The Relationship between Corporate Entrepreneurship and Sustainable Growth in Engineering Consultancy Companies

العلاقة بين الريادة المؤسسية و النمو المستدام في الشركات الإستشارية الهندسية

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This Thesis is submitted in Partial Fulfilment of the Requirements for the Masters Degree in Business Administration

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2015

جامعة عمان العربية
AMMAN ARAB UNIVERSITY

عمادة البحث العلمي والدراسات العليا — نموذج (٩)

تفويض

نحن الموقعون أدناه، نتعهد بمنح جامعة عمان العربية حرية التصرف في نشر محتوى الرسالة الجامعية، بحيث تعود حقوق الملكية الفكرية لرسالة الماجستير الى الجامعة وفق القوانين والأنظمة والتعليمات المتعلقة بالملكية الفكرية وبراءة الاختراع.

المشرف الرئيس (ثلاثة مقاطع)	المشرف المشارك (إن وجد) (ثلاثة مقاطع)	الطالب (ثلاثة مقاطع)
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قرار لجنة المناقشة

نوقشت هذه الرسالة و عنوانها:العلاقة بين الريادة المؤسسية و النمو المستدام في الشركات الإستشارية الهندسية ، وقد أجيزت بتاريخ ٢٠١٥/٤/١٩ .

أعضاء لجنة المناقشة			
الإسم الثلاثي		الرتبة العلمية	التوقيع
1. دكتور شوقي ناجي جواد	رئيساً/مشرفا	استاذ	
2. دكتور سمير ابو جامور	عضواً	استاذ مساعد	
3. دكتور صباح حميد اغا	عضواً	استاذ مشارك	
4.	عضوا ومشرفاً مشاركاً		

Dedications

First and foremost, I dedicate this thesis to my precious parents (Malak and Mohammad), you are the pole star of my life…the candle of inspiration….the source of love, strength and encouragement.

To my dearest sisters and brother: Maram, Mayyada, Maysoon, Shaden and Omer, who have always been and will be the shoulder I lean on.

I would like sincerely give dedication and thankfulness to my supervisor, Professor Shawqi Jawad for all his support, guidance, valuable comments and help through this unique journey.

I would like to extend my deep gratitude and respect to every members in Amman Arab University, you will always have a remarkable place in my memory.

To all my friends, who have provide support and encouragement in the moments of frustration and uncertainty.

Also this thesis is dedicated to all those who believe that they can add value, accept the challenge and make a step forward….

Finally, to my warm homeland …to my beloved Jordan …from one of your daughters.

Thank you all

Jomanah Al Btoush

Abbreviations List

AE/BC:	Architects/ Engineers Business Council
CEO:	Chief Executive Officer
FIDIC:	International Federation of Consulting Engineers
HOD:	Head of Department
HOS:	Head of Section
HRM:	Human Resources Management
JEA:	Jordan Engineers Association
KSA:	Kingdom of Saudi Arabia
MD:	Managing Director
Msc:	Master of Science
OD:	Operations Director
OM:	Operations Manager
Phd:	Doctor of Philosophy
R&D:	Research and Development
TL:	Team Leader
VIF:	Variance Inflation Factor
UAE:	United Arab Emirates
UN:	United Nations
USA:	United State of America

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The Relationship between Corporate Entrepreneurship and Sustainable Growth in Engineering Consultancy Companies

Prepared by: Jomanah Mohammad Al Btoush

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Abstract

The aim of this research is to investigate the relationship between corporate entrepreneurship and sustainable growth in engineering consultancy companies in Jordan. Different dimensions were considered in investigating corporate entrepreneurship including risk-taking, opportunities generation, innovation, proactiveness and autonomy. In addition, different sustainable growth elements were considered including markets growth, branches growth, offering new services and awarding new projects.

Population for this research is represented by the 33 local engineering consultancy companies under the coverage of the Architects/Engineers Business Council, which is considered as a private and not-for-profit professional association of leading architectural and engineering consultancy companies. The sampling unit consists of supervisory management level for these companies, covering CEOs; managing directors, administrative and technical assistants; operations directors, heads of departments, heads of sections; and team leaders.

Two sources of information were used. The primary source is based on developing a questionnaire and secondary sources were based on previously conducted researches and studies. .

Out of 217 distributed questionnaires, 155 were collected and 152 questionnaires were used in statistical analysis. Different statistical methods were used in the analysis process including: measures of central tendency, measures of dispersion, multiple regression analysis, ANOVA test, Cronbachs' alpha, multicollinearity, T-test and F-test.

The results show that:

- There is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and sustainable growth (market growth, branches growth, offering new services and awarding new projects);
- There is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and market growth;
- There is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and branches growth;
- There is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and offering new services; and

- There is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and awarding new projects.

Main recommendations include the need to: investigate corporate entrepreneurship in different sectors, conduct future research to investigate external and internal factors that affect corporate entrepreneurship, conduct future research to investigate broad corporate entrepreneurship dimensions and conduct future research to investigate broad sustainable growth elements.

العلاقة بين الريادة المؤسسية و النمو المستدام في الشركات الإستشارية الهندسية

إعداد: جمانه محمد البطوش

إشراف:الأستاذ الدكتور شوقي ناجي جواد

الملخّص

يهدف هذا البحث إلى تحري العلاقة بين الريادة المؤسسية والنمو المستدام في الشركات الاستشارية الهندسية في الأردن. تم إعتماد مجموعة من الأبعاد لدراسة الريادة المؤسسية، تشمل كلاً من المجازفة و توليد الفرص و الإبداع و الاستباقية و الاستقلالية. كما تم إعتماد مجموعة من العناصر المختلفة لدراسة النمو المستدام، تشمل كلاً من نمو الأسواق ونمو الفروع وتقديم خدمات جديدة وكسب مشاريع جديدة.

مجتمع الدراسة الخاص بهذا البحث يتكون من ٣٣ شركة إستشارية هندسية محلية تحت مظلة منتدى الاعمال الهندسي، و الذي يعتبر جمعية مهنية خاصة وغير ربحية تتكون من الشركات الرائدة في مجال الاستشارات المعمارية والهندسية. تتكون وحدة المعاينة من مستوى الإدارة الإشرافية لهذه الشركات، والتي تغطي كلاً من الرؤساء التنفيذيين و المدراء العامين و المساعدين للشؤون الإدارية و الفنية و مدراء العمليات و ورؤساء الإدارات ورؤساء الأقسام و قادة الفرق.

تم إستخدام مصدرين من المعلومات تشمل المصادر الرئيسية و المتمثلة بإعداد إستبانة والمصادر الثانوية و المتمثلة بالأبحاث و الدراسات السابقة.

من ٢١٧ استبيانة موزعة تم جمع ١٥٥، و من ثم تم اعتماد ١٥٢ لغايات التحليل الإحصائي. استخدمت مجموعة من الأساليب الإحصائية المختلفة في عملية التحليل بما في ذلك: مقاييس النزعة المركزية و التشتت و الانحدار المتعدد و إختبار ANOVA و كرونبوخ الفا و الخطية المتعددة و اختبارT و إختبارF .

وأظهرت النتائج ما يلي:

- يوجد علاقة ذات دلالة إحصائية عند $\alpha = 0.05$ بين الريادة المؤسسية (المخاطرة وتوليد الفرص والابتكار والاستباقية والاستقلالية) والنمو المستدام (نمو الأسواق و نمو الفروع و تقديم خدمات جديدة و كسب مشاريع جديدة).
- يوجد علاقة ذات دلالة إحصائية عند $\alpha = 0.05$ بين الريادة المؤسسية (المخاطرة وتوليد الفرص والابتكار والاستباقية والاستقلالية) ونمو الأسواق.
- يوجد علاقة ذات دلالة إحصائية عند $\alpha = 0.05$ بين الريادة المؤسسية (المخاطرة وتوليد الفرص والابتكار والاستباقية والاستقلالية) ونمو الفروع.
- يوجد علاقة ذات دلالة إحصائية عند $\alpha = 0.05$ بين الريادة المؤسسية (المخاطرة وتوليد الفرص والابتكار والاستباقية والاستقلالية) وتقديم خدمات جديدة.

- يوجد علاقة ذات دلالة إحصائية عند $\alpha = 0.05$ بين الريادة المؤسسية (المخاطرة وتوليد الفرص والابتكار والاستباقية والاستقلالية) وكسب مشاريع جديدة.

تمحورت التوصيات الخاصة بهذه الدراسة في الحاجة إلى تحري دور الريادة المؤسسية في مختلف القطاعات، وإجراء بحوث مستقبلية لتحري أثر العوامل الخارجية والداخلية على الريادة المؤسسية و دراسة أبعاد أخرى خاصة بالريادة المؤسسية و عناصر أخرى خاصة بالنمو المستدام .

Chapter One: General Framework of the Research

Chapter One: General Framework of the Research

1.1 Introduction

Modern companies are facing a highly competitive environment in various forms, sources and intensities. One of the key goals and challenges of any organization is to survive and sustain its growth and profitability through strengthening its position in such a turbulent market environment. Different ideas and concepts were developed and implemented to help established organizations to survive and grow in a dynamic environment.

The entrepreneurial conceptualization has developed from a variety of scholarly disciplines and viewpoints, resulting in using entrepreneurship in three different constructs: (1) as a phenomenon, (2) on individual scale, and (3) on organizational scale (Solymossy, 1998, P.1). This research is focusing on the third type of construct which is related to studying entrepreneurship in existing organizations and is distinctively known as corporate entrepreneurship.

Corporate entrepreneurship is one of the main modern concepts that have gained significant position over the past fifty years. Corporate entrepreneurship gained importance on both research and application levels, among researchers, business leaders, practitioners, policymakers, decision makers and governmental parties (Urban and Nikolov, 2013). This is attributed to its focus on the renewal and the development of existing organizations, which are considered a central pillar in economic stability and development.

According to Hayton and Kelley, (2006, P.407) corporate entrepreneurship is a group of activities that centers on the discovery and pursuit of new business opportunities through creating new business types or introducing new business models.

Furthermore Hisrich, et al., (2008, P.16) in their book "Entrepreneurship", stated that the strengths and weaknesses of existing organizations have positive and negative effects on the existence of the corporate entrepreneurship spirit "Existing organizations have the financial capabilities, business competencies, and often effective marketing and distribution channels. Nevertheless, the bureaucratic system, the focus of short-term gains and profits, and a highly structured organization inhibit creativity and innovation from being existed and developed. Therefore organizations recognizing these inhibiting factors and the importance of both creativity and innovation have attempted to establish a corporate entrepreneurial spirit in their organizations."

Engineering consultancy companies constitute a key sector within the local economic development landscape. They represent an example of promising organizations that face a wide range of challenges in their traditional and core range of services. The main challenges can be summarized in areas of coverage, scales of competition, new competitor's entries, varieties of services, demanding clients, stakeholder's requirements and diversity of legislations and regulations, in addition to the effect of political and economic fluctuations.

The above mentioned factors were the primary driving forces that lead engineering consultancy companies to embark on in-depth business environmental analysis, strategic planning, and quick actions in implementation; not only as a means to boost the abilities of companies to survive and grow, but also to sustain their accomplishments.

Consequently, for the purpose of maintaining growth and the survival momentum on an organizational level, it was essential to apply different strategic concepts and actions, including exploring and entering new markets, opening new official branches, providing new and diverse services, and expanding traditional and core scope of services. Sustainable growth is

the ultimate goal of all organizations regardless of their scale or specialty and is considered as a business strategy that focuses on crafting and maintaining the growth of organizations in the long term. Sustainable growth is attained through analyzing, defining and discovering new approaches of doing business, as well as reinforcing business boundaries and organization's capabilities.

Based on the above, the current research study is investigating and discussing the relationship between corporate entrepreneurship and sustainable growth in engineering consultancy companies in Jordan.

