Peters, M. and Shepherd, D. (2005). *Entrepreneurship* (6th ed.). New York: McGraw-Hill/Irwin.
- Hitt, M. A., Ireland, R. D., Camp, S. M. and Sexton, D. L. (2001). Guest Editors' Introduction to the Special Issue Strategic Entrepreneurship: Entrepreneurial Strategies for Wealth Creation. *Strategic Management Journal*, 22, 479-491.
- Hitt, M. A., Ireland, R., Camp, M., and Sexton, D. (2002). Strategic entrepreneurship: Integrating entrepreneurial and strategic management perspectives. In M. A. Hitt, R. Ireland, M. Camp and D. Sexton (Eds.), *Strategic Entrepreneurship: Creating a new mindset* (pp. 1-13). Oxford: Blackwell.
- Ho, W., Xu, X. and Dey, P. K. (2010). Multi-Criteria Decision Making Approaches for Supplier Evaluation and Selection: A Literature Review. *European Journal of Operational Research*, 202(1), 16-24.
- Hofstede, G. J. (1980). *Culture's Consequences: International Differences in Work-Related Values*. California: Sage.
- Holmberg, S. (2000, 2000 September-October). A Systems Perspective on Supply Chain Measurements. *International Journal of Physical Distribution and Logistics Management*, 30, 847+.
- Holt, D. T., Rutherford, M. W. and Clohessy, G. R. (2007). Corporate Entrepreneurship: An Empirical Look at Individual Characteristics, Context, and Process. *Journal of Leadership and Organizational Studies*, 13(4), 40+.



- Hooley, G. and Mann, S. (1988). The adoption of marketing by financial institutions. *The Service Industries Journal*. 5(3). 261-272.
- Hornaday, J. (1992). Thinking About Entrepreneurship: A Fuzzy Set Approach. *Journal of Small Business Management*, 30(4), 12-23.
- Hornsby, J. S., Kuratko, D. F. and Zahra, S. A. (2002). Middle Managers' Perception of the Internal Environment for Corporate Entrepreneurship: Assessing a Measurement Scale. *Journal of Business Venturing*, 17(3), 253-273.
- Hornsby, J.S., Kuratko, D.F., Zahra, S.A., (2002). Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale. *Journal of Business Venturing*. 17 (3), 253–273.
- Hsieh, H. F. and Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- Huang, E. Y. and Lin, S.-C. (2006). How R&D Management Practice Affects Innovation Performance. *Industrial Management and Data Systems*, 106 (7), 966-996.
- Huang, S., Lee, C., Chiu, A., and Yen, D. (2014). How business process reengineering affects information technology investment and employee performance under different performance measurement. *Information Systems Frontiers*. 1–12.
- Hughes, M. and Morgan, R. E. (2007). Deconstructing the Relationship between Entrepreneurial Orientation and Business Performance at the Embryonic Stage of Firm Growth. *Industrial Marketing Management*, 36(5), 651-661.
- Hugos, M. (2008). *Essentials of Supply Chain Management*. Hoboken, New Jersey: John Wiley & Sons Inc.
- Idris, A. (2009). Management styles and innovation in women-owned enterprises. *African Journal of Business Management*. 3(9), 416-425.
- Ip, W. H., Chan, S. L. and Lam, C. Y. (2011). Modeling Supply Chain Performance and Stability. *Industrial Management and Data Systems*, 111(8), 1332-1354.
- Ireland, R. D. and Hitt, M. A. (1999). Achieving and Maintaining Strategic Competitiveness in the 21st Century: The Role of Strategic Leadership. *Academy of Management Executive*, 13 (1), 43-57.
- Ireland, R. D., Kuratko, D. F. and Morris, M. H. (2006). A Health Audit for Corporate Entrepreneurship: Innovation at All Levels (Part 2). *Journal of Business Strategy*, 27(2), 21-30.
- Jain, A. (2007). *Towards a systemic view of organizational dynamic IT capability: An empirical assessment*. The University of Texas at Arlington.
- Jain, R., Singh, A., and Mishra, P. (2013). Prioritization of Supplier Selection Criteria: A Fuzzy-AHP Approach. *MIT International Journal of Mechanical Engineering*. 3(1), 34–42.
- Jamali. D. (2009). Constraints and opportunities facing women entrepreneurs in developing countries. *Gender Manage*. 24(4), 232- 251.
- Jennings, D. and Lumpkin, J. R. (1989). Functionally Modeling Corporate Entrepreneurship: An Empirical Integrative Analysis *Journal of Management*, 15(3), 485-502.

- Jennings, D. and Young, D. (1990). An Empirical Comparison between Objective and Subjective Measures of the Product Innovation Domain of Corporate Entrepreneurship. *Entrepreneurship: Theory and Practice*, 15(1), 53-66.
- Jennings, D. F. (1994). *Multiple Perspectives of Entrepreneurship: Texts, Readings, and Cases* (1st ed.). Cincinnati: South Western.
- Jensen, T. D., White, D. D. and Singh, R. (1990). Impact of Gender, Hierarchical Position, and Leadership Styles on Work-Related Values. *Journal of Business Research*, 20(1), 145-152.
- Jianping, L., and Chao, W. (2010). Objectives and Approaches of Entrepreneurship Education in Chinese Colleges and Universities. Proceedings of the 7th International Conference on Innovation & Management. *pucsp.br* (1824–1827). China: Wuhan University of Technology.
- Johanson, G. A. and Brooks, G. P. (2010). Initial Scale Development: Sample Size for Pilot Studies. *Educational and Psychological Measurement*, 70(3), 394-400.
- Johne, A. (1999). Successful Market Innovation. *European Journal of Innovation Management*, 2(1), 6-11.
- Johnson, D. (2001). What Is Innovation and Entrepreneurship? Lessons for Larger Organisations. *Industrial and Commercial Training*, 33(4), 135-140.
- Johnson, L. K. (2002). The Organizational Identity Trap - the Answer to the Question, "Who Are We?" Is Complex, Elusive and Can Confound Strategic Change. *Mit Sloan Management Review*, 43(4), 11-11.
- Joo, S. J., Nixon, D. and Stoeberl, P. A. (2011). Benchmarking with Data Envelopment Analysis: A Return on Asset Perspective. *Benchmarking*, 18(4), 529-542.
- Jun, Z. and Deschoolmeester, D. (2003). How to Gauge the Innovativeness Held by an Entrepreneur: A Conceptually, Explanatory Framework. *48th Annual Conference of the International Council for Small Business*.
- Kanter, R. M. (1985). Supporting Innovation and Venture Development in Established Companies. *Journal Business Venturing*, 1, 47-60.
- Kanter, R. M. (1989). *When Giants Learn to Dance*. New York, NY: Simon & Schuster.
- Karimi, A., Malekmohamadi, I., Daryani, M. A. and Rezvafar, A. (2011). A Conceptual Model of Intrapreneurship in the Iranian Agricultural Extension Organization: Implications for Hrd. *Journal of European Industrial Training*, 35(7), 632-657.
- Katner, R. (1983). *The Change Masters*, Simon and Schuster. New York, NY.
- Kazanjian, R., Drazin, R. and Glynn, M. (2002). Implementing Strategies for Corporate Entrepreneurship: A Knowledge Based Perspective. In M. Hitt *et al.* (Eds.), *Strategic Entrepreneurship: Creating a New Mindset*. Blackwell.
- Kearney, C., Hisrich, R. D. and Roche, F. (2008). A Conceptual Model of Public Sector Corporate Entrepreneurship. *International Entrepreneurship and Management Journal*, 4(3), 295-313.
- Kerr, C., Nixon, A. and Wild, D. (2010). Assessing and Demonstrating Data Saturation in Qualitative Inquiry Supporting Patient-Reported Outcomes Research. *Expert Review of Pharmacoeconomics and Outcomes Research*, 10(3), 269+.

- Khaksar, S. M. S., Nawaser, K., Jahanshahi, A. A. and Kamalian, A. R. (2011). The Relation between after-Sales Services and Entrepreneurial Opportunities: Case Study of Iran-Khodro Company. *African Journal of Business Management*, 5(13), 5152-5161.
- Kickul, J. R., Griffiths, M. D., Jayaram, J. and Wagner, S. M. (2011). Operations Management, Entrepreneurship, and Value Creation: Emerging Opportunities in a Cross-Disciplinary Context. *Journal of Operations Management*, 29(1-2), 78-85.
- Kim, T. (2010). Efficiency of Trucks in Logistics: Technical Efficiency and Scale Efficiency. *Asian Journal on Quality*, 11(1), 89 - 96.
- Kittelson and Associates. (2003). *A Guidebook for Developing a Transit Performance-Measurement System*, Transportation Research Board. Washington, DC.
- Kleinsorge, I. K., Schary, P. B. and Tanner, R. D. (1992). Data Envelopment Analysis for Monitoring Customer-Supplier Relationships. *Journal of Accounting and Public Policy*, 11, 357-372.
- Kline, R.B. (2005), *Principles and Practice of Structural Equation Modeling* (2nd Edition ed.). New York: The Guilford Press.
- Knight, G. A. (1997). Cross-Cultural Reliability and Validity of a Scale to Measure Firm Entrepreneurial Orientation. *Journal of Business Venturing*, 12, 213-225.
- Kounetas, K. and Tsekouras, K. D. (2007). Scale Efficiency Change in a Translog Production Function. *International Journal of Economics and Business*, 6, 63-69.
- Kraatz, M. S. and Zajac, E. J. (2001). How Organizational Resources Affect Strategic Change and Performance in Turbulent Environments: Theory and Evidence. *Organization Science*, 12(5), 632-657.
- Kreiser, P. M., Marino, L. D. and Weaver, K. M. (2002, 2002 Summer). Assessing the Psychometric Properties of the Entrepreneurial Orientation Scale: A Multi-Country Analysis. *Entrepreneurship: Theory and Practice*, 26, 71-94.
- Kumar, K. S. and Babu, A. S. (2012). An Integrated Method Using AHP, DEA and GP for Evaluating Supply Sources. *International Journal of Services and Operations Management*, 11(2), 123-150.
- Kuratko, D. F. (2007). *Corporate Entrepreneurship* (54). Now Publishers Inc.
- Kuratko, D. F. (2009). *Entrepreneurship: Theory, Process, Practice* (8th ed.). Mason, OH: Southwestern: Cengage Publishers.
- Kuratko, D. F. and Audretsch, D. B. (2009). Strategic Entrepreneurship: Exploring Different Perspectives of an Emerging Concept. *Entrepreneurship: Theory and Practice*, 33(1), 1-17.
- Kuratko, D. F. and Hodgetts, R. M. (2004). *Entrepreneurship: Theory, Process and Practice* (6th ed.). Mason, OH: Thompson South-Western.
- Kuratko, D. F., Hornsby, J. S. and Goldsby, M. G. (2002). Sustaining Corporate Entrepreneurship: A Proposed Model of Perceived Implementation/Outcome Comparisons at the Organizations and Individual Levels. *Academy of Management Conference*.

- Kuratko, D. F., Hornsby, J. S., Naffziger, D. W. and Montagno, R. V. (1993). Implementing Entrepreneurial Thinking in Established Organizations. *Advanced Management Journal*, 58(1), 28-39.
- Kuratko, D. F., Ireland, R. D., & Hornsby, J. S. (2001). Improving firm performance through entrepreneurial actions: Acordia's corporate entrepreneurship strategy. *The Academy of Management Executive*, 15(4), 60-71.
- Kvale, S. and Brinkmann, S. (2009). *Inter Views: Learning the Craft of Qualitative Research Interviewing* Los Angeles, CA: Sage.
- Laats, K., Haldma, T. and Moeller, K. (2011). Performance Measurement Patterns in Service Companies an Empirical Study on Estonian Service Companies. *Baltic Journal of Management*, 6(3), 357-377.
- Lambert, Douglas, M., James, R. S. and Lisa, M. E. (1998). *Fundamentals of Logistics Management*. Boston: Irwin/McGraw-Hill.
- Lau, C. M. (2011). Team and organizational resources, strategic orientations, and firm performance in a transitional economy. *Journal of Business Research*. 64(12), 1344–1351.
- Lau, C., and Ngo, H. (2004). The HR system, organizational culture, and product innovation. *International business review*. 13(6), 685–703.
- Lau, H. C. W., Pang, K. and Wong, C. W. Y. (2001). Methodology for Monitoring Supply Chain Performance: A Fuzzy Logic Approach. *Logistics Information Management*, 15(4), 271-280.
- Lee, D. Y. and Tsang, E. W. K. (2001). The Effects of Entrepreneurial Personality, Background and Network Activities on Venture Growth. *Journal of Management Studies*, 38, 583-602.
- Lee, J. (2008). Effects of leadership and leader-member exchange on innovativeness. *Journal of Managerial Psychology*. 23(6), 670–687.
- Lee, J., and Roh, J. J. (2012). Revisiting corporate reputation and firm performance link. *Benchmarking: An International Journal*. 19(4), 649–664.
- Lee, S. M. and Lim, S. (2009). Entrepreneurial Orientation and the Performance of Service Business. *Service Business*, 3(1), 1-13.
- Lee, T.-S. and Tsai, H.-J. (2005). The Effects of Business Operation Mode on Market Orientation, Learning Orientation and Innovativeness. *Industrial Management and Data Systems*, 105 (3), 325-348.
- Lengnick-Hall, C.A. (1992). Innovation and competitive advantage: What we know and what we need to learn. *Journal of Management*. 18(2), 399-429.
- Li, Z., Crook, J., and Andreeva, G. (2014). Chinese companies distress prediction: an application of data envelopment analysis. *Journal of the Operational Research Society*. 65(3), 466–479.
- Lieberman, M. and Montgomery, D. (1988). First-Mover Advantages. *Strategic Management Journal*, 9, 41-58.
- Light, D. (1998). Performance Measurement: Investors' Balanced Scorecards. *Harvard Business Review*, 76(4), 17-20.
- Lin, T. T., Lee, C. C. and Chang, F. T. (2010). A Performance Management on Automobile Dealers with Applying Data Envelopment Analysis *IEEE*

*International Conference on Industrial Engineering and Engineering Management*, Macao, China.

- Liu, J., Ding, F. and Lall, V. (2000). Using Data Envelopment Analysis to Compare Suppliers for Supplier Selection and Performance Improvement. *Supply Chain Management: An International Journal*, 5(3), 143-150.
- Lopez-Fernandez, O. and Molina-Azorín, J. F. (2011). The Use of Mixed Methods Research in Interdisciplinary Educational Journals. *International Journal of Multiple Research Approaches*, 5(2), 269-283.
- Luke, B. and Verreyne, M. L. (2006). Exploring Strategic Entrepreneurship in the Public Sector. *Qualitative Research in Accounting and Management*, 3(1), 4-26.
- Lumpkin, G. T. and Dess, G. G. (1996). Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance. *The Academy of Management Review*, 21(1), 135-172.
- Lumpkin, G. T. and Dess, G. G. (2001). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle. *Journal of Business Venturing*, 16, 429-451.
- Lumpkin, G. T. and Dess, G. G. (2005). The Role of Entrepreneurial Orientation in Stimulating Effective Corporate Entrepreneurship. *Academy of Management Executive*, 19(1), 147-156.
- Lumpkin, G. T., Cogliser, C. C. and Schneider, D. R. (2009). Understanding and Measuring Autonomy: An Entrepreneurial Orientation Perspective. *Entrepreneurship: Theory and Practice*, 33(1), 47-69.
- Lunenburg, F. C. (2011). Motivating by enriching jobs to make them more interesting and challenging. *International journal of management, business, and administration*.15(1).
- Mac Naughton, G., Rolfe, S. A. and Siraj-Blatchford, I. (2001). *Doing Early Childhood Research: International Perspectives on Theory and Practice*. Australia: Allen & Unwin.
- Mackenzie, N. and Knipe, S. (2006). Research Dilemmas: Paradigms, Methods and Methodology. *Issues in Educational Research*, 16(2).
- MacMillan, I. C. (1987). New Business Development: A Challenge for Transformational Leadership. *Human Resource Management*, 26(4), 439-454.
- MacMillan, I. C. and Day, D. L. (1987). Corporate Ventures into Industrial Markets: Dynamics of Aggressive Entry. *Journal of Business Venturing*, 2(1), 29-39.
- Malakate, A., Andriopoulos, C., and Gotsi, M. (2007). Assessing job candidates' creativity: Propositions and future research directions. *Creativity and Innovation Management*, 16(3), 307-316.
- Mambula, C. J. and Sawyer, F. E. (2004). Acts of Entrepreneurial Creativity for Business Growth and Survival in a Constrained Economy: Case Study of a Small Manufacturing Firm (Smf). *International Journal of Social Economics*, 31(1-2), 30-55.
- Mann, F. C., Indik, B. P. and Vroom, V. H. (1963). *The Productivity of Work Groups*. MI: University of Michigan.