The framework of this research is as follows:

- Chapter One: “General Framework of the Research.” This chapter provides a general overview about research including: introduction, statement of the problem, research hypotheses, conceptual model, importance of the study and operational definitions;
- Chapter Two: “Theoretical Framework and Related Lectures.” This chapter contemplates the theoretical and previous studies in the fields of corporate entrepreneurship and sustainable growth as well as engineering consultancy companies. It also offers a comparison between the current research and previous studies in order to demonstrate how the current research differs from the rest of the studies;
- Chapter Three: “Methods and Procedures.” This chapter includes: description of the methods and procedures adopted while conducting the research, identification of the research population, sampling unit and sample, research boundaries and limitation as well as statistical methods;
- Chapter Four: “Data Analysis and Results.” This chapter analyzes data collected through the questionnaire using different statistical methods in addition to displaying the results; and
- Chapter Five: “Discussions of Results and Recommendations” The last chapter discusses the results of data analyzed in chapter four. Finally, it provides recommendations and suggestions.

1.2 Statement of the Problem

Engineering consultancy companies are one of the main promising components of the engineering sector in Jordan, as they play an essential role in national and regional development. Sustaining and developing this sector is necessary from different perspectives. It can be accomplished through applying and developing new concepts, strategies, plans and actions, in order to obtain the highest number of benefits possible from a fast-pace business environment.

Previous studies have highlighted the importance of current research variables and recommended examining them in different sectors (e.g. .Al-Manasra (2008) and Shamsuddin, et al (2012)). Therefore, the main intention of this research is to investigate the relationship between corporate entrepreneurship and sustainable growth in engineering consultancy companies in Jordan. Consequently, the research attempts to answer the following main question:

- Is there a relationship between corporate entrepreneurship (risk-taking, opportunities generation, innovation, pro-activeness, and autonomy) and sustainable growth elements (markets growth, branches growth, offering new services, and awarding new projects)?

In addition to answer the following sub-questions:

- Is there a relationship between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and markets growth?
- Is there a relationship between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and branches growth?
- Is there a relationship between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and offering new services?
- Is there a relationship between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and awarding new projects?

1.3 Research Hypotheses

Considering the current research topic, objectives, variables and model, the following hypotheses were formulated:

Main Hypothesis:

- **HO 1:** There is no statistically significant relationship at $\alpha=0.05$ between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and sustainable growth (markets growth, branches growth, offering new services, and awarding new projects).

Secondary Hypotheses:

- **HO1-1:** There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and market growth.
- **HO1-2:** There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and branches growth.
- **HO1-3:** There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and offering new services.
- **HO1-4**: There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and awarding new projects.

1.4 Conceptual Model

In accordance with the current research topic and the stated problem, Figure 1.1 represents the current research study conceptual model, including selected variables to be tested:

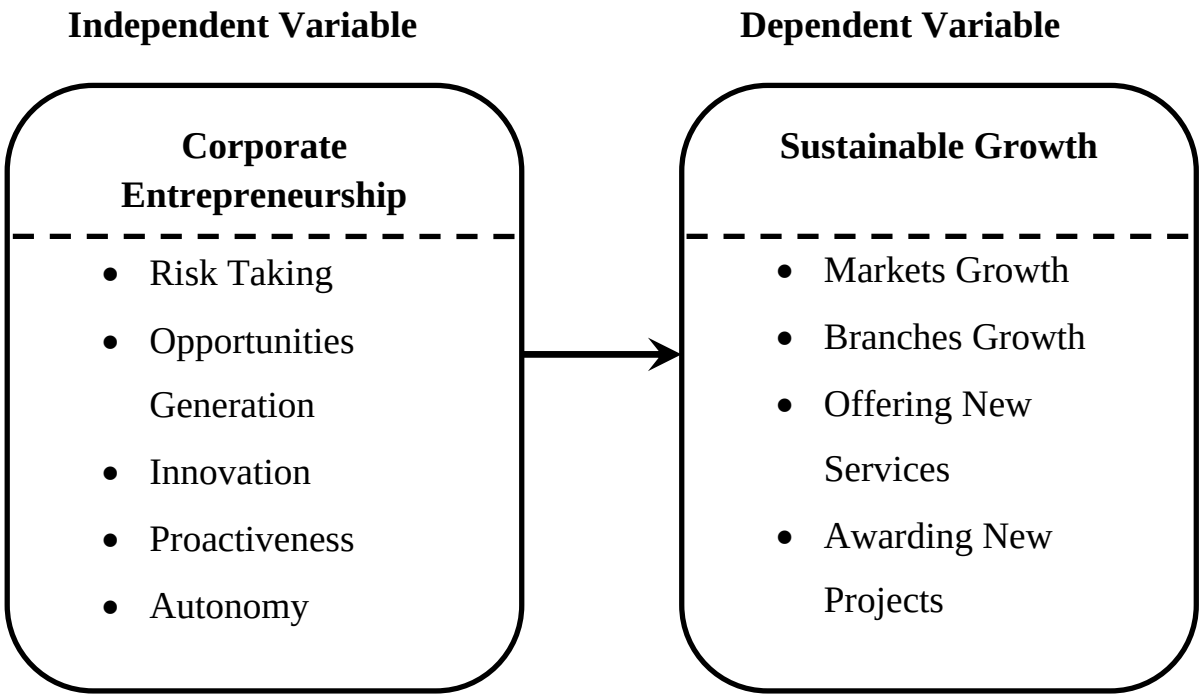

Figure 1. 1: Study Conceptual Model

This conceptual model was developed by the researcher based on the following sources:

Al Manasra (2008), Al Shikh Issa (2010), Al Sadi (2011) and Shamsuddin, et.al. (2012)

1.5 Importance of the Research

The current research is investigating two main variables: corporate entrepreneurship, which is an important modern concept, focuses on the renewal and development of existing organizations; and sustainable growth that ensures organization's ability to maintain their long term growth. In addition to investigating the local engineering consultancy companies, which are recognized as one of the corner stones of the national economy. Considering the aforementioned research variables, the importance of the current research can be summarized in the following main points:

Theoretical Importance:

- Investigating the concept of corporate entrepreneurship in relation to sustainable growth in engineering consultancy companies;
- Distinguishing the main similarities and differences between corporate entrepreneurship and entrepreneurship in general; and
- Providing a background for selected corporate entrepreneurship dimensions and sustainable growth elements, to be used in current and future researches.

Practical Importance:

- Revealing the application of selected corporate entrepreneurship dimensions, represented by risk-taking, opportunities generation, innovation, proactiveness, and autonomy in engineering consultancy companies;

- Recognizing the advantages that can be gained from corporate entrepreneurship dimensions application;
- Providing results and recommendations that might promote and stimulate the corporate entrepreneurship in engineering consultancy companies at different workplaces;
- Revealing the elements that support the sustainable growth of engineering consultancy companies such as markets growth, branches growth, offering new services, and awarding new projects; and
- Studying a unique sector, represented by engineering consultancy companies, which is considered as a competent sector in the economy, in terms of focused specialties and high levels of education and qualifications.

1.6 Operational Definitions

The researcher has identified operational definitions below for basic terminologies that will be measured through the questionnaire:

- **Corporate Entrepreneurship:** A set of activities which are based on thorough business environmental analysis, strategies and plans development, for the purpose of renewing and developing established organizations, represented here by engineering consultancy companies, for the purpose of improving growth and profitability. This variable has been measured through a group of statements (a, b, c, d and e) in the questionnaire; this group of statements are covering selected corporate entrepreneurship dimensions.

- **Risk-taking:** Refers to the tendency of engineering consultancy companies to secure required financial and human resources, for performing some activities and ventures that have some potential uncertainties (opportunities and threats), including entering new markets and providing new services, in addition to having a flexible system that allows a quick decision-making process when required. This dimension has been measured through statements (1 to 6) in the questionnaire.

Opportunities Generation: Refers to the ability of engineering consultancy companies to create, distinguish and capture

opportunities, which have never been exploited before; This is based on business environment analysis and a deep understanding of the objectives of companies and internal and external capabilities. This dimension has been measured through statements (7-12) in the questionnaire.

- **Innovation:** Refers to the ability of engineering consultancy companies to provide and invest in something new or different on both internal and external scales, including talents, ideas, products, processes, systems and services to satisfy unmet client's requirements. This dimension has been measured through statements (13-19) in the questionnaire.
- **Proactiveness:** Refers to the ability of engineering consultancy companies to face obstacles, changes and to create and utilize opportunities quickly in comparison with competitors on both local and regional scales. This dimension has been measured through statements (20-23) in the questionnaire.

- **Autonomy:** It is a strategic behavior which refers to the independency of engineering consultancy companies in terms of developing, adopting and implementing new ideas, processes, tools, systems, technologies and projects, without considering common and current practices and trends in the market. This dimension has been measured through statements (24-28) in the questionnaire.
- **Sustainable Growth:** It is a business strategy that focuses on maintaining long term growth in organizations by applying different plans and tactics, in order to be able to enhance their ability to survive in a dynamic and competitive business environment. This variable has been measured through group of statements (f, g, h, and i) in the questionnaire; this group of statements are covering selected sustainable growth elements.
- **Markets Growth:** refers to the company's ability to exist in markets in different countries outside of Jordan; it is driven by the existence of opportunities, regardless of market location. This could be achieved by opening new offices or by building alliances with competitors and parties to enter these markets, through joint ventures, associations, consortiums and sub-consultancy. This element has been measured through statements (29-34) in the questionnaire.
- **Branches Growth:** refers to the company's ability to gain a full registration to establish and run permanent offices in the same or different countries. This element has been measured through statements (35-38) in the questionnaire.

- **Offering New Services:** refers to the company's ability to provide modified, new and diverse services specialties, different from traditional and core range of services, as a response to market needs. For example, providing environmental, sustainability, management, and training services are new trends now in engineering consultancy companies' scope of services. This element has been measured through statements (39-44) in the questionnaire.
- **Awarding New Projects:** refers to the company's ability to win projects in new and diverse services specialties in different markets as well as from public and private clients. This element has been measured through statements (45-49) in the questionnaire.
- **Engineering Consultancy Companies:** refers to companies that provide professional and technical advice in the engineering consultancy sector, for both public and private clients.

Chapter Two: Theoretical Framework and Related Lectures

2.1 Theoretical Studies

2.2 Previous Studies

٢،٣ Features of Current Study as Compared with Previous Studies

Chapter Two: Theoretical Framework and Related Lectures

This chapter consists of three main sections: theoretical studies, previous studies and features of current research. The first two sections help in the tracing of the main aspects of the current research variables, while the third part focuses on the added value of this research.

2.1 Theoretical Studies

The aim of examining previous studies is to demonstrate a solid background of the research variables, give credit to those who have laid the foundation and to present the theoretical and research issues in relation to the current research based on chronological order whenever applicable.

Corporate Entrepreneurship

Hereafter are the main results of the review process, which reveal the derivation relationship between entrepreneurship and corporate entrepreneurship concepts, availability of broad range of definitions, deep research history, as well as varieties of interests, characteristics, skills and dimensions.

Definitions

The review process has shown the strong relationship between corporate entrepreneurship and entrepreneurship in terms of concept, foundation and dimensions. Sub-sections below discuss and connect both terminologies for clarity and consistency.

Entrepreneurship:

Endres and Woods, (2010, P.603) have mentioned that the concept of entrepreneurship was originally based on the work of Joseph Schumpeter who considered entrepreneurship as a process of "creative destruction" in which the entrepreneur constantly displaces or destroys existing products,

process or methods of production with new ones. According to Schermerhorn, (1996, P.174) "Entrepreneurship is a term used to define strategic thinking and risk-taking behavior that results in the creation and exploitation of new opportunities on both individual and/or organization scales." While Thorén, (2007, P.27) has focused on marketing aspects by defining entrepreneurship "as the activities undertaken for the introduction of new elements to the set of products and services offered to a market." Hisrich, et al., (2008, P.9), have mentioned that the concept of individual entrepreneurship has been thoroughly explored in this century, with special focus on three kinds of behavior that includes: initiative taking, the transforming of social and economic resources and situations to practical account, and the acceptance of risk and failure.

Also Hisrich, et al. have defined entrepreneurship as the process of generating new idea, creating new products and services with value by dedicating all required time, money and effort, assuming the accompanying financial, psychic, and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence.

Maier and Zenovia, (2011, P.971) have understood the concept of entrepreneurship in relation with opportunities as the process of discovering, developing and exploiting an opportunity, to create value through innovation and seizing that opportunity without considering the challenges – in a new or existing company and is in line with opportunities process concept and availability of resources.

From another angle Barringer and Ireland, (2012, P.537) have defined entrepreneurship as the "Process by which individuals pursue opportunities without regard to the available resources."

According to Amorós and Bosma, (2014, P.16), "Entrepreneurship has become a common term in all over the world. According to a broad spectrum of key players in society, entrepreneurship tends to be connected with the economic growth and well-being of society. Therefore entrepreneurs are considered ambitious and spur innovation, accelerate growth in the economy, introduce new competition and contribute to productivity, job creation and availability and national competitiveness."

Ali and Dupleix, (2014, P.7) have agreed with Hisrich, et al, (2008) definition mentioned above. Finally Albu and Mateescu, (2015, P.46) have stated that "Entrepreneurship incorporates acts of organizational creation, renewal, or innovation that occur inside or outside an existing organization."

Therefore, the researcher considers entrepreneurship as a process of generating and creating something new and valuable, by individuals, as a reply to certain needs.

Entrepreneur:

Hisrich, et al., (2008, P.8) and Jawad, et al., (2010, P.3), have three definitions for entrepreneur based on three different perspectives:

- **To an economist**: is a person who brings and utilizes financial and human resources to make their values greater than before, as well as one who introduces changes, innovations and a new processes;
- **To a psychologist**: is a person driven by certain forces, including the need to obtain or achieve something, to experiment, to challenge status quo or perhaps to work independently; and
- **To a businessman**: a risk taker, an aggressive competitor, whereas to another businessman may be considered as a good partner or customer, or someone who creates wealth for others, as well as someone who looks for and finds efficient ways to utilize available resources and minimizes wastes.

Manocha, (2012, P.196) has defined entrepreneur as someone who develops a new idea and process, and takes the initiative to start a venture, to produce a product or offer a service which satisfies customer needs and requirements. While Ali and Dupleix, (2014, P.7) have considered entrepreneur as "the one who is dissatisfied with the lack of growth, trying to exploit forms of change and accepting higher risk and uncertainty."

Therefore, the researcher considers entrepreneur as the leader of the entrepreneurial process, the one who takes the initiative to start something new, adds value and eventually satisfies unmet needs.

Corporate Entrepreneurship:

This current research uses the definitions that considers corporate entrepreneurship and intrapreneurship as synonyms. However, some sources have considered intrapreneurship as a category within corporate entrepreneurship and not as a complimentary category; a category that focuses on the identifications and developments of employee's entrepreneurial skills within existing organizations (will be discussed further in item 2.2.1.7).

According to Nielsen, et al., (1985, P.181) corporate entrepreneurship "is the development within an existing organization of internal markets and relatively small and independent sections designed to create, internally test-market and expand improved and/or innovative staff services, technologies or methods within the organization." While Carter and Jones–Evans, (2006, P.268) stated that corporate entrepreneurship has been used to describe a different organizational scenarios, including the following:

- The development and maintenance of an overall environment of corporate entrepreneurship;
- The creation of new projects within an existing organization to develop new products/services or to improve existing products/services, including the establishment of autonomous business units within the organization to develop a new product and/or projects;
- Initiatives by employees inside the organization to start new project, apply new process and offer new product/ services; andRationalization of the business, including management personnel.

However Hayton and Kelley, (2006, P.407) have considered corporate entrepreneurship as "a group of wide activities that centers on the discovery and pursuit of new business opportunities through innovation, creating new business types or introducing new business models.". While Thorén, (2007, P.28) has defined corporate entrepreneurship in brief as "the entrepreneurship within established firms."

Hisrich, et al., (2008, P.16) have mentioned that corporate entrepreneurship refers to entrepreneurship within an existing organization. Also they described the anticipated strengths and weaknesses of existing organizations that affect the existence and development of the corporate entrepreneurial spirit.

While Maier and Zenovia, (2011, P.972) have focused on the internal resources and top management role in reaching and enhancing the corporate entrepreneurship by considering that corporate entrepreneurship as the commencement and execution of innovative schemes and practices within an existing organizations, by some of its employees under the supervision and control of the top managers who take the role of an intrapreneur, in order to renewal and improve the performance of the organization, by using a part of its current resources, which were not been used in an appropriate and effective way before.

Wheelen and Hunger, (2012, P.892) have considered corporate entrepreneurship similar to intrapreneurship, same as the current research, and they have defined it "as the creation of a new business within an existing organization."

According to Amorós and Bosma, (2014, P.16) "Entrepreneurship researchers admit and argue that studying roots and outcomes of entrepreneurship requires going beyond viewing entrepreneurship as an occupation (self-employment and startup rates). Consequently the focus has moved to entrepreneurial behavior and activities in existing organizations, including for example entrepreneurial employee activity (a term that is closely related to corporate entrepreneurship)."

While Ali and Dupleix, (2014, P.7) have provided a simple definition that considered corporate entrepreneurship as "a term used to denote entrepreneurial behavior in an existing large organization." While Albu and Mateescu, (2015, P.46) have stated that "a company's entrepreneurship is the sum of a company's innovation and venturing activities" and results in helping the companies to obtain new capabilities and competences, create and introduce more business opportunities, enter new markets, secure new revenue stream, and improve its performance."

The researcher considers corporate entrepreneurship as a set of activities, which are based on thorough business environmental analysis, strategies and plans development, for the purpose of renewing and developing established organizations.

Corporate Entrepreneur/ Intrapreneur:

The abovementioned definitions have provided a common understanding of the strong relation between entrepreneurship and corporate entrepreneurship. For example Drucker, (1985, P.143) in his book "Innovation and Entrepreneurship Practice and Principle", stated that "Entrepreneurship is

based on similar principles, whether the entrepreneur is in existing organization (intrapreneur) or an individual starting his or her new business singlehanded (entrepreneur). It makes little or no difference whether the entrepreneur is a business or a non-business public-service organization, nor even whether the entrepreneur is a governmental or nongovernmental institution."

Zahra, et al., (2013, P.365) considered an intrapreneur as "the one who acts entrepreneurially in response to organizational inertia, brought about by the size, bureaucracy or strategic near-sightedness of their organization."

Therefore, the researcher considers intrapreneur as the leader of the change or part of the changing team in a corporate entrepreneurship process (in an existing organization) . The one who takes the initiative to start something new, adds value and eventually satisfies unmet needs within an existing organization.

The Emerging and Development of Entrepreneurship

This subsection aims to summarize the main stages of forming the entrepreneurship concept and to provide a clear understanding about its roots and turning points.

The concept of entrepreneurship is considered to be an old concept, used for the first time in the French language at the beginning of the sixteenth century. At the time, the concept concerned the issues of risk and bearing the difficulties that accompanied the campaigns of military exploration. This concept was adapted to economic terminology and activities in order to describe a trader who buys goods at a specified price to sell in the future at an unknown price (Al Hadouri, 2013, P.95).

Moreover, Hisrich, et al., (2008, P.6-7) have provided more details about the initiation and the development of entrepreneurship theory:

Initial Period: an early example of an entrepreneur is Marco Polo, who established trade routes to the Far East. He would sign a contract with a capitalist to sell his goods. While the capitalist/ funder was a passive risk bearer. Therefore the merchant–took the active role in trading, bearing all the potential risks. When the merchant successfully sold the goods and completed the trip, the profits were divided with the capitalist/ funders taking most of it;

- **Middle Ages**: the term entrepreneur was used to describe a person who managed large projects without taking any risks, but merely managed the project using the provided resources by the government;

-
- **17th Century**: the re-emergent connection of risk-taking behavior with entrepreneurship developed, with an entrepreneur being a person who entered into a contractual agreement with the government to provide services or products;
- **18th Century**: the party with capital was differentiated from the one who required the capital. In other words, the entrepreneur was distinguished from the capitalist/ funder;
- **19th and 20th Centuries**: within the 19th and 20th centuries, entrepreneurs and managers were considered the same, and were viewed mostly from an economic perception. In the middle of the 20th century, the concept of an entrepreneur as an innovator was established. The function of the entrepreneur was to reform or revolutionize the configuration of production by a new technological methods or processes of producing a new commodity or improving an old one in a new way, opening a new source of supply of materials or a new outlet for products by organizing a new industry; and
- **Today:** The concept of an entrepreneur is further refined considering the principles and terms of business, managerial, and personal perspective. In particular, the concept of entrepreneurship from an individual perspective has been thoroughly explored and studied during this century.

The next subsection reveals extensive research that has been conducted about corporate entrepreneurship, due to its importance in stimulating and renewal existing organizations.

Research History of Corporate Entrepreneurship

Research efforts in the field of corporate entrepreneurship have passed several stages. Below is a summary of main, up to date researches based on available resources in sequential order:

1) Modern entrepreneurship research originated based on the work of Joseph Schumpeter (1883–1950), who considered entrepreneurs as the main catalysts of economic growth by introducing new services and products, new processes of production and other innovations that motivate different economic activities. In addition, he defined entrepreneurship as a creative destruction process (Endres and Woods, 2010);
2) After that, researchers focused on individual's entrepreneurship until 1971, when Peterson and Berger issued a paper about "Entrepreneurship in Organizations: Evidence from Popular Music Industry". The two authors identified the circumstances through which corporate entrepreneurship develops and the needed organizational strategies to contain its effects on the organizational scale (Zahra,et al., 2013, P.364);

3) Miller's study in 1983 entitled "The Correlates of Entrepreneurship in Three Types of Firms" has stimulated wide interest in corporate entrepreneurship research. He showed that organizations can act entrepreneurially and defined corporate entrepreneurship as having three main dimensions: innovation, proactiveness and risk-taking (Zahra, et al., 2013, P.364);
4) Nielsen, Peters and Hisrich's study in 1985 entitled "Intrapreneurship Strategy for Internal Markets—Corporate, Non-profit and Government Institution Cases" explained the conceptual frameworks for the corporate entrepreneurship strategy, including motives to apply and the potential limitation;
5) Covin and Selvin's study in 1986 and 1989, have inspired a surge in empirical corporate entrepreneurship research and connected research to an organization's entrepreneurial orientation (Zahra, et al., 2013, P.364);
6) Burgelman in 1983 and 1984 studied internal corporate venturing and in doing so, clarified two categories of personal strategic behaviors (strategic behaviors which are induced fit into the existing categories of organizations and also into familiar external environments) (Zahra, et al., 2013, P.365);
7) Gifford Pinchot III in 1985 concentrated on the importance of informal activities that help in emerging the corporate entrepreneurship. Pinchot III coined the term "Intrapreneurship" to describe corporate entrepreneurship (Zahra, et al., 2013, P.365);