- Martin, W. L. and Lumpkin, G. T. (2003). From Entrepreneurial Orientation to “Family Orientation:” Generational Differences in the Management of Family Businesses. *Frontiers of Entrepreneurship Research*, 309–321.
- Martín-Rojas, R., García-Morales, V. J. and García-Sánchez, E. (2011). The Influence on Corporate Entrepreneurship of Technological Variables. *Industrial Management and Data Systems*, 111(7), 984-1005.
- Maxfield, M. G. and Babbie, E. R. (2011). *Basics of Research Methods for Criminal Justice and Criminology* (3rd ed.). Belmont, CA: Cengage Learning.
- McAdam, R. and Bailie, B. (2002). Business Performance Measures and Alignment Impact on Strategy: The Role of Business Improvement Models. *International Journal of Operations and Production Management*, 22(9-10), 972-996.
- McClelland, D. C. (1960). *The Achieving Society*. Princeton, NJ: Van Nostrand.
- McGrath, R. M. and MacMillan, I. C. (2000). *The Entrepreneurial Mindset*. Boston, MA: Harvard Business School Press.
- McMullen, J. S. and Shepherd, D. A. (2006). Entrepreneurial Action and the Role of Uncertainty in the Theory of the Entrepreneur. *Academy of Management Review*, 31, 132-152.
- Meas, J. (2003). The Search for Corporate Entrepreneurship: A Clarification of the Concept and Its Measures.
- Mendez, D., Narasimhan, R. and Talluri, S. (2001, 2001 Summer). Supplier Evaluation and Rationalization Via Data Envelopment Analysis: An Empirical Examination. *Journal of Supply Chain Management*, 37, 28.
- Meng, W., Zhang, D., Qi, L. and Liu, W. (2008). Two-Level DEA Approaches in Research Evaluation. *Omega*, 36(6), 950-957.
- Menguc, B. and Auh, S. (2010). Development and Return on Execution of Product Innovation Capabilities: The Role of Organizational Structure. *Industrial Marketing Management*, 39(5), 820-831.
- Merrifield, D. B. (1993). Intrapreneurial Corporate Renewal. *Journal of Business Venturing*, 8(5), 383-389.
- Messeghem, K. (2003). Strategic entrepreneurship and managerial activities in SMEs. *International Small Business Journal*. 21(2). 197-212.
- Miles, G., Heppard, K. A., Miles, R. E. and Snow, C. C. (2000). Entrepreneurial Strategies: The Critical Role of Top Management. In G. D. Meyer and K. A. Heppard (Eds.), *Entrepreneurship as Strategy. Competing on the Entrepreneurial Edge*. Thousand Oaks: Sage.
- Miles, M. B. and Covin, J. G. (2002). Exploring the Practice of Corporate Venturing: Some Common Forms and Their Organizational Implications. *Entrepreneurship: Theory and Practice*, 26(3), 21-40.
- Miles, M. B., and Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.) Thousand Oaks CA: Sage.
- Milkovich, G. and Newman, J. (2004). *Compensation* (8th ed.). New York, NY: McGraw-Hill/Irwin.
- Miller, D. (1983). The Correlates of Entrepreneurship in Three Types of Firms. *Management Science*, 29(7), 770-791.

- Miller, D. and Friesen, P. H. (1978). Archetypes of Strategy Formulation. *Management Science*, 24(9), 921-933.
- Mirabito, M., and Layng, T. (2013). Stimulating Innovation (or Making Innovation Meaningful Again). *Handbook on innovation in learning*. Center on Innovations in Learning, Temple University, Philadelphia, PA.
- Moghimi, S. M. (2007). The Relationship between Environmental Factors and Organizational Entrepreneurship in Non-Governmental Organizations (Ngos) in Iran. *Iranian Journal of Management Studies*, 1(1), 39-55.
- MohebAlizade, H. and Faez, F. (2009). Multi objective approach to measuring suppliers using MCDEA. *Journal of Industrial Engineering* (Persian journal). 43(1), 67-82.
- Molokwu, V. B., Barreria, J., and Urban, B. (2013). Entrepreneurial orientation and corporate governance structures at the firm level in the South African oil and gas industry. *SA Journal of Human Resource Management*. 11(1), 1–15.
- Moosakhani, Khoram Dabiri, M. and Sarfarazi, M. (2011). Corporate Entrepreneurship Development Paradigm, Essential for Organizations in the Third Millennium. *1st International Conference on Management, Innovation and Entrepreneurship* Shiraz-Iran.
- Morash, E. A. (2001). Supply Chain Strategies, Capabilities and Performance. *Transportation Journal*, 41(1), 37-54.
- Morris, M. H. (1998). *Entrepreneurial Intensity: Sustainable Advantages for Individuals, Organizations, and Societies*. Westport, CT: Quorum Books.
- Morris, M. H. and Kuratko, D. F. (2002a). *Corporate Entrepreneurship*. New York: Harcourt College Publishers.
- Morris, M. H. and Kuratko, D. F. (2002b). *Corporate Entrepreneurship: Entrepreneurial Development within Organisations*. London: Thompson South Western.
- Morris, M. H. and Lewis, P. S. (1991). Entrepreneurship as a Significant Factor in Societal Quality of Life. *Journal of Business Research*, 23(1), 21-36.
- Morris, M. H., Kuratko, D. F. and Covin, J. G. (2008). *Corporate Entrepreneurship and Innovation*. Cincinnati, OH Thomson/SouthWestern Publishers.
- Morrison, A., Rimmington, M. and Williams, C. (1999). Entrepreneurship in the Hospitality. *Tourism and Leisure Industry*.
- Morse, J. M. (1995). The Significance of Saturation. *Qualitative Health Research*, 5(2), 147-149.
- Mudambi, R., and Swift, T. (2011). Proactive R&D management and firm growth: A punctuated equilibrium model. *Research Policy*. 40(3), 429–440.
- Naman, J. and Slevin, D. (1993). Entrepreneurship and the Concept of Fit: A Model and Empirical Tests. *Strategic Management Journal*, 14, 137-153.
- Nasution, H. N., Mavondo, F. T., Matanda, M. J. and Ndubisi, N. O. (2011). Entrepreneurship: Its Relationship with Market Orientation and Learning Orientation and as Antecedents to Innovation and Customer Value. *Industrial Marketing Management*, 40(3), 336-345.

- Nayager, T., and Van Vuuren, J. J. (2005). Sabinet. *South African Journal of Economic and Management Sciences= Suid-Afrikaanse Tydskrif vir Ekonomiese en Bestuurswetenskappe*. 8(1), 29–38.
- Neely, A., Gregory, M. and Platts, K. (1995). Performance Measurement System Design a Literature Review and Research Agenda. *International Journal of Operations and Production Management* 15(4), 80-116.
- Neider, L. (1987). A Preliminary Investigation of Female Entrepreneurs in Florida. *Journal of Small Business Management*, 25 (3), 22-29.
- Newby, P. (2010). *Research Methods for Education*. Pearson Education.
- Newman, I. and Benz, C. R. (1998). *Qualitative-Quantitative Research Methodology: Exploring the Interactive Continuum*. Carbondale, IL: Southern Illinois University Press.
- Nielsen, R. P., Peters, M. P. and Hisrich, R. D. (1985). Intrapreneurship Strategy for Internal Markets. *Strategic Management Journal*, 6(2), 181-189.
- Nieman, G. and Pretorius, M. (2004). *Managing Growth: A Guide for Entrepreneurs*. Juta: Cape Town Co. Ltd.
- Nordqvist, M., Habbershon, T. G. and Melin, L. (2008). Transgenerational Entrepreneurship: Exploring Eo in Family Firms. In H. Landström *et al.* (Eds.), *Entrepreneurship, Sustainable Growth and Performance: Frontiers in European Entrepreneurship Research* (pp. 93-116). Cheltenham: Edward Elgar.
- Norusis, M.J. (2004). *SPSS 12.0 guide to data analysis*. Upper Saddle River, NJ: Prentice Hall.
- O'Reilly, C. and Tushman, M.L. (1997), *Using culture for strategic advantage: promoting innovation through social control*, in Tushman, M.L. and Anderson, P. (Eds), *Managing Strategic Innovation and Change: A Collection of Readings*, Oxford University Press, New York.
- Odeck, J. and Alkadi, A. (2001). Evaluating Efficiency in the Norwegian Bus Industry Using Data Envelopment Analysis. *Transportation*, 28(3), 211-232.
- O'Leary, Z. (2004). *The Essential Guide to Doing Research*. London: Sage.
- Omidi A (2008). *Investigating the Relation between Organizational Structure and Entrepreneurship of PE Staff Managers*. MA Thesis. Tehran University.
- Oosterhof, A. (2001). *Classroom applications of educational measurement*. Prentice-Hall, Inc., Upper Saddle River, New Jersey 07458.
- Oral, M., and Yolalan, R. (1990). An empirical study on measuring operating efficiency and profitability of bank branches. *European Journal of Operational Research*.46(3), 282–294.
- Otto, A. and Kotzab, H. (2003). Does Supply Chain Management Really Pay? Six Perspectives to Measure the Performance of Managing a Supply Chain. *European Journal of Operational Research*, 144, 306-320.
- Palich, L. and Bagby, D. (1995). Using Cognitive Theory to Explain Entrepreneurial Risk-Taking: Challenging Conventional Wisdom. *Journal of Business Venturing*, 10, 425-438.