8) R. Kanter and her team between 1985 and 1992 adopted a methodology of using multiple studies that presented how organizations were structured for corporate entrepreneurship activities through programs conceived to prompt the added value through generating new ideas. They also identified four standard methodologies that companies used to support and nurture corporate entrepreneurship: the "pure venture capital" model, where the parent/ main company invests in external ventures; the "venture development incubator", where new ventures are managed as independent units from parent/ main company, either internally or externally; the "idea creation and transfer center", which develops new ideas and activities and then passes them on for established organizations to exploit; and the "employee project" model, which is an entrepreneurial variant of employee involvement programs (Zahra,et al., 2013, P.365);
9) Ian MacMillan and his colleagues in 1986, 1987 and 1988, studied corporate venturing activities, concentrating on understanding the requirements for achieving successful corporate venture initiatives. They found that success was more likely when supported by top management, availability of required resources as well as when the experiences and findings from unsuccessful projects shared and used in future projects (Zahra,et al., 2013, P.366);

10) Guth and Ginsberg in 1990 noted a lack of consensus among academics on what corporate entrepreneurship was. Based on their extensive and deep review of the literature, they considered that corporate entrepreneurship has two main dimensions. The first dimension involves innovation activities and the second is strategic renewal and creation of new wealth (Zahra, et al., 2013, P.366);
11) Zahra in 1991 and 1993 revealed that because organization's use different arrangements of corporate entrepreneurship dimensions and initiatives, it would be beneficial to study how these diverse activities might influence growth and profitability (Zahra,et al., 2013, P.366). Also literature on financial performance and dimensions of corporate entrepreneurship has shown that related dimensions such as proactiveness, innovations, risk-taking, and competitive aggressiveness significantly and positively influenced the financial performance (Shamsuddin, et al., 2012, P.114);
12) Zahra and Covin in 1995 showed that there is a lag between corporate entrepreneurship and financial performance. The duration of this lag might vary from one sector to another and therefore requires systematic empirical studies and theoretical documentation (Zahra,et al., 2013, P.368);
13) Zahra in 1996 through "Governance, Ownership, and Corporate Entrepreneurship: The Moderating Impact of Industry Technological Opportunities" showed that two variables were positively and significantly associated with corporate entrepreneurship (high levels of executive ownership and long-term institutional ownership);

14) Barringer and Bluedorn in 1999 when studying "The Relationship Between Corporate Entrepreneurship and Strategic Management" indicated that there is a significant and positive relationship between corporate entrepreneurship intensity and planning flexibility, scanning intensity, locus of planning and strategic controls;

15) Antoncic and Zorn (2004) indicated that the variables of corporate entrepreneurship (for example new firm formation, product/service and process innovation) are a strong mediator in the organizational support–performance relationship (Shamsuddin, et al., 2012, P.114);

16) Lassen in 2007 investigated established high-tech organizations by looking at financial performance as a main dependent variable against the level of corporate entrepreneurship of the existing organization, including effective combination of autonomy, innovation, risk-taking, proactiveness and competitive aggressiveness. The study emphasized the significance of the marketing activities of products, services and technologies for enabling the organization to enter new markets (Shamsuddin, et al., 2012, P.114);

17) Duobienė in 2008 while examining "The Role of Organizational Culture in Sustaining Corporate Entrepreneurship" showed that organizational culture involves external factors, internal factors and individual levels of variables that influence corporate entrepreneurship. Duobienė stated that corporate entrepreneurship culture can support innovations, This culture is important since it supports behavior which is the essence of entrepreneurship;

18) Aktan and Bulut in 2008 examined the effects of four dimensions of corporate entrepreneurship (proactiveness, risk-taking, innovation and competitive aggressiveness) against financial performance. The study concluded that positive and significant effects were exists between four dimensions and financial performance (Shamsuddin, et al., 2012, P.114);
19) Antoncic and Scarlet in 2008 anticipated a positive relationship between corporate entrepreneurship and performance. As the majority of correlations between corporate entrepreneurship and growth elements and corporate entrepreneurship and profitability elements were found positive and significant (Shamsuddin, et al., 2012, P.114);
20) Lekmat and Selvarajah in 2008 studied corporate entrepreneurship activities of top management level in auto parts manufacturing companies. Their study measured the relationship between corporate entrepreneurship and two performance indicators (growth and profitability). They emphasized that not all the examined dimensions are positively correlated to financial performance, except for innovation, self-renewal and organizational support. While other dimensions (new business ventures and proactiveness) are negatively correlated to financial performance (Shamsuddin, et al., 2012, P.116);

21) Kelley's study in 2011 entitled "Sustainable Corporate Entrepreneurship: Evolving and Connecting with the Organization" stated that building sustainable ability for corporate entrepreneurship is a dynamic process. Therefore managers need to consider different factors such as structure, strategy, and process as the first starting points that require continuous adjusting, due to changes in the surrounding environment and as more entrepreneurial experience and knowledge are gained;
22) Maier and Zenovia in 2011 conducted a study entitled "Entrepreneurship versus Intrapreneurship" in which they provided a review of theoretical studies on the both concepts. In addition, they identified the similarities and differences between them;
23) Malik and Bin Mahmood in their 2012 research entitled "Facilitating Corporate Entrepreneurship in Public Sector Higher Education Institutions: a Conceptual Model" concluded that organizations need to provide space and resources to support the entrepreneurial initiatives and activities, develop entrepreneurial principles and opportunities as well as encourage entrepreneurial practices;
24) Shamsuddin, et al. in 2012 in their study "The Dimensions of Corporate Entrepreneurship and the Performance of Established Organization" showed that proactiveness has a positive and significant impact on financial performance, risk-taking did not has a direct effect on financial performance, while innovation and self-renewal are negatively related to financial performance;

25) Felı´cio, et al. in 2012 through their work on "The Effect of Intrapreneurship on Corporate Performance" confirmed the relationship between corporate entrepreneurship and performance;
26) M@n@gement Journal dedicated its issue in 2013 to the topic of corporate entrepreneurship under the name "Corporate Entrepreneurship: where are we? Where can we go from here?" to discuss results of recent research works and to consolidate findings of fifty researchers, including; "Part I: The Evolution and Contributions of Corporate Entrepreneurship Research" prepared by Zahra, et al., "Part II: The Contribution of HRM to Corporate Entrepreneurship: a review and agenda for future research" prepared by Hayton, et al. and "Part III: Corporate Entrepreneurship in Context" prepared by Harms, et al.; and
27) Ali and Dupleix in 2014 through their work entitled "An Investigation of Corporate Entrepreneurship Theories and Their Pragmatic Usance into Price Water House Coopers" analyzed main theories and studied the primary differences among corporate entrepreneurship and innovation in addition to highlighting the role of top management in reinforcing corporate entrepreneurship application .

Corporate entrepreneurship was derived from individual's entrepreneurship, and could be considered as a reflection of entrepreneurship concept on existing organizations sphere. Passed through several stages including: diverse definitions, dimensions, applications and relations, mainly with regard to organization performance.

Corporate Entrepreneurship Importance

According to Barringer and Ireland, (2012, P.21) through their book "Entrepreneurship Successfully Launching New Ventures" stated that "the importance of the entrepreneurial organizations can be summarized in two key points; economic impact through innovation and job creation; and impact on society in large, through introducing new products, offering new services that make our lives easier, enhancing productivity at work space improving health level, and entertaining us."

Accordingly, the interest in corporate entrepreneurship has increased, especially at the corporate level due to its role in the stability and growth of existing companies. Nielsen, et al., (1985, P.182-185) stated the following reasons for using corporate entrepreneurship:

- develop secondary activities not directly related to an organization's core scope of services;
- realize the flexibility needs, through offering secondary activities ;
- reduce response time, and
- avoid the tendency to compromise rather than adopt new solutions in areas considered secondary.

While Carter and Jones–Evans, (2006, P.267) in their book "Enterprise and Small Business Principles, Practice and Policy" explicated this interest due to a combination of various internal and external elements; including:

- the unclear boundaries between the formal and informal labor markets;

- the change in attitudes towards entrepreneurship, with a higher degree of individualism, mainly among the professional workers within many existing organizations;
- increasing rates of new product /services as life-cycles become shorter and the rate of process and technology changes faster, this increase the demand for a higher degree of innovation within the existing organization boundaries;
- the technological revolution, which has had global consequences for industries as diverse as financial services and agriculture;
- economic uncertainties leading to dynamic and unstable market environment; and
- pressure on all sectors to remove unnecessary expenses and externalize previously internalized services.

Entrepreneurial Strategies

Drucker, (1985, P.209-252) has specified four general entrepreneurial strategies as listed below. The first two strategies focus on positioning the company in the market, the third focuses on obtaining a small (niche) area of the market, and the fourth strategy is about innovation.

1) Being "Fustest with the Mostest": this strategy does not aim at creating a big business immediately. but it aims from the start towards a permanent leadership position;
2) "Hitting Them Where They Ain't": this is the strategy of "creative imitation." It means to wait until other competitor has established and introduced new products or services, but only "approximately." Then to work and within a short time to come out with what the new really should be to satisfy the customer and market;

3) Finding and occupying a specialized "ecological niche": this strategy aims at acquiring a practical monopoly in a small area; and
4) Changing the economic characteristics of a product, a market, or an industry: this strategy converts and develops old, an established product or service into something new. Through changing product or service's functions, values and characteristics.

Corporate Entrepreneurship Categories

According to Kokou, (2011, P.7) and Ali and Dupleix, (2014, P.7), corporate entrepreneurship has four identifiable categories:

- **Corporate Venturing:** the process of starting new projects related to main business objectives, through investing in smaller innovative firms;
- **Intrapreneurship:** focuses on the identification of employees who have entrepreneurial skills and emphasizes encouraging these employees to act in an entrepreneurial manner within exiting organizations;
- **Bring the Market Inside:** this element encourages entrepreneurial behavior by changing structure; and
- **Entrepreneurial Transformations**: deals with the adaptation of an organizational structure and culture, to changing environment and
- creates a new internal environment to support entrepreneurial initiatives.

Entrepreneur and Intrapreneur Characteristics

Several studies have examined the characteristics, attitude, behavior and traits of both entrepreneurs and intrapreneurs; below is a short overview of the main ideas gather from these studies:

Carter and Jones–Evans, (2006, P.161), have highlighted several characteristics desirable in an entrepreneurial career including: risk-taking tendency, need for achievement, locus of control, optimism and tendency for autonomy.

Personal characteristics of individual entrepreneurs have been divided into two main categories:

- **Behavioral Attributes:** such as technical, interpersonal and managerial skills (human, conceptual and technical) (Al Sakarneh, 2006).
- **Personal Attributes:** such as internal locus of control, high energy level, need for achievement, acceptance of uncertainty and un clarity, awareness of time value and self-confidence (Nasser and Al Omari, 2011, P.145).

According to Barringer and Ireland, (2012, P.16) in their book "Entrepreneurship Successfully Launching New Ventures", there are personality traits and characteristics commonly associated with entrepreneurs including: a moderate risk taker, a networker, achievement motivated, ready to opportunities, creative, decisive, energetic, a resilient work ethic, lengthy attention span, optimistic disposition, persuasive, promoter, resource assembler/ leverage, self-confident, self-starter, stubborn, firm, tolerant of ambiguity and visionary.

Conversely, the characteristics of successful entrepreneurs are:

- passionate for the business;
- product/customer focus;
- tenacity despite failure; and
- performance intelligence.

Jawad, (2000, P.476) discussed the personal characteristics that must be available in an intrapreneur, in order to be able to reach and achieve the required entrepreneurial condition successfully within the organizational environment, this includes:

- Vision;
- Flexibility to build teams; and
- Persistence.

Hisrich, et al., (2008, P.74) added the following characteristics:

- Scan and analyze the surrounding environment;
- Generate management options and scenarios;
- Inspire team work;
- Encourage open discussion and brain storming; and
- Build partnership.

Understanding the behavioral and personal attributes and characteristics of intrapreneurs would help organizations in selecting competent staff to lead, pursue and spread corporate entrepreneurship concept and culture.

Characteristics of Traditional Managers, Entrepreneurs and Intrapreneurs:

Carter and Jones–Evans, (2006, P.279-280) have prepared a set of skills that define the intrapreneur from traditional corporate managers and entrepreneurs based on the Pinchot study (1986). The characteristics are shown in Table 2.1:

Table 2.1: Managers, Entrepreneurs and Intrapreneurs.

Attributes	Traditional Managers	Entrepreneurs	Intrapreneurs
Organizational Attributes			
Attitude to Organization	Sees organization as nurturing and protective, seeks position within it	May advance rapidly in an organization – when frustrated, rejects the system and forms his/her own business	Dislikes the organizational system, try to improve existing system and make it more flexible
Managerial Satisfaction	Pleases others, especially in higher level	Pleases self and customers	Pleases self, customers and sponsors
Primary Motives	Wants promotion and rewards	Wants freedom, is. goal- oriented, independent and self-motivated	Wants freedom and access to organization internal resources
Relationship with Others	Organizational hierarchy as basic relationship	Transactions and deal-making as basic relationship	Transactions within organizational hierarchy
Managerial Attributes			
Decisions	Agrees with those in power and delays decisions for superiors	Follows private vision, is decisive and action-oriented	More patient and willing to compromise
Delegation of Action	Delegates actions – since reporting and supervising takes up most of time	Gets hands dirty and can upset employees by doing their work	Gets hands dirty – can do work but at same time knows how to delegate
Management Attention	Primarily on events inside the organization	Primarily on technology and market-place	Both inside– management on needs of venture – and outside of firm–focus on customers

Market Research	Has market studies done to discover needs in the market	Creates needs. Talks to customers and forms own opinions	Does market studies and creates needs
Problem Solving Style	Works out problems within the system	Escapes problems by leaving to start own business	Works out problems within the system, or bypasses it without leaving
Skills	Professional management, abstract analytical tools, people management and political skills	Knows business intimately, more business judgment than managerial skill and often technically trained	same as entrepreneur, but situation demands greater ability to prosper within the organization
Personal Attributes			
Personal Qualities	Can be forceful and ambitious–fearful of others' ability to harm career development	Self-confident, optimistic, courageous	Self-confident; courageous–cynical about system but optimistic in ability to outwit it
Educational Level	Highly educated	Transactions and deal making as basic relationship	Transactions within hierarchy
Failure and Mistakes	Strives to avoid mistakes and surprises and postpones recognizing failure	Deals with mistakes and failures as learning experiences	Attempts to hide risky projects from view so can learn from mistakes without public failure
Family History	Family members worked for large organizations	Entrepreneurial small business, professional or farm background	Entrepreneurial small business, professional or farm background
Risk	Careful	Likes moderate risk, invests heavily but expects to succeed	Likes moderate risk– unafraid of dismissal so little personal risk
Status	Cares about status symbols	Happy sitting on an orange crate if job is getting done	Dismisses traditional status symbols – covets symbols of freedom

*Source: Carter, Sara. and Jones – Evans, Dylan. (2006), Enterprise and Small Business Principles, Practice and Policy, 2nd Edition, Pearson Education Limited, England.

Organization Characteristics and Climate

Jawad, (2000, P.476-477) has stressed the role of top management at the organizations level and considered that they have a fundamental role in stimulating an organization entrepreneurship environment through overcoming barriers and obstacles that face manager's entrepreneurship orientation. Accordingly, he has identified the following organizational characteristics:

- Top management commitment;
- Flexible organizational structure;
- Independence of the team in charge of the implementation of the new idea;
- Stimulus to risk-taking;
- Ideas providers are smart and capable people; and
- Appropriate control system.

Thornberry, (2006, P.33) discussed an entrepreneurial spirit on an organization level, in his book "Lead Like an Entrepreneurship", and defined the following corporate entrepreneurship behaviors:

- Efficiently proposes and executes actions through bureaucratic structure;
- Displays an enthusiasm for acquiring required skills and competencies;
- Rapidly changes course of action when results aren't being achieved as planned;

- Flexibility in responses and reactions based on evaluating current situation and considering surrounding;
- Encourages others to take the initiative for their own ideas;
- Inspires others to think about their work in different and creative ways;
- Dedicates required time to helping others find ways to improve products and services;
- Supports and implements the good ideas of others;
- Confidently supports promising new approaches and products when others might be more careful and uncertain;
- Brilliantly describes how things will be better in the future and what is the required actions to get there;
- Gets people to work together to meet challenges and achieve objectives; and
- Creates a healthy space where people get enthusiastic about making improvements and challenge status quo.

Also Hisrich, et al., (2008, P.72) stressed the availability of certain factors and leadership characteristics for the purpose of establishing an entrepreneurial environment within an established organization:

- Organization operates on borders of technology;
- New ideas , vision and process are encouraged;
- Trial and error welcomed;
- Failure accepted
- No opportunity parameters;
- Required human and financial resources are available and accessible;
- Multidisciplinary teamwork approach;

- Long time planning;
- Volunteer program;
- Appropriate recognition and reward systems; and
- Sponsors and champions available.

Regarding the decision-making process, Hisrich, et al., (2008, P.41) have discussed managerial versus entrepreneurial decision-making in Table 2.2:

Table 2. 2: Decision Making Process in Entrepreneurial and Traditional Organizations

Entrepreneurial Focus	Dimensions	Managerial Focus
Driven by perception of opportunity	**Strategic orientation**	Driven by controlled available resources
Revolutionary with short duration	**Commitment to opportunity**	Evolutionary with long duration
Many stages with minimal exposure	**Commitment of resources**	A single stage with complete commitment out of decision
Irregular use or rent of required resources	**Control of resources**	Ownership or employment of required resources
Flat with multiple informal networks	**Management structure**	Hierarchy
Based on value creation	**Reward philosophy**	Based on responsibility and seniority
Rapid growth is top priority, therefore risk accepted to achieve growth	**Growth orientation**	Safe, slow and stable

Promoting broad search for opportunities	**Entrepreneurial culture**	Opportunity search restricted by controlled resources and failure punished

*Source: Hisrich, Robert D. Peters, Michael P. and Shepherd, Dean A. (2008), Entrepreneurship, 7th edition, McGraw-Hill, USA.

While Rensburg, (2009, P.34) has discussed the main differences between entrepreneurial and managerial organizations in Table 2.3:

Table 2. 3: Differences between Entrepreneurial and Managerial Organizations

Business Characteristics	Entrepreneurial Organization	Managerial Organization
Strategy	Seeks out new ventures. Protects current processes and technologies worth saving through adaptation	Defensive. Protects present processes and technologies, variation through acquisitions and mergers
Risk	If approached intelligently, used as key to growth, adaptation and survival	Only something to minimize
Culture	Culture serves to nurture adaptation and innovation	Culture serves to protect status quo. It is objective and analytical
Structure and Communication	Informal communication channels and structure horizontal communication	Formal communication channels are of great importance
Decision-making	Top management establishes mission and vision statement, feedback from lower levels are encouraged	Top management sets fixed narrow parameters. feedback from lower levels may or may not be
People	Viewed as key resources. Are protected and fullest potential is used	Viewed as abundant resources that are easily replaceable
Creativity	Foster, develop and encourages creativity	Tolerates creativity

*Source: Rensburg, M. Janse Van. (2009), An assessment of Corporate Entrepreneurship in the Primary Production units in a Steel Manufacturer, Published Master's Thesis, North-west University, South Africa.

Organization's top management plays a key role in formulating organization environment and characteristics. Therefore, organizations who are working on motivating corporate entrepreneurship tendency need to work on different internal characteristics and barriers in order to reach a corporate entrepreneurship environment.

Entrepreneurial Versus Corporate Entrepreneurship

Maier and Zenovia, (2011, P.974) studied the similarities and differences between entrepreneurship and corporate entrepreneurship in Table 2.4:

Table 2. 4: Similarities and Differences between Entrepreneurship and Corporate Entrepreneurship

Similarities	**Differences**	
	Entrepreneurship	**Corporate Entrepreneurship**
Involve opportunity recognition and definition.	the entrepreneur takes the risk	The company takes the risk which is not a career related risk.
Require a unique business concept that takes the form of a product, process, or service.	the entrepreneur owns the concept and business	The company owns the concept and intellectual rights with the individual entrepreneur having little or no equity in the venture at all.
Driven by an entrepreneur, who works with a team to bring the concept to reality.	Potential rewards for the individual entrepreneur are theoretically unlimited	Organizational structure is in place to limit rewards/ compensation to the entrepreneur/employee.
Require an entrepreneur, who is able to balance vision with managerial skill, passion with pragmatism and proactiveness with patience.	One strategic mistake could mean prompt failure	The organization has more flexibility for management mistakes

Similarities	Differences	
	Entrepreneurship	**Corporate Entrepreneurship**
Involve concepts that are most vulnerable in the preliminary phase, and that require adaptation over time.	The entrepreneur is subject or more susceptible to outside influences;	The organization is more protected from outside forces or influence.
Entail a window of opportunity within which the concept can be successfully capitalized upon.		
Depend on value creation and accountability to a customer.		
Involve risk and require risk management and mitigation strategies.		
Require the entrepreneur to develop creative strategies for leveraging resources.		
Include significant ambiguity.		
Require harvesting strategies.		

*Source: Maier, Veronica. and Zenovia, Cristiana Pop. (2011), Entrepreneurship versus Intrapreneurship, Review of International Comparative Management, Vol. 12, Issue 5, Pp.971-976.

The above reveals the strong relation between both entrepreneurship and corporate entrepreneurship concepts. It also highlights the advantage of application on existing organization levels, in terms of securing required resources and mitigating potential risks and failures.

Establishing Corporate Entrepreneurship in the Organization

Hisrich, et al., (2008, P.75-76) identified the main steps that help in applying corporate entrepreneurship in the organization:

Step One: -Secure a commitment in the top, upper and middle management levels;

-Establish preliminary framework/ model;

-Support the concept; and

-Identify, select and train intrapreneurs;

Step Two: -screen and short list applicable ideas and areas that top management is interested in supporting;

-conduct high level feasibility studies that cover financial, technical and human resources requirements;

-arrange a unified corporate plan that covers all projects in terms of objectives, expectations, time, cost and results; and

-Establish mentor/sponsor system;

Step Three: -Apply technology to ensure organizational flexibility;

Step Four: -Identify interested managers to train intrapreneurs and employees and share their knowledge and experiences;

Step Five: -Develop new channels that allow the organization to get closer to its customers and clients;

Step Six: -Learn to be more efficient with limited resources and tight time frame;

Step Seven: -Establish a strong support organizational hierarchy for corporate entrepreneurship initiatives;

Step Eight: -Bond rewards to the performance of the entrepreneurial unit/ division; and

Step Nine: -Implement a clear evaluation system that allows successful entrepreneurial teams, units and divisions to expand and eliminates unsuccessful ones.

Action plan that considers different aspects is essential to ensure and boost corporate entrepreneurship application in any organization, this includes: the support of top and middle level management, select proper candidates, conduct related training, agree on ideas to be implemented, develop plans and continuously monitor and evaluate the surrounding environment and outcomes.

Corporate Entrepreneurship's Dimensions

Several books and researchers have studied and analyzed entrepreneurship dimensions. Al Hadouri, (2013, P.97) summarized main dimensions that are used in measuring entrepreneurship including: risk-taking, proactiveness, opportunities generations, innovation, autonomy, behavior, entrepreneurial culture, strategic orientation, resources magnification, administrative hierarchy, recognition, competitive aggressiveness and initiation. Hereafter a discussion of main dimensions in relation with this research model and hypotheses are explored:

Autonomy

Lumpkin and Dess, (1996, P.140) considered autonomy as "the independent action of an individual or a group in introducing an idea or a vision and carrying it through to completion." Al Manasra (2008, P.12) defined it as: "the ability and desire for leading the management independently, within the emerging of new opportunities. Which mean being motivated for decisions and actions taking independently, as in the independence actions by individual or team to create and implement new idea or vision." Kokou, (2011, P.7) considered autonomy as "an indicator to the employee's empowerment and encouragement to find innovative products or new internal process."