- Pallant, J. (2011). *SPSS survival manual: a step by step guide to data analysis using SPSS*. Crows Nest. New South Wales: Allen & Unwin.
- Patton, M. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Paulsen, N., Callan, V. J., Ayoko, O., and Saunders, D. (2013). Transformational leadership and innovation in an R&D organization experiencing major change. *Journal of Organizational Change Management*, 26(3), 595–610.
- Pearce II, J. A., Kramer, T. R. and Robbins, D. K. (1997). Effects of Managers' Entrepreneurial Behavior on Subordinates. *Journal of Business Venturing*, 12(2), 147-160.
- Peterson, R. and Berger, D. (1972). Entrepreneurship in Organizations. *Administrative Science Quarterly*, 16, 97-107.
- Phan, P. H., Wright, M., Ucbasaran, D. and Tan, W. L. (2009). Corporate Entrepreneurship: Current Research and Future Directions. *Journal of business venturing*, 24, 197-205.
- Pinchot, G. (1984). *Intrapreneuring, or Why You Don`T Have to Leave the Corporation to Become an Entrepreneur*. New York: Harper & Row.
- Pinchot, G. (1985). *Intrapreneurship*. New York: Harper & Row Publishers.
- Pinchot, G., (2000). *Intrapreneuring*. Warner Books. New York.
- Pinchot, G., and Pellman, R. (1999). *Intrapreneuring in action: A handbook for business innovation*. Berrett-Koehler Publishers.
- Pinya, S. and Mark, S. (2004). Packaging and Purchase Decisions: An Exploratory Study on the Impact of Involvement Level and Time Pressure. *British Food Journal*, 106 (8), 607-628.
- Piore, M. J. and Sabel, C. F. (1984). *The Second Industrial Divide: Possibility for Prosperity*. New York, NY: Basic Books.
- Pittaway, L. (2001). Corporate Enterprise: A New Reality for Hospitality Organizations? *Hospitality Management*, 20, 379-393.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P., (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*. 88 (5), 879–903.
- Polit, D. F., Beck, C. T. and Hungler, B. P. (2001). *Essentials of Nursing Research: Methods, Appraisal and Utilization* (5th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Pooya, A. and Moradi, A. H. (2011). Transformational Leadership and Innovation Manufacturing Objective. *International Conference on Human Resource Development*, Johor, Malaysia.
- Porter, M. E. (1980). *Competitive Strategy*. New York, NY: Free Press.
- Premachandra IM, Bhabra GS and Sueyoshi T (2009). DEA as a tool for bankruptcy assessment: A comparative study with logistic regression technique. *European Journal of Operational Research*. 193(2), 412–424.
- Prokopenko, J. and North, K. (1996). *Productivity and Quality Management: A Modular Programme*. Geneva: International Labour Office.

- Prokopenko, J. and Palvin, I. (1991). Entrepreneurship Development in Public Enterprises. *Management development series*, 29.
- Puccio, G.J., Firestien, R.L., Coyle, C., and Masucci, C. (2006). A review of the effectiveness of CPS training: A focus on workplace issues. *Creativity and Innovation Management*. 15, 19-33.
- Qu, S. Q. and Dumay, J. (2011). The Qualitative Research Interview. *Qualitative Research in Accounting and Management*, 8(3), 238-264.
- Rahmati, M. H. and Yousefi, S. R. (2011). Demand Estimation for the Iranian Automobile Industry. *Quarterly Review of Economics and Finance*.
- Ramanathan, R. (2007). Supplier Selection Problem: Integrating DEA with the Approaches of Total Cost of Ownership and AHP. *Supply Chain Management*, 12(4), 258-261.
- Rasem, K., N and Hassan, M. K. (2011). Saudi Arabia's Economic Development: Entrepreneurship as a Strategy. *International Journal of Islamic and Middle Eastern Finance and Management*, 4(1), 52-73.
- Rauch, A., Wiklund, J., Lumpkin, G. T. and Frese, M. (2009). Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future. *Entrepreneurship: Theory and Practice*, 33(3), 761-787.
- Razmi, J. and Bamdad, Sh. (2004). Application of DEA in Evaluating Suppliers. *1 St Conference of Logistic and Supply Chain*, Iran.
- Reed, G., Jim, S. and Vicky, S. (2004). Information Technology: Changing the Face of Automotive Retailing? *International Journal of Retail & Distribution Management*, 32(1), 19-32.
- Rezaei, J., Ortt, R. and Scholten, V. (2012). Measuring Entrepreneurship: Expert-Based Vs. Data-Based Methodologies. *Expert Syst. Appl.*, 39(4), 4063-4074.
- Rigwema, H. and Venter, R. (2004). *Advanced Entrepreneurship*. Cape Town: Oxford.
- Rindova, V.P., Williamson, I.O., Petkova, A.P., Sever, J.M. (2005). Being Good or Being Known: An Empirical Examination of the Dimensions, Antecedents, and Consequences of Organizational Reputation. *Academy of Management Journal*. 48(6), 1033-1049.
- Robbins, S. P., Coulter, M. and Stuart-Kotze, R. (2003). *Management* (7th ed.). Toronto: Prentice-Hall.
- Roberts, K., Miles, R. E. and Blankenship, L. V. (1968). Organizational Leadership, Situation, and Productivity: A Comparative Analysis. *Academy of Management Journal*, 11, 401-414.
- Robinson, J. P., Shaver, P. R. and Wrightsman, L. S. (1991). Criteria for Scale Selection and Evaluation. In J. P. Robinson *et al.* (Eds.), *Measures of Personality and Social Psychological Attitudes* (pp. 1-16). San Diego, CA: Academic Press.
- Robinson, P., and Hunt, H. (1988). Autonomy as a motivational force in small business and entrepreneurship. *SMALL BUSINESS INSTITUTE DIRECTOR'S ASSOCIATION (SBIDA)*.