The researcher defines autonomy as a strategic behavior that refers to the independency of an organization in terms of developing, adopting and implementing creative new ideas, processes, systems, technologies and projects without considering common and current practices and trends in the market, for the purpose of gaining benefits from emerging opportunities.

Innovation

Referring to Pinchot's, (1986, P.11) book "Intrapreneuring", innovation does not mean invention. Invention is the act of genius in creating a new concept for a potentially useful new device or service. However, innovation differs from invention because when the invention is done, the second half of innovation begins, which involves turning the new idea and process into a tangible business success

This second step may be called implementation, commercial development, new venture creation, or a host of other names."

According to Okpara, (2007), "innovation is the process of converting the best ideas into reality, which generates a creative idea and a series of innovative events. Also innovation is the process that combines ideas and knowledge into new value. Innovation can take three types: 1). Innovation in processes, 2) Innovation in products or services and 3) Innovation in managing the organization, utilizing the human resources, and the ability to adopt proper techniques."

Hisrich, et al., (2008, P.69) have focused on product or service innovation, and stated "It includes new product development, product improvements, and new production methods and procedures." Additionally Hisrich, et al., (2008, P.148-149) indicated three major types of innovations: Type 1- Breakthrough innovation: refers to extremely distinctive innovations that often establish the foundation for future innovations in certain area of development;

- Type 2- Technological innovation: occurs more frequently than type 1 bove and in general is not at the same level of scientific discovery and advancement. Its offer advancement in the product and market area; and
- Type 3- Ordinary innovation: innovations that apply and benefit from type 2 above to offer better product or service or one that has a different –usually better–market appeal.

Rensburg, (2009, P.30) has provided and clarified innovation forms as follows:

a. Changes in the products or services an organization is already taking into the market;
b. Use of established products or services for a new product or service;
c. Changes in the market to which a product or service is applied away from the original market it was designed for;
d. Operational and logistical innovation. This can be seen as changing the way products or services are developed and delivered away from their original design; and
e. The highest level of innovation focuses on the development of an organization's central business model apart from its original business model.

Moreover Al Taee and Al Khafaji, (2009) have gone in the same direction, focusing on products and their features. “Innovation is the adoption of new ideas, products or processes. Products innovation involves the creation of new products, or add new features to existing ones, for the purpose of satisfying customer unmet needs and wants”. Manocha, (2012, P.197) has defined innovation as something "to renew or change.” Innovation refers to the creation and development of better or more effective products, processes, methods, tools, technologies, or ideas that are accepted and utilized by customers, markets, governments and society. While Abd AlRaheem (2014, P.54) considered innovation as something which “provide irregular solution[s] to solve problems or to meet requirements, taking into consideration applying new technology.”

The researcher defines innovation as the ability of an organization to provide and invest in something new or different on both internal and external scales, including talents, ideas, products, processes, methods, systems and services, to satisfy unmet requirements and needs of clients and markets.

Opportunities Generation

Al Sakarneh, (2005, P.7) has stressed the importance of defining and selecting available opportunities in the market, which are not recognized by others. While Al Sadi, (2011, P.17) has focused on the identification and exploitation of the opportunities that have never been exploited before by a combination of several activities, to recognize or identify the opportunities available. Additionally, Al Sadi has emphasized the importance of commencing new actions after the identification process.

Moreover Al Hadouri, (2013, P.98-99) discussed the opportunities investment process as "Consisting of creation, discovering, developing and evaluating, based on the type of strategic relationship and advantages. Subsequently entrepreneurial organizations operations can begin, through the ability to provide unmet needs and the acquisition of opportunities before other competitors. Also the types of management concepts vary from emphasizing the pursuit of all opportunities regardless of the available resources to focusing on the best investment of the available resources. The classification and pursuit process is considered above as one of the entrepreneurship basics and essence."

The researcher defines opportunities generation as the ability of an organization to create, distinguish and capture opportunities, which have never been exploited before by other competitors, based on business environment analysis and a deep understanding of company's objectives and internal and external capabilities.

Proactiveness

Scheepers, et al., (2008, P.53) have defined proactiveness as the aggressive implementation and follow-up actions to drive an enterprise toward the achievement of its goals and objectives, by adopting all possible means. Also they revealed that proactiveness has certain fundamental attributes such as the enterprise's disposition towards its competitors, organizational pursuit of favorable business opportunities and its attitude to being a pioneer or fast follower and a high regard for the initiative of employees. Hisrich, et al., (2008, P.69) have added to the above mentioned attributes the following additional traits: initiative, risk-taking, competitive aggressiveness and confidence, which are particularly reflected in the orientation and actions of top management. Finally Kokou, (2011, P.7) have connected proactiveness with the company's incentive of being different by exploiting opportunities.

The researcher defines proactiveness as the ability of an organization to face obstacles and changes and to create and utilize opportunities quickly in comparison with competitors on different scales.

Risk-taking

Lumpkin and Dess, (1996, P.144) have defined risk-taking as "the level to which top management is willing to make large and risky resource commitments". According to Scheepers, et al., (2008, P.53) "Risk-taking involves the willingness to make required human and financial resources available to exploit opportunities and launch new projects with uncertain outcomes and tentative predictable returns on investment. Although risks can be minimized by the knowledge and experience of an entrepreneur or company have of the opportunity or technology, or unique capabilities or networks to exploit the opportunity. Consequently uncertain outcomes can be managed and mitigated by engaging in experiments, test markets and trial runs."

The researcher defines risk-taking as the tendency of an organization to secure required human and financial resources for performing certain activities and ventures that have some potential uncertainties (opportunities and threats), in addition to have a flexible internal system that facilitates a quick decision-making process when required.

Sustainable Growth

Schermerhorn, (1996, P.164) discussed four types of master strategies at corporate and business levels, including growth, retrenchment, stability and combination. Growth strategies seek an increase in size and the expansion of current operations by considering that growth is necessary for long term stability and survival. There are different ways to pursue growth:

- Internally through concentration by using existing capabilities in new, efficient and productive ways without taking the risk of great shifts in direction through market development, product development and innovation; and
- Diversification: the acquisition of new businesses in related or unrelated scope of services, or investment in a new venture.

According to Mezher, (1997, P.56) "Growth in any country cannot happen without considering the surrounding environmental impacts. Therefore growth refers to the incremental increases in the quantities, levels, or sizes of particular variables relevant to the processes, issues, and outcomes under examination. The consequences of growth and its impact on the environment depend on three main variables: targeted population, technological implementation and resources availability."

Thompson and Strickland, (2001, P.263) in their book "Strategic Management: concepts and cases" have discussed strategies for achieving and sustaining rapid growth. So organizations which are Concentrated to growing their revenues, mostly have to apply group of strategies covering three horizons as follows:

- Horizon 1: Strategic initiatives to reinforce their position in the existing market (present product/ service line, expand into new geographic areas);

- Horizon 2: Strategic initiatives that focuses on enhancing existing internal business capacities for the purpose of entering new businesses with promising growth. Companies that have the potential for growth have to stay alert and ready for opportunities, to be able to jump into new business landscape where there is a premise of rapid growth and where their experience, intellectual capital and technological capabilities will prove valuable in gaining rapid market penetration; and
- Horizon 3: Strategic initiatives to plant the seeds and construct foundations for new ventures and trends in businesses that do not yet exist. Such initiatives can require financial support for research and development (R&D) projects, setting up an internal venture capital fund to invest in promising startup companies attempting to create new and future industrial trends, or acquiring a number of small startup companies experimenting with technologies and product ideas that complement the company's present business.

Leitch, et, al., (2010) have defined growth as both an "internal process of development" and an "increase in amount." Wheelen and Hunger, (2012, P.894) have defined growth strategies as "directional strategy that expands a company's current activities."

Achieving sustainable growth is an elusive goal for all companies in all business sector. Therefore Eitzen and Sartorius (2012, P.79) have considered sustaining business growth as "one of the key challenges that business leader's face. In recent years there has been an increased interest in growth as a performance variable. Some of the significant benefits of growth include gaining superior strategic positioning and producing superior value."

Therefore we can summarize that sustainable growth is a business strategy that focuses on maintaining organizations through long term growth. This is accomplished by applying different plans and tactics to be able to enhance their ability to survive in a dynamic and competitive business environment by improving current services/products and providing new and diverse services/products for the purpose of reinforcing and expanding in current markets or for entering new markets.

Sustainable Growth Elements

This research focuses on four elements or indicators for sustainable growth as per researches' conceptual model:

1) Markets growth;
2) Branches growth ;
3) Offering new services; and
4) Awarding new projects.

Hisrich, et al., (2008, P.150) stated that "in an industrial market, firms may call their products "new" when slight changes or modifications have been done in the appearance of the product".

Al Taee and Al Khafaji (2009) in their book "Strategic Information Systems, perspective of Strategic Advantage" studied the first three elements, by identifying several ways in which organizations can grow:

- **Product growth**: This includes length (produce products of the same kind), depth (variants of existing products) and width (new products which complement existing ones). This corresponds with the third element, offering new services;

- **Functional growth**: This occurs by adding extra business functions. This could be achieved through vertical integration with value chain, which may provide benefits from direct control over supply, distribution or services, such as cost reduction, quality assurance or reliability. Sometimes the new functions are support services. This corresponds with the third element, offering new services;
- **Geographic growth**: This type of growth happens through acquiring companies and selling in new locations. This corresponds with the first and second elements which are markets and branches growth; and
- **Lateral growth**: This occurs by applying excess capacity, by-products or expertise in order to address new market growth. This corresponds with the first and second elements which are markets and branches growth.

Therefore offering new services refers to the organization's ability to provide modified, new and diverse services and specialties, which differ from traditional and core range of services, as a response to market changes and needs.

Also Al Taee and Al Khafaji (2009) discussed alliance strategies, which refer to establishing new business connections and alliances with customers, clients, suppliers, competitors, consultants and other companies (mergers, acquisitions, associations, joint ventures, consortium, forming virtual companies, etc..), which are playing a pivotal role in the market's growth.

Thompson and Strickland, (2001, P.221) stated that "companies opt to expand outside their domestic market for any of the four major motives:

- to gain new customers and clients;
- to reduce costs and consequently price;
- to improve core competences and skills; and
- to spread their business risk across a wider market base."

Consequently markets growth refers to the organization's ability to exist in the markets of different countries; driven by the existence of opportunities, regardless of market location. While branches growth refers to the organization's ability to gain a full registration to establish and run permanent offices in the same or different countries. Finally awarding new projects refers to the organization's ability to apply and win new projects in new and diverse service specialties in different markets and from different clients, including both public and private sectors.

Growth Drivers

Eitzen and Sartorius, (2012, P.80-83) have examined a series of endogenous and exogenous drivers of growth. The endogenous drivers of growth include resources, motivation and strategy, whilst the exogenous drivers integrate industry and economy level effects that influence demand and supply.

- **Endogenous:** covers the internal resources of a company, its level of motivation to achieve sustained growth and its choice and implementation of strategy. Therefore, corporate entrepreneurship is considered as one of the main endogenous drivers, due to its importance in generating demand and has been defined as being primarily motivated by the pursuit of opportunities. This is opposed to those managers solely concerned with the efficient management of internal resources.

- As a result of this pursuit of opportunity, high growth tends to be strongly linked with an organization's entrepreneurial behavior. In fact, growth is considered a reasonable result of innovative, proactive and risk-taking behavior on the part of the organization.
- **Exogenous:** These variables refer to industry and economy influences on demand and supply.