- Rodriguez, B. M. and Martí J. M. V. (2006). The Region's Intellectual Capital Benchmarking System: Enabling Economic Growth through Evaluation. *Journal of Knowledge Management*, 10(5), 41 - 54.
- Roffe, I. (1999). Innovation and creativity in organisations: a review of the implications for training and development. *Journal of European Industrial Training*. 23, 224-237.
- Romero-Martínez, A. M., Fernández-Rodríguez, Z., and Vázquez-Inchausti, E. (2010). Exploring corporate entrepreneurship in privatized firms. *Journal of World Business*. 45(1), 2–8.
- Ronstadt, R. (1985). *Entrepreneurship: Texts, Cases & Notes*. Dover, Massachusetts: Lord Publishing.
- Ross, A., Buffa, F. P., Dröge, C. and Carrington, D. (2006). Supplier Evaluation in a Dyadic Relationship. *Journal of Business Logistics*, 27(2), 75-101.
- Rowe, W. G. (2001). Creating Wealth in Organizations: The Role of Strategic Leadership. *Academy of Management Executive*, 15(1), 81-94.
- Rozell, E. J., Meyer, K. E., Scroggins, W. A. and Guo, A. (2011). Perceptions of the Characteristics of Successful Entrepreneurs: An Empirical Study in China. *International Journal of Management*, 28(4), 60-71.
- Ruef, M. and Lounsbury, M. (2007). Introduction: The Sociology of Entrepreneurship. *The Sociology of Entrepreneurship*. 25, 1-29.
- Ruekert, Robert W. (1992). Developing a Market Orientation: An Organizational Strategy Perspective. *International Journal of Research in Marketing*. 9, 225-245.
- Rule, E. G. and Irwin, D. W. (1994). Fostering Entrepreneurship. In D. F. Jennings (Ed.), *Multiple Perspectives of Entrepreneurship: Text, Readings and Cases*. Cincinnati: South Western.
- Rundh, B. (2011). Linking Flexibility and Entrepreneurship to the Performances of Smes in Export Markets: Ims. *Journal of Manufacturing Technology Management*, 22(3).
- Russell, R., and Russell, C. (1992). An examination of the effects of organizational norms, organizational structure, and environmental uncertainty on entrepreneurial strategy. *Journal of Management*. 18(4), 639–656.
- Ruzzier, M., Antoncic, B. and Konecnik, M. (2006). The Resource-Based Approach to the Internationalisation of Smes: Differences in Resource Bundles between Internationalised and Non-Internationalised Companies. *Zagreb International Review of Economics and Business*, 9(2), 95-116.
- Sadeghian, R., Karimi, A. and Morakkabi, A.S. (2010). Measuring Performance of Suppliers Using DEA and Reduction Strategy. *5th International Conference on Strategic Management*. Iran.
- Saen, R. F. (2007). Suppliers Selection in the Presence of Both Cardinal and Ordinal Data. *European Journal of Operational Research*, 183(2), 741-747.
- Saen, R. F., Memariani, A. and Hosseinzadeh Lotfi, F. (2005). Determining Relative Efficiency of Slightly Non-Homogeneous Decision Making Units by Data

- Envelopment Analysis: A Case Study in Irost. *Applied Mathematics and Computation*, 165(2), 313-328.
- Sandelowski, M. (1995). Sample Size in Qualitative Research. *Research in Nursing and Health*, 18(2), 179-183.
- Sarlak, M. A. and Mirzaei, H. (2005). A Review of Organizational Epistemology: Evolution Process, Schools and Management Applications. *Journal of Peyke Noor, Payame Noor University* 21-35.
- Sarlak, M. A., Hastiani, A. A. b., Dehkordi, L. F. and Ghorbani, A. (2009). Investigating on Electronic Commerce Acceptance Barriers in Dried Fruits Exporting Companies of Iran. *World Applied Sciences Journal*, 6(6), 818-824.
- Sathe, V. (1985). Managing an Entrepreneurial Dilemma: Nurturing Entrepreneurship and Control in Large Corporations. *Frontiers of Entrepreneurship Research*
- Sathe, V. (2003). *Corporate Entrepreneurship: Top Managers and New Business Creation* (1st ed.). Cambridge: Cambridge University.
- Saunders, M., Lewis, P. and Thornhill, A. (1997). *Research Methods for Business Students*. London: Pitman Publishing.
- Saunders, M., Lewis, P. and Thornhill, A. (2003). *Research Methods for Business Students* (3rd ed.). Harlow: Financial Times Prentice Hall.
- Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research methods for business students, 5th ed.*, Harlow, Pearson Education.
- Schuler, R. S. (1986). Fostering and Facilitating Entrepreneurship in Organizations: Implications for Organization Structure and Human Resource Management Practices. *Human Resource Management*, 24(5), 607.
- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Schumpeter, J. A. (1947). The Creative Response in Economic History. *Journal of Economic History*, 2(2), 149-159.
- Sciascia, S., Naldi, L. and Hunter, E. (2006). Market orientation as a determinant of entrepreneurship: an empirical investigation on SMEs. *Entrepreneurship Management*. 2, 21-38.
- Scott, D. W. (2004). Personality, Attitude and Leader Influences on Divergent Thinking. *European Journal of Innovative Management*, 7(3), 187-204.
- Scott, G., Leritz, L.E., and Mumford, M.D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal*. 16, 361-388.
- Sean, R. F. (2006). A Decision Model for Selecting Technology Suppliers in the Presence of Nondiscretionary Factors. *Applied Mathematics and Computation*, 181(2), 1609-1615.
- Sebora, T. C. and Theerapatvong, T. (2010). Corporate Entrepreneurship: A Test of External and Internal Influences on Managers' Idea Generation, Risk Taking, and Proactiveness. *International Entrepreneurship and Management Journal*, 6(3), 331-350.
- Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach* (4th ed.). New York, NY: John Wiley & Sons.

- Sekaran, U. and Bougie, R. (2010). *Research Methods for Business: A Skill-Building Approach* (5th ed.). New York, NY: John Wiley & Sons.
- Sexton, D. L. and Bowman-Upton, N. B. (1986). Validation of Personality Index: Comparative Psychological Characteristics Analysis of Female Entrepreneurs, Managers, Entrepreneurship Students, and Business Students. *Frontiers of Entrepreneurship*, Wellesley, Mass: Babson College.
- Sexton, D. L. and H. Landström (2000). Remaining issues and research suggestions. In D. L. Sexton and H. Landström (Eds.), *The Blackwell Handbook of Entrepreneurship*. Blackwell, Oxford, UK, 435-443.
- Seydel, J. (2006). Data Envelopment Analysis for Decision Support. *Industrial Management and Data Systems*, 106(1), 81-95.
- Shafer, S. and Bryd, T. (2000). A Framework for Measuring the Efficiency of Organizational Investments in Information Technology Using Data Envelopment Analysis. *omega*, 28, 125-141.
- Shah, J. and Singh, N. (2001). Benchmarking Internal Supply Chain Performance: Development of a Framework. *Journal of Supply Chain Management*, 37(1), 37-47.
- Shahroodi, K. and Tadris, H. M. (2011). Presenting Mathematical Model for Supplier Selection Using DEA and Total Cost of Ownership. *Journal of Operational Research and Its Applications* (Persian journal). 8(3), 71-81.
- Shane, S. and Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review*, 25, 217-226.
- Shapiro, Benson P.(1988). What the Hell Is Market Orientation. *Harvard Business Review*. 66, 119–125.
- Sharma, P. and Chrisman, J. J. (1999). Toward a Reconciliation of the Definitional Issues in the Field of Corporate Entrepreneurship. *Entrepreneurship Theory and Practice* 23(3), 11-27.
- Shebl, N. A., Franklin, B. D., and Barber, N. (2012). Failure mode and effects analysis outputs: are they valid?. *BMC health services research*. 12(1), 150.
- Shepherd, C. and Günter, H. (2006). Measuring Supply Chain Performance: Current Research and Future Directions. *International Journal of Productivity and Performance Management*, 55(3-4), 242-258.
- Sieger, P. (2011). *Long-Term Success of Family Firms: Investigating Specific Aspects of Firm-Level Entrepreneurship and Individual-Level Antecedents* University of St.Gallen, Germany.
- Simatupang, T. M. and Sridharan, R. (2005). The Collaboration Index: A Measure for Supply Chain Collaboration. *International Journal of Physical Distribution and Logistics Management*, 35(1), 44-62.
- Simler, R. (2003). How We Went Digital without a Strategy. In H. Mintzberg *et al.* (Eds.), *The Strategy Process, Concepts, Context, Cases* (4th ed.). Essex: Pearson Educational.
- Simpson, G. (2005). Programmatic Efficiency Comparisons between Unequally Sized Groups of DMUs in DEA. *Journal of the Operational Research Society*. 56(12), 1431–1438.

- Sinetar, M. (1994). Entrepreneurs, Chaos and Creativity: Can Creative People Really Survive Large Company Structure. In D. F. Jennings (Ed.), *Multiple Perspectives of Entrepreneurship: Texts, Readings, and Cases*. Cincinnati: South Western.
- Sink, D. S. (1985). *Productivity Management: Planning, Measurement, and Evaluation, Control, and Improvement*. New York, NY: John Wiley & Sons.
- Slater, S. F., and Narver, J. C. (1998). Research notes and communications customer-led and market-oriented: Let's not confuse the two. *Strategic Management Journal*, 19(10), 1001-1006.
- Slevin, D. P. and Covin, J. G. (1990). Juggling Entrepreneurial Style and Organizational Structure - How to Get Your Act Together. *Sloan Management Review*, 31(2), 43-53.
- Smith, J. K. (1988). The Evaluator/Researcher as Person vs. the Person as Evaluator/Researcher, *Educational Researcher*, 17(2): 18-23.
- Smith, M. (1998). *Social Science in Question*. London: Sage.
- Spendolini, M. J. (1992). *The benchmarking book*. New York, NY: Amacom.
- Spinelli, S. and Hunt, J. (2000). Leadership and Entrepreneurial Behavior in the Next Generation of Self-Described Family Owned Businesses. *Frontiers of Entrepreneurial Research*.
- Sprigg, C. A., Jackson, P. R. and Parker, S. K. (2000). Production Teamworking: The Importance of Interdependence and Autonomy for Employee Strain and Satisfaction. *Human Relations*, 53(11), 1519-1543.
- Stambaugh, J. E. Y. A. A. J. (2011). Before the Attack: A Typology of Strategies for Competitive Aggressiveness. *Journal of Management Policy & Practice*. 12(1), 49-63.
- Stefanou, S. (2009). A Dynamic Characterization of Efficiency. *Agricultural Economics Review*, 10.
- Stevenson and Jarillo, J. (1990). A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal*, 11(4), 17-27.
- Stevenson, H. W., Stigler, J. W., Lee, S. Y., Lucker, G. W. and Kitamura, S. H., C. C. (1985). Cognitive Performance and Academic Achievement of Japanese, Chinese, and American Children. *Child Development*, 56, 718-734.
- Stevenson, H., Grousbeck, H., Roberts, M. and Bhide, A. (1999). *New Business Ventures and the Entrepreneur*. Boston. Irwin: McGraw-Hill.
- Stevenson, H.H. and Gumpert, D. (1985). The heart of entrepreneurship, *Harvard Business Review*, 63(2), 85-94.
- Stevenson, H.H., (1983). A perspective on entrepreneurship. *Harvard Business School Working Paper*. 9, 384-131.
- Stopford, J. M. and Baden-Fuller, C. W. F. (1994). Creating Corporate Entrepreneurship. *Strategic Management Journal*, 15, 521-536.
- Sufian, F. (2007). Trends in the Efficiency of Singapore's Commercial Banking Groups: A Non-Stochastic Frontier DEA Window Analysis Approach. *International Journal of Productivity and Performance Management*. 56(2), 99-136.

- Sundbo, J. (1999), "Empowerment of employees in small and medium-sized service firms", *Employee Relations*, Vol. 21 No. 2, pp. 105-27.
- Susbauer, J. C. (1973). U.S. Industrial Intracorporate Entrepreneurship Practices. *R&D Management*, 3(3), 145-150.
- Svante, Y. (2000). Industry Performance and Structural Efficiency Measures: Solutions to Problems in Firm Models. *European Journal of Operational Research*, 121(1), 164-174.
- Tabachnick, B. G. and Fidell, LS (2001). *Using multivariate statistics*. Boston Massachusetts Allyn and Bacon.
- Talebpour, M. , Gholamian, J. and Marefati, A. Presenting a Regression model of CE and organizational climate in physical education. *Research in sports science (Persian journal)*.6, 97-116.
- Talluri, S. and Narasimhan, R. (2005). A Methodology for Supply Base Optimization. *IEEE Transactions on Engineering Management*, 52(1), 130-139.
- Talluri, S. and Sarkis, J. (2002). A Model for Performance Monitoring of Suppliers. *International Journal of Production Research*, 40(16), 4257-4269.
- Talluri, S., Narasimhan, R. and Nair, A. (2006). Vendor Performance with Supply Risk: A Chance-Constrained DEA Approach. *International Journal of Production Economics*, 100(2), 212-222.
- Tan, J. (2008). Breaking the "Bamboo Curtain" and the "Glass Ceiling": The Experience of Women Entrepreneurs in High-Tech Industries in an Emerging Market. *Journal of Business Ethics*, 80, 547-564.
- Tan, K. C., Lyman, S. B. and Wisner, J. D. (2002). Supply Chain Management: A Strategic Perspective. *International Journal of Operations & Production Management*, 22(6), 614-631.
- Teijlingen, E. v. and Hundley, V. (2002). The Importance of Pilot Studies. *Nursing Standard (Royal College of Nursing (Great Britain) : 1987)*, 16(40), 33-36.
- Thompson, J. (1999). A Strategic Perspective of Entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, 5(6), 429-445.
- Thomson, N. and McNamara, P. (2001). Achieving Post-Acquisition Success: The Role of Corporate Entrepreneurship. *Long Range Planning*, 34(6), 669-697.
- Thornberry, N. (2003). Corporate Entrepreneurship: Teaching Managers to Be Entrepreneurs. *Journal of Management Development*, 22(4), 329-344.
- Ticehurst, G. W. and Veal, A. J. (2000). *Business Research Methods*. NSW (Great Britain): Longman.
- Timmons, J. A. (1999). *New Venture Creation: Entrepreneurship in the 21st Centuries* (6th edition ed.). Homewood, IL: Irwin.
- Timmons, J. A., and Spinelli, S. (2007). *New Venture Creation: Entrepreneurship for the 21st Century*. international edition (7th ed.). New York, NY.: McGraw Hill.
- Tipu, S. A. A. (2014). Employees' involvement in developing service product innovations in Islamic banks: An extension of a concurrent staged model. *International Journal of Commerce and Management*, 24(1), 85-108. Emerald Group Publishing Limited.

- Toloo, M. and Nalchigar, S. (2011). A New DEA Method for Supplier Selection in Presence of Both Cardinal and Ordinal Data. *Expert Systems with Applications*, 38(12), 14726-14731.
- Torgersen, A. M., Forsund, F. R. and Kittelsen, S. A. C. (1996). Slack-Adjusted Efficiency Measures and Ranking of Efficient Units. *Journal of Productivity Analysis*, 7(4), 379-398.
- Trochim, W. M. (2000). *The Research Methods Knowledge Base*. Cincinnati, OH: Atomic Dog Publishing.
- Tulkens, H. and van den Eeckaut, P. (1995). Nonparametric Efficiency, Progress and Regress Measures for Panel-Data: Methodological Aspects. *European Journal of Operational Research*, 80(3), 474-499.
- Turker, D. and Selcuk, S. S. (2009). Which Factors Affect Entrepreneurial Intention of University Students? *Journal of European Industrial Training*, 33 (2), 142 - 159.
- Tushman, M. L. and Nadler, D. A. (1997). *Competing by Design: The Power of Organisational Architecture*. New York: Oxford University.
- Twomey, D. F. and Harris, D. L. (2000). From Strategy to Corporate Outcomes. Aligning Human Resource Management Systems with Entrepreneurial Intent. *International Journal of Commerce and Management*, 10(3).
- Ucbasaran, D., Westhead, P. and Wright, M. (2001). The Focus of the Entrepreneurial Research: Contextual and Process Issues. *Entrepreneurship: theory & practice*, 25(4), 57-80.
- Ullah, J. P. (2005). The Social Dimensions of Entrepreneurship. *Technovation*, 25(8), 939-946.
- Urabe, K., Child, J., and Kagono, T. (1988). *Innovation and management: International comparisons*. Berlin: Walter de Gruyter.
- Van de Ven, A. (1988). *Central Problems in the Management Innovation* (2nd ed.). London: HarperBusiness.
- van Hemmen, S., Urbano, D., and Alvarez, C. (2013). Charismatic leadership and entrepreneurial activity: An empirical analysis. *INNOVAR. Revista de Ciencias Administrativas y Sociales*. 23(50), 53-65.
- Vaus, D. De, and Vaus, D. de. (2001). *Research design in social research*. Sage.
- Venkatraman, N. (1989). Strategic Orientation of Business Enterprises. *The construct, dimensionality, and measurement*. *Management Science*, 35(8), 942-962.
- Von Hippel E (1988) *The Sources of Innovation*. New York: Oxford University Press.
- Wiklund J and Shepherd D (2003) Aspiring for and achieving growth: The moderating role of resources and opportunities. *Journal of Management Studies* 40(8): 1919–1941.
- Vora, D., Vora, J., and Polley, D. (2012). Applying entrepreneurial orientation to a medium sized firm. *International Journal of Entrepreneurial Behaviour & Research*. 18(3), 352–379.
- Wadud. Md. Abdul. (1999). *Farm efficiency in Bangladesh*. Doctor of philosophy. Newcastle university.