Special consideration should be given to endogenous drivers of growth which focus on controlling an entire organization's resources in order to achieve sustainable growth.

Barriers and Constraints of Growth

Carter and Jones–Evans, (2006, P.111-116) focused on small firms however, they discussed and analyzed main external and internal barriers as well as growth constraints that affect growth in general as follows:

- **External:** A rapidly changing environment industry structure, competition and market limitations; and
- **Internal:** Owner-manager and size-related constraints, inadequacy of existing assets for underpinning growth and difficulties associated with acquiring, forming and managing a team.

An organization's ability in understanding external and internal barriers of growth help in overcoming or mitigating their effects and consequences

Engineering Consultancy Companies

Jumah, (2014, P.20) mentioned that the UN conference on trade and development held in New York and Geneva (2002), considered engineering consultancy as a key professional service sector that has flourished during the 20th century and continues to do so. The Middle Eastern market considered as one of the primary driving forces behind overseas expansion of engineering consultancy companies in the 1960s and 1970s and has remained significant since then. The growth of international aid financed by different international agencies, or multilateral lending institutions has also provided an important market for engineering consultancy firms.

Engineering consultancy companies constitute a key component of local economics due to their "pioneer role in the development projects success, through performing many tasks such as: engineering and architectural works, economic and financial studies, in parallel to project management and construction supervision" (Othman, 2010, P.2).

According to the International Federation of Consulting Engineers (FIDIC), engineering combines the fields of science and math to solve real world issues and problems that improve the standards and level of life in all over the world. Therefore what is really distinguishes an engineer is his ability to implement ideas in a balanced manner, which considers financial factor and practical approach. While a consulting engineer is a professionally qualified engineer in private practice, maintaining an engineering office, either alone or in an association with other engineers, employing staff to provide consultancy services. A consulting engineering firm may be organized in various ways depending on the size and type of its operation (fidic.org).

A/E Business Council

The Architects/Engineers Business Council (A/E Business Council) is a membership and representational association offering professional services to architecture and engineering consulting companies based in Jordan. Its primary objectives are to promote quality, excellence and competitive standards in the engineering consulting sector and to facilitate trade through best practices both in Jordan and in overseas export markets. The A/E Business Council is a not-for-profit association that supports its members through networking, consultation with government agencies concerning professional and regulatory issues, information sourcing, business training and education and the promotion of international trading links. The A/E Business Council is supported by and works closely with the Jordan Engineers Association (JEA) and the engineering consultancy companies (www.aeb-council.org).

The A/E Business Council was founded in 2004 as an informal discussion group of leading professional companies in Jordan meeting to exchange views and sector experiences. From May 2006, the A/E Business Council was established as an operational membership association providing direct professional services and membership benefits (www.aeb-council.org).

Engineering Consultancy Companies Scope of Services

Engineering consultancy companies provide several consultancy services, which include the following:

- Architectural services (building, urban /rural planning, landscape and interior design);
- Building services (structural, mechanical, drainage, electrical, lead, plumbing and fire protection);
- Transportation services (streets and highways, bridges and tunnels, airports and marine facilities);
- Utility services (water, storm water and drainage, wastewater and irrigation);
- Geotechnical services (buildings and other structures); and
- Other technical services (survey, material testing, green building, environmental, health, safety, traffic assessments, management, operation and training).

2.2 Previous Studies

Based on the current research topic, the following is a summary of main previous studies conducted in both English and Arabic languages:

1- **Zahra (1996), Governance, Ownership, and Corporate Entrepreneurship: The Moderating Impact of Industry Technological Opportunities**

The aims of this study were to focus on entrepreneurial risk-taking, examine the association of governance and ownership systems at the corporate entrepreneurship level and to evaluate the argument that the study variables are moderated by the level of technological opportunities. The population consisted of CEOs or the highest-ranking executives in manufacturing companies on the 1988 Fortune 500 list in the USA. The research applied descriptive and analytical analysis. The key finding was that two variables were positively and significantly associated with corporate entrepreneurship in industries with high technological opportunities: high levels of executive ownership and long-term institutional ownership. The main recommendation was to encourage researchers to conduct comparative studies of companies in high and low technology industries.

Zahra's (1996) study is different from current research as stated in the aforementioned paragraph through the focus on investigating different variables and population. However, main similarities between the two studies include focusing on similar corporate entrepreneurship dimensions (risk-taking and innovation) as well as population was largest industrial corporations, which are different in type but close in some characteristics with part of the current research population.

2- **Barringer and Bluedorn (1999), The Relationship Between Corporate Entrepreneurship and Strategic Management**

The aim of this study was to examine the relationship between corporate entrepreneurship intensity and five defined strategic management practices including: scanning intensity, planning flexibility, planning horizon, locus of planning and control attributes.

The population were manufacturing firms located in the mid-western and southern regions of the USA and the sample was 169 firms. The main result of this research was in indicating a positive relationship between corporate entrepreneurship intensity and scanning intensity, planning flexibility, locus of planning and strategic controls.

Barringer and Bluedorn (1999) conducted a study that is different from the current research as stated in the previously mentioned paragraph, primarily in investigating different variables and population. The main similarities of the studies are regarding the considered strategic management variables (five practices). These are included indirectly in the corporate entrepreneurship planning activities and can be considered as driving forces for consequence dimensions, especially opportunities generation, in addition to providing valuable theoretical background information.

3- **Al Sakarneh (2005), Entrepreneurship Strategies and its Role in Achieving Competitive Advantage and improving Performance in Communication Companies on Jordan (2004-2005)**

السكارنه (٢٠٠٥)، إستراتيجيات الريادة و دورها في تحقيق الميزة التنافسية و تحسين الأداء لشركات الإتصالات في الأردن (٢٠٠٤-٢٠٠٥)

The aims of the study were to examine the relationship between entrepreneurial strategies (innovation, creativity, risk-taking, proactiveness and uniqueness) and competitive advantage, and entrepreneurial strategies' role to improve the performance. The population were 109 managers working in four Jordanian communication companies and the sample was 50 questionnaires. Descriptive and analytical methodologies were used. The main result showed positive relations between entrepreneurship strategies and competitive advantage. The primary recommendations were to conduct further research on entrepreneurship strategies and in different sectors, in addition to placing emphasis on innovation, creativity, decision making, risk-taking, uniqueness and proactiveness through several actions.

Al Sakarneh's (2005) study is different from current research as stated in the previous paragraph, in investigating different variables, growth elements and population. While the main similarities are in regards to targeting the manager level in companies and providing valuable theoretical background information related to entrepreneurship and its dimensions.

4- **Hattab (2007), The Effect of Environments Dimensions on Growth of Female Entrepreneurial Projects in Jordan**

The aims of this study were to measure the effects of various elements of technological, social, economic and legal-political environments on the growth of female entrepreneurial projects. In addition, the aim was to investigate the relation between external environmental factors and the growth and development of entrepreneurial projects.

The population was 22,244 women entrepreneurial projects in Jordan. The sampling unit was any woman who had established and ran her own business; the sample was 384 in total. Descriptive and analytical methodologies were used. The main result was that there was a direct positive impact of elements of a technological environment on the growth of women entrepreneurial projects. The main recommendations were regarding formulating a strategy to accelerate the growth and development of women's entrepreneurial projects, in addition to increasing opportunities and creating an environment that supports women's participation in the market.

Hattab's (2007) study is different from current research as stated in aforementioned paragraph, in investigating different variables and population. Main similarities include: investigating the growth of entrepreneurship projects, providing valuable theoretical background information and focusing on useful factors of growth and the development of projects (increase in number of projects, development of project's activities and sizes, capital, number of employees and expansion), which are considered similar to the current research's selected elements of sustainable growth variable.

5- **Al Manasra (2008), The Impact of Entrepreneurial Orientation Dimensions of Managers on Strategic Decisions Effectiveness on Jordanian Public Shareholding**

المناصرة (٢٠٠٨)، أبعاد التوجه الريادي للمديرين و أثرهاعلى فاعلية القرارات الإستراتيجية في الشركات المساهمة العامة الأردنية

The aims of this study were to clarify the landscape of entrepreneurial orientation construct (innovation, risk-taking, proactiveness, autonomy and competitive aggressiveness) and to propose a framework for exploring the impact of the entrepreneurial orientation dimensions on the effectiveness of strategies decisions. The population were Jordanian public shareholding companies and the sample was 330 questionnaires which were distributed to top managers. Descriptive and analytical methodologies were used. The main result was that the entrepreneurial orientation dimension of managers has a significant impact on the overall effectiveness of strategic decisions. The main recommendations were that organizations should adopt different entrepreneurial orientation dimensions in order to reach effective strategic decisions which ultimately help to achieve growth and success, in addition to building an organizational culture that mobilizes the entrepreneurial orientation behavior inside organizations.

Al Manasra's (2008) study is different from current research as stated in the aforementioned paragraph, in investigating different variables and population. While the main similarity is in regards to providing valuable theoretical background information related to entrepreneurship and its dimensions.

6- **Duobienė (2008), The Role of Organizational Culture in Sustaining Corporate Entrepreneurship**

The aims of the study were to analyze how corporate entrepreneurship could be sustained in growing organizations, to present the analysis of corporate entrepreneurship concepts and research and to reveal the influence of corporate entrepreneurship on organizational performance, and therefore display its value to organizations. The main results were that organizational culture involves environmental, organizational and individual levels of variables that influence corporate entrepreneurship. Also that entrepreneurial organizational culture can support innovations through consider important activities; such as rewarding innovation is supporting behavior that is the essence of entrepreneurship. The main recommendation was regarding suggesting investigating and checking new methods to an organization's improvement of competitive advantage.

Duobienė's (2008) study is different from current research as stated in the previously mentioned paragraph by investigating different variables. While main similarities regard providing valuable theoretical background information and providing special focus on the role of organizational culture on corporate entrepreneurship, which is the real initiator for the main entrepreneurship dimensions, especially innovation.

7- **Othman (2010), The Impact of Implementing Quality Measures on Improving the Outputs of Engineering Consultants Offices in Jordan**

عثمان (٢٠١٠)، أثر تطبيق معايير الجودة في تحسين المخرجات للمكاتب الإستشارية الهندسية في الأردن

The aims of the study were to identify the impact of implementing quality measures on improving the outputs of engineering consulting offices in Jordan, including customer focus, role of leadership, involvement of employees, decision making and continuous improvement. The population were all engineering consulting offices, under the coverage of the Jordanian Engineering Association (JAE). The sampling unit was all employees in senior management and the sample was 133 out of 207 distributed questionnaires. Descriptive and analytical methodologies were used. The main result was that there was significant influence on the implementation of quality measures on the output of engineering consulting offices, especially in regards to participation in decision making. The main recommendation was that engineering consulting offices should implement quality measures.

Othman's (2010) study is different from current research as stated in the previously mentioned paragraph in both the aim and consequently in investigating different variables. While main similarities with current research are regarding the population and the sampling unit as well as providing valuable theoretical background information about engineering consulting offices.

Al Shikh Issa (2010), The Effect of Entrepreneurship Dimensions on the Performance of Small Industrial Businesses Operating in the Capital Amman

الشيخ عيسى (٢٠١٠)، أثر أبعاد الريادة في أداء الأعمال الصناعية الصغيرة العاملة في العاصمة

The aims of the study were to investigate the effect of entrepreneurship dimensions (innovation, creativity, initiation, risk and uniqueness) on the performance of small industrial businesses and to investigate the effect of some mediating variables on small industrial businesses. The population were all small industrial businesses in Amman, Jordan, which represent 1400 projects. The sampling unit was owners of small industrial businesses in Amman who are also considered the managers for these businesses. The sample was 311 projects. Descriptive and analytical methodologies were used. The main result was that there was a significant effect on the combined and individual entrepreneurship dimensions found in the performance of small industrial businesses. The primary recommendation was that the owners of industrial businesses should encourage their employees to develop the dimensions of entrepreneurship to improve the performance of small industrial businesses.