- Wales, W.J., Gupta, V.K. and Mousa, F-T. (2013). Empirical research on entrepreneurial orientation: An assessment and suggestions for future research. *International Small Business Journal*, 31 (4), 357–383.
- Wang, J. (2010). Applying Western Organization Development in China: Lessons from a Case of Success. *Journal of European Industrial Training*, 34(1), 54-69.
- Weber, C. A. (1996). A Data Envelopment Analysis Approach to Measuring Vendor Performance. *Supply Chain Management*, 1(1), 28-39.
- Weber, C. A. and Desai, A. (1996). Determination of Paths to Vendor Market Efficiency Using Parallel Coordinates Representation: A Negotiation Tool for Buyer. *European Journal of Operational Research*, 90, 142-155.
- Weber, C. A. and Ellram, L. M. (1993). Supplier Selection Using Multiobjective Programming: A Decision Support System Approach. *International Journal of Physical Distribution and Logistics Management*, 23(2), 3-14.
- Weber, C. A., Current, J. and Desai, A. (1998). Non-Cooperative Negotiation Strategies for Vendor Selection. *European Journal of Operations Research*, 108 208-223.
- Weber, C. A., Current, J. and Desai, A. (2000). An Optimization Approach to Determining the Number of Vendors to Employ. *Supply Chain Management: An International Journal*, 5(2), 90-98.
- Wei, L. Q., and Lau, C.-M. (2005). Market orientation, HRM importance and competency: determinants of strategic HRM in Chinese firms. *The International Journal of Human Resource Management*, 16(10), 1901–1918.
- Welsch, H. P. (2004). *Entrepreneurship: The Way Ahead*. Uk: Routledge.
- Wenzel, A. M. (2012). *The entrepreneur's guide to market research*. ABC-CLIO.
- Wickham, P. A. (2004). *Strategic Entrepreneurship. A Decision-Making Approach to New Venture Creation and Management* (Third ed.). London: Pearson Education Limited.
- Wiklund, J. (1999). The Sustainability of the Entrepreneurial Orientation-Performance Relationship. *Entrepreneurship Theory and Practice*, 24(1), 37-48.
- Wiklund, J. and Shepherd, D. (2005). Entrepreneurial Orientation and Small Business Performance: A Configurational Approach. *Journal of Business Venturing*, 20(1), 71-91.
- Willebrands, D., Lammers, J. and Hartog, J. (2012). A Successful Businessman Is Not a Gambler. Risk Attitude and Business Performance among Small Enterprises in Nigeria. *Journal of Economic Psychology*, 33(2), 342-354.
- Wilson, A., Zeithaml, V., Bitner, M., and Gremler, D. (2012). *Services marketing: Integrating customer focus across the firm* (2nd ed.). McGraw Hill.
- Woldesenbet, K., Ram, M., and Jones, T. (2011). Supplying large firms: The role of entrepreneurial and dynamic capabilities in small businesses. *International Small Business Journal*, 30(5), 493–512.
- Wolfe, S. E., and Hendriks, E. (2010). Building towards water efficiency: the influence of capacity and capability on innovation adoption in the Canadian home-

- building and resale industries. *Journal of Housing and the Built Environment*. 26(1), 47–72.
- Wong, K. Y. (2005). Critical Success Factors for Implementing Knowledge Management in Small and Medium Enterprises. *Industrial Management & Data Systems*, 105(3-4), 261-279.
- Wooldridge, B., Schmid, T. and Floyd, S. (2008). A middle management perspective on strategy process: contributions, synthesis and future research. *Journal of Management*. 34, 1190–221.
- Wu, D. S. (2009). Supplier Selection: A Hybrid Model Using DEA, Decision Tree and Neural Network. *Expert Systems with Applications*, 36(5), 9105-9112.
- Wu, D. S. and Olson, D. L. (2008). A Comparison of Stochastic Dominance and Stochastic DEA for Vendor Evaluation. *International Journal of Production Research*, 46(8), 2313-2327.
- Wu, T., Shunk, D., Blackhurst, J. and Appalla, R. (2007). Aidea: A Methodology for Supplier Evaluation and Selection in a Supplier-Based Manufacturing Environment. *International Journal of Manufacturing Technology and Management*, 11(2), 174-192.
- Xu, J. P., Li, B. and Wu, D. S. (2009). Rough Data Envelopment Analysis and Its Application to Supply Chain Performance Evaluation. *International Journal of Production Economics*, 122(2), 628-638.
- Yang, C-W. (2008). The Relationships Among Leadership Styles, Entrepreneurial Orientation and Business Performance. *Managing Global Transitions*. 6, 257-275.
- Yong, W. and Poutziouris, P. (2010). Entrepreneurial Risk Taking: Empirical Evidence from Uk Family Firms. *International Journal of Entrepreneurial Behaviour & Research*, 16(5), 370-388.
- Zahra, S. A. (1991). Predictors and Financial Outcomes of Corporate Entrepreneurship: An Exploratory Study. *Journal of Business Venturing*, 6(2), 259-286.
- Zahra, S. A. (1993a). Environment, Corporate Entrepreneurship and Financial Performance: A Taxonomic Approach. *Journal of Business Venturing*, 8(4), 319-340.
- Zahra, S. A. (1993b). New Product Innovation in Established Companies: Associations with Industry Andstrategy Variables. *Entrepreneurship Theory and Practice*, 18(2), 47-69.
- Zahra, S. A. (1996). Governance, Ownership, and Corporate Entrepreneurship: The Moderating Impact of Industry Technological Opportunities. *Academy of Management Journal*, 39(6), 1713-1735.
- Zahra, S. A. (2005). Entrepreneurial Risk Taking in Family firms. *Family Business Review*, 18 (1), 23-40.
- Zahra, S. A. and Bogner, W. (2000). Technology Strategy and Software New Venture Performance: Exploring the Moderating Effect of the Competitive Environment. *Journal of Business Venturing*, 15(2), 135-173.

- Zahra, S. A. and Covin, J. G. (1995). Contextual Influences on the Corporate Entrepreneurship-Company Performance Relationship in Established Firms: A Longitudinal Analysis. *Journal of Business Venturing*, 10, 43-58.
- Zahra, S. A., and Garvis, D. M. (2000). International corporate entrepreneurship and firm performance. *Journal of Business Venturing*. 15(5-6), 469–492.
- Zahra, S. A., Ireland, R. D., Gutierrez, I. and Hitt, M. A. (2000). Privatization and Entrepreneurial Transformation: Emerging Issues and a Future Research Agenda. *Academy of Management Review*, 25(3), 509-524.
- Zahra, S. A., Jennings, D. F. and Kuratko, D. F. (1999). The Antecedents and Consequences of firm-Level Entrepreneurship: The State of the field. *Entrepreneurship Theory and Practice*, 24(2), 45-65.
- Zampetakis, L. A. and Moustakis, V. (2007). Entrepreneurial Behavior in the Greek Public Sector. *International Journal of Entrepreneurial Behavior & Research*, 13(1), 19-38.
- Zhang, Y. and Wildemuth, B. M. (2009). Qualitative Analysis of Content. In B. M. Wildemuth (Ed.), *Applications of Social Research Methods to Questions in Information and Library Science* (pp. 308-319). Portland: Libraries Unlimited.
- Zhao, F. (2005). Exploring the Synergy between Entrepreneurship and Innovation. *International Journal of Entrepreneurial Behaviour and Research*, 11(1), 25-41.
- Zhou, Y., Zhang, Y. and Montoro-Sánchez, A. (2011). Utilitarianism or Romanticism: The Effect of Rewards on Employees' Innovative Behaviour. *International Journal of Manpower*, 32(1), 81-98.
- Zikmund, W. G. (2000). *Business Research Methods*. USA: Harcourt Inc.

**APPENDIX A****SURVEY QUESTIONNAIRE**

**FACULTY OF MANAGEMENT  
UNIVERSITI TEKNOLOGI MALAYSIA**

**QUESTIONNAIRE OF A PhD RESEARCH:**

**“MEASURING EFFICIENCY OF AUTOMOTIVE PARTS SUPPLIERS FROM  
ENTREPRENEURIAL ORIENTATION  
BY USING DATA ENVELOPMENT ANALYSIS”**

**Dear Sir/ Madam:**

This questionnaire serves as part of a management Ph.D research project, which aims to measure the intensity of EO qualities and behavior in organizations. This questionnaire consists of two parts: Part A consists of 43 statements about EO-enabler factors; Part B consists of 18 statements about EO. This should take only 25 minutes of your time. The completion of this questionnaire is completely voluntary, but your co-operation would be greatly appreciated. Confidentiality will be strictly adhered to, and there will be no mention of your personal name or your organization. Thank you in advance for your participation in this study. All information will be treated as confidential and only used exclusively for the purpose of this study.

Regards

Amir Hosein Moradi Deluyi

Ph.D. candidate

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**Instruction:**

This questionnaire has two parts, Part A and B. Part A refers to constructs of EO-enabler factors, human resource, structure, politics, leadership, culture and strategy. Please, state your opinions on each item by ticking (√) one point from points 1 to 5 (*strongly agree=5, agree=4, unsure=3, disagree=2 and strongly disagree=1*). The higher the rate each participant gives to each item from one to five, the higher the entrepreneurial quality of the concept is.

Part B refers to constructs of EO. Please, state your opinions on each item by ticking (√) one point from points 1 to 5 (*strongly agree=5, agree=4, unsure=3, disagree=2 and strongly disagree=1*).

**Organizational Factors:** Human resource, Structure, Politic, Strategy.

Organizational factors include the aspects related to physical and non-human components and the organization's conditions that are bounded together via particular order, with which the structure is ruled and established. In fact, organizational factors include non-alive factors of the organization.

**Behavioral Factors:** Leadership, Culture.

The organization's behavioral factors indicating human's conduct and behavior in the organization conjoined together by specific patterns, informal interactions and behavioral norms, with which the organization's main content are established are considered as the organization's alive factors.

**Entrepreneurial orientation (EO):** EO is commonly implied as a multi-dimensional structure comprised of risk taking, innovativeness, proactiveness, autonomy and competitive aggressiveness.

**General Information****Supplier Information:**

Name of your firm:

Number of personnel (or size):

Type of products:

Years of supplier establishment:

**Part A: Organizational and Behavioral Factors (EO-enabler factors)**

List below are a series of statements that represent possible feelings that individuals might have about the firm for which the work. With respect to your own feelings about the particular supplier for which you are now working, please indicate the degree of your agreement or disagreement with each statement by checking one of the five alternatives below each statement.

1=Strongly Disagree (SD), 2=Disagree (D), 3=Somewhat (S), 4=Agree (A),  
5=Strongly Agree (SA)

<b>Part A: Organizational and Behavioral (EO-enabler) factors</b>						
<b>No</b>	<b>Statement</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
1	Our organization's compensation and reward system is value-based with unlimited earning potential for employees	1	2	3	4	5
2	The organization sets and regularly evaluates goals related to innovative, risky and proactive behaviour.	1	2	3	4	5
3	Employees are rewarded for taking calculated risks.	1	2	3	4	5
4	Our organization has clear goals, which have been mutually agreed upon by employees and management.	1	2	3	4	5
5	Employees receive recognition from the organization for innovative ideas and suggestions.	1	2	3	4	5
6	Our organization can be described as a non-bureaucratic organization.	1	2	3	4	5
7	Our organization's structure allows for resource sharing and encourages flexibility.	1	2	3	4	5
8	Our organization has flexible job designs rather than formal job descriptions.	1	2	3	4	5
9	The ideas and suggestions of lower level employees are taken seriously and valued.	1	2	3	4	5
10	Employees are allowed to performing a task in a different way.	1	2	3	4	5
11	Management allows to employees to participate in making important decisions for our organization.	1	2	3	4	5
12	In our organization, people have to follow lines of authority and skipping levels is strongly discouraged.	1	2	3	4	5
13	Employees are encouraged to manage their own work and have the flexibility to resolve problems.	1	2	3	4	5
14	Our organization has a widely held belief that innovation is an absolute necessity for the organization's future.	1	2	3	4	5
15	People in our organization are continuously encouraged to expand their capacities to achieve more.	1	2	3	4	5
16	Our organization nurtures new and expansive patterns of thinking.	1	2	3	4	5
17	We are encouraged to continually look at things in new ways.	1	2	3	4	5
18	There is a strong emphasis on teamwork in the organization.	1	2	3	4	5
19	Confidence, trust and accountability are words, which describe how management treats the employees at our organization.	1	2	3	4	5

**Part B: Entrepreneurial orientation (EO)**



20	There is continual recruitment of individual entrepreneurs into the organization.	1	2	3	4	5
21	Our leader takes calculated risks with regard to exploring and seizing growth opportunities.	1	2	3	4	5
22	Our leader can be described as charismatic.	1	2	3	4	5
23	Our senior executives solve problems by brainstorming together.	1	2	3	4	5
24	Our leader continually examines potential new market opportunities.	1	2	3	4	5
25	Our leader never appears to tire or lose enthusiasm for the organization.	1	2	3	4	5
26	Our leader has a great ability to persuade others to achieve a certain goal.	1	2	3	4	5
27	Our leader encourages open discussion with all employees.	1	2	3	4	5
28	Our leader has instilled an entrepreneurial philosophy in all employees in the organization.	1	2	3	4	5
29	Our leader can be described as visionary and flexible.	1	2	3	4	5
30	Our leader's enthusiasm rubs off on all employees within the organization.	1	2	3	4	5
31	I am able to achieve my objectives even when there are few guidelines or systems in place.	1	2	3	4	5
32	I am willing to be criticised for breaking with tradition, if this is what it takes to succeed.	1	2	3	4	5
33	My biggest successes have resulted from my refusal to give up.	1	2	3	4	5
34	I tackle problems with enthusiasm and zest.	1	2	3	4	5
35	I look for new and innovative ways to improve the way we do things.	1	2	3	4	5
36	I am excited and full of enthusiasm when new opportunities arise.	1	2	3	4	5
37	I view change as an opportunity for improvement rather than as a threat to my identity.	1	2	3	4	5
38	I like to try different approaches to things even if there is a chance I might fail.	1	2	3	4	5
39	When things go wrong I am able to bounce back very quickly.	1	2	3	4	5
40	It is better to have attempted a difficult task and failed, than not to have tackled it at all.	1	2	3	4	5
41	As we define our strategies, we are driven by our perception of opportunity. We are not constrained by the resources at (or not at) hand.	1	2	3	4	5

Below are 18 statements about entrepreneurial orientation (EO).

Please read each statement carefully and select the response for each statement that best describes how you feel about your entrepreneurial orientation. For each of the

42	Our fundamental task is to pursue opportunities we perceive as valuable and then to acquire the resources to exploit them.	1	2	3	4	5
43	Opportunities control our business strategies.	1	2	3	4	5

following questions stated below, please mark the appropriate number which is based on the following scale:

1=Strongly Disagree (SD), 2=Disagree (D), 3=Somewhat (S), 4=Agree (A), 5= Strongly Agree (SA)

We want your honest opinion.

<b>Part B: Entrepreneurial orientation (EO)</b>						
No	Statement	SD	D	S	A	SA
1	Company's emphasis on developing new products.	1	2	3	4	5
2	Our company is creative in its methods of operation.	1	2	3	4	5
3	Our company seeks out new ways to do things.	1	2	3	4	5
4	Relative to our competitors, our company has higher propensity to take risks.	1	2	3	4	5
5	Our company has shown a great deal of tolerance for high risk projects.	1	2	3	4	5
6	In general, the top managers of my firm favor a bold, aggressive posture in order to maximize the probability of exploiting potential when faced with uncertainty.	1	2	3	4	5
7	Most people in this organization are willing to take risks.	1	2	3	4	5
8	People are often encouraged to take calculated risks with new ideas around here.	1	2	3	4	5
9	Our firms implement necessary structural changes such as small, autonomous groups to stimulate new ideas.	1	2	3	4	5
10	When using autonomous work units, our firms ensure adequate coordination to minimize inefficiencies and duplication of efforts.	1	2	3	4	5
11	Our firms have a proper balance between patience and tolerance for autonomous groups and the forbearance to reduce or eliminate initiatives that are not succeeding.	1	2	3	4	5
12	Our firms foster the necessary culture, rewards, and processes to support product champions.	1	2	3	4	5

13	Typically initiates actions to which competitors then respond.	1	2	3	4	5
14	The first firm is very often to introduce new products/services operating technologies, etc.	1	2	3	4	5
15	In dealing with its competitors, my firm has a strong tendency to be ahead of other competitors in introducing novel idea or products.	1	2	3	4	5
16	Owing to the nature of the environment, bold, wide ranging acts are necessary to achieve the firm's objectives.	1	2	3	4	5
17	Typically adopts a very competitive, 'undo-the-competitor' posture.	1	2	3	4	5
18	My firm has a strong tendency to increase the market share by reducing the competitors.	1	2	3	4	5