Al Shikh Issa's (2010) study is different from current research as stated in the aforementioned paragraph in investigating different variables, population and growth elements represented by performance. While the main similarity is in regards to providing valuable theoretical background information about entrepreneurship and its dimensions.

8- **Kelley (2011), Sustainable Corporate Entrepreneurship: Evolving and Connecting with the Organization**

The aims of the study were to help corporations avoid a cyclical path (enthusiastic support and investment, diminished interest and program cuts), to develop capabilities for introducing risk into mature and efficient environments and to show how established organizations can introduce corporate entrepreneurship into their core scope of services. The population were 12 industry-leading organizations in the USA. All of these organizations were building and supporting internal programs to improve the entrepreneurships' management. Site visits were made to each company for interviews with representatives from different managerial and functional levels in addition to business groups, all of whom played key roles in their company's entrepreneurship programs. The main results highlighted that building sustainability for corporate entrepreneurship is an evolving process, so managers need to focus on elements such as strategy, structure and process as initial starting points that require adjusting as conditions change and as more knowledge and experience is gained with entrepreneurship. Main recommendations were related to applying the evolve and connect model by (1) providing strategic guidance and framework for entrepreneurial activities, (2) establishing flexible structures to address the firm's objectives and needs for entrepreneurship within the current context while setting expectations about integration with the rest of the organization and evolution over time; and (3) introducing processes and methods as an information source for the evaluation and problem solving efforts of informed entrepreneurs and managers.

Kelly's (2011) study is different from current research as stated in the aforementioned paragraph in developing the evolve and connect model, which is aimed at organizations with currently low or less adequateentrepreneurial capabilities as it is designed to help in building and sustaining their abilities in a way that makes progress. Main similarities include focusing on an important sector represented by leading organizations and providing a full model for improving entrepreneurship on an organization scale.

9- **Al Sadi (2011), The Impact of Entrepreneurial Orientation and e-Business Adoption on Banks Performance in Jordan**

السعدي (2011)، أثر التوجه الريادي و تبني الأعمال الإلكترونية على أداء المصارف العاملة في الأردن.

The aims of the study were to analyze the impact of entrepreneurial orientation (innovativeness, proactiveness and risk-taking) and e-business adoption on bank's performance and to identify the relationship between entrepreneurial orientation and e-business adoption. The population were all 23 banks in Jordan till the end of 2009. The sampling unit was top management and the sample consisted of 151 questionnaires. Descriptive and analytical methodologies were used. The main results were that banks had a high entrepreneurial orientation and dimensions of entrepreneurial orientation varied among each other in terms of importance and effect on performance.

The main recommendation was banks should adopt entrepreneurial orientation dimensions of innovativeness and proactiveness in order to improve their performance. Another recommendation was also to consider encouraging managers to adopt a moderate risk-taking style in decision making in order to exploit the new opportunities that may appear in the financial market and gain higher returns.

Al Sadi's (2011) study is different from current research as stated in aforementioned paragraph, in investigating different variables, population and growth elements. While the main similarity is in regards to providingvaluable theoretical background information about entrepreneurship and its dimensions.

10- **Malik and Bin Mahmood (2012), Facilitating Corporate Entrepreneurship in Public Sector Higher Education Institutions: a Conceptual Model**

The aims of the study were to develop a conceptual model for corporate entrepreneurship in state higher education institutions. The proposed model is intended to depict the main qualifications that relate to corporate entrepreneurship within the targeted sector and to study the impact of corporate entrepreneurship on institution's education performance as well as to investigate factors influencing its continuous performance. The population were public sector higher education institutions. The main results concluded that these institutions need to provide space for entrepreneurial initiatives and activities, develop entrepreneurial frameworks, principles and opportunities and encourage entrepreneurial practices internally, without transforming responsibilities to external parties through outsourcing, contracting out or privatization.

The study of Malik and Bin Mahmood (2012) differs from the current research in the aforementioned paragraph, in investigating different variables and population. Main similarities regarded mentioning similar corporate entrepreneurship and performance elements, focusing on state higher education institutions (which are different in type but close in characteristics with the current research population), results supporting the adoption of entrepreneurial activities on large scale institutions and providing valuable theoretical background information.

11- **Eitzen and Sartorius (2012), Strategies for Sustainable Growth in JSE-Listed Companies**

The aims of the study were to investigate some of the variables that influence companies' growth, their choice of strategy and to expand the understanding of growth by examining the growth drivers, strategies and sources of growth. The population was 202 JSE-listed companies in South Africa, while the sample were CEOs and executives of the companies. Descriptive and analytical methodologies were used. The main result suggested that high growth companies appear to have adopted a larger variety of strategies than average and low growth companies, which is an indication of the understanding of competitive environments as well as on the focusing on the development of plans to influence growth.

The study of Eitzen and Sartorius (2012) is different from current research as stated in the aforementioned paragraph, in investigating different variables and population. Main similarities included: focusing on an important sector (established companies), targeting a similar sampling unit (management level), providing valuable theoretical background information related to growth, connecting entrepreneurship with growth and showing the importance of different strategies adoption.

12- **Shamsuddin, et al (2012), The Dimensions of Corporate Entrepreneurship and the Performance of Established Organization**

The aims of the study were to identify and confirm corporate entrepreneurship dimensions which were represented by proactiveness, risk-taking, innovations and self-renewal that influence financial performance, represented by the growth of sales, and to examine the impacts of certain moderating variables. The population was the Malaysian government's linked corporation, while the samples was Jcorp and Johor Groups. Quantitative and qualitative techniques were used in this study. The main results showed that proactiveness has a positive and significant impact on financial performance, risk-taking did not have a direct effect on financial performance and that innovation and self-renewal are negatively related to financial performance. The main recommendations were regarding conducting future research on other factors affecting corporate entrepreneurship (environmental, external and other organizational factors), considering other new dimensions (board of directors and absorptive capacity factor) and focusing on innovation, risk-taking and self-renewal dimensions.

The study from Shamsuddin, et al. (2012) is different from current research as stated in the previously mentioned paragraph, by investigating financial performance variable, self-renewal as a dimension of corporate entrepreneurship and population. Main similarities with current research include: focusing on an important sector, providing valuable theoretical background information related to corporate entrepreneurship studies and dimensions as well as connecting entrepreneurship with growth of sales.

13- **Felı´cio, et al. (2012), The Effect of Intrapreneurship on Corporate Performance**

The aims of the study were to understand the influence of corporate entrepreneurship on the performance of companies and to comprehend its effect on financial performance, productivity, growth and improvement. The population were Portuguese companies. Sources of data included a database of 3,906 medium-sized companies, as well as detailed information regarding the size and sector of the companies, balance sheet data, in parallel to an on-line survey. The sample contains 217 medium-sized companies. Descriptive and confirmatory analysis method based on structural equation modeling was used. The main results were related to highlight the importance of the results, which should be contributed to entrepreneurship theory and the resource based view, and the confirmation of the relationship between corporate entrepreneurship and performance. The results were based on medium-sized enterprises however, the results can be applied to other contexts and used as a means to study their importance in the case of small and large companies. The main recommendation was regarding conducting future studies to verify the effects of firm size and age periods on the model.

The study of Felı´cio, et al. (2012) is different from current research as stated in the aforementioned paragraph, through investigating different variables such as competitive energy (as part of intrapreneurship), financial performance, productivity, growth and improvement, in addition to the population. Main similarities are in regards to studying similar corporate entrepreneurship factors (innovation, risk, proactiveness and autonomy) and examining similar growth and improvement sub-variables in relation to sustainable growth elements.

2.3 Features of Current Study as Compared with Previous Studies

With reference to the above review process, listed below are the main points which can identify the primary differences among the studies and distinguish the current research from previous studies:

1- The aim of the current research is to investigate the relationship between corporate entrepreneurship and sustainable growth, while previous studies focused mainly on: management strategy, different growth elements, organization culture and role, comparative advantages and performance;
2- The selected corporate entrepreneurship dimensions for the current research are: risk-taking, opportunities generation, innovation, proactiveness and autonomy. Previous studies had focused on most of the above dimensions, except opportunities generation;

3- The selected sustainable growth elements for the current research are: markets growth, branches growth, offering new services and awarding new projects. Previous studies focused mainly on the number of projects and the extension of services, in addition to other elements such as growth in sales and profit;
4- The suggested elements to measure sustainable growth were chosen based on understanding the scope of services and characteristics of engineering consultancy companies;
5- The environment of the current research is engineering consultancy companies located in Amman, Jordan. While all of the previous studies related to corporate entrepreneurship were conducted in USA, Portugal, Malaysia or South Africa;
6- The previous studies conducted in Jordan discussed entrepreneurship and entrepreneurship orientation. While the current research is focusing on corporate entrepreneurship; and
7- The population of the current research are local engineering consultancy companies, while previous studies focused mainly on industrial, commercial and educational sectors. Although one previous study had studied engineering consultancy companies in Jordan but in a different context, related to implementing quality measures.

Chapter Three: Methods and Procedures

Chapter Three: Methods and Procedures

This chapter discusses the applied methods and procedures by the researcher to investigate the relationship between current research variables, represented by corporate entrepreneurship and sustainable growth.

3.1 Research Methodology

The current research follows the descriptive and analytical statistical methodologies for examining and evaluating variables and hypotheses.

3.2 Population

The study population is represented by 33 local engineering consultancy companies till the beginning of May 2014. These companies are members of the Architects/ Engineers Business Council (A/E Business Council) (www.aeb-council.org).

The A/E Business Council is a private, non-governmental and not-for-profit professional association of leading Jordanian architectural and engineering consultancy companies located in Amman, Jordan. The current membership of these companies is about 33 firms with different employees' categories including management, architects, engineers and support staff.

3.3 Sampling Unit and Sample

The sampling unit consists of supervisory management level for 33 engineering consultancy companies including:

- CEOs;
- Managing directors as well as administrative and technical assistants;
- Operations directors as well as heads of departments and heads sections; and
- 5% of team leaders including engineers, architects, specialists and draftsmen.

Table 3.1 was developed by the researcher based on data provided by A/E Business Council and from various companies to represent the sampling unit characteristics based on the above mentioned categories:

Table 3. 1: Sampling Unit.

No.	Company	CEO	MD/ Assistants	ODs, HoD & HoS	TLs	Total
1	Consolidated Consultants Engineering & Environment	1	2	10	22	35
2	Consulting Engineering Center (Sajdi & Partners)	1	0	8	6	15
3	Dar.Al-omran Planners-Architects-Engineers	1	2	8	6	17
4	Arab Center for Engineering Studies	1	2	6	3	12
5	Sigma-Consulting Engineers	1	2	7	9	19
6	Arabtech Jardaneh Engineers & Architects	1	2	20	23	46
7	Maisam Architects & Engineers	1	1	3	2	7
8	Engicon	1	2	9	3	15
9	Associated Consulting Engineers (ACE)	1	1	7	3	12
10	SMDudin- Architects & Engineers	1		2	1	4
11	Tibah Consultants	1		2	1	4

12	Bitar consultants Architects Engineers and Project Managers	1	1	3	3	8
13	Eco Consult	1		2	1	4
14	Sobeh Consulting Engineering	1	2	6	3	12
15	Mostaqbal Engineering & Environment Consultants	1	2	5	3	11
16	Baha Consulting Engineering	1	1	2	3	7
17	Faris and Faris Architects	1		4	2	7
18	Faris Bagaeen Architects Engineers Consultants	1		3	1	5
19	Design Associates and Research Bureau (DARB)	1		2	1	4
20	Archisys	1		2	1	4
21	Dar Al-Omran Infra	1		4	2	7
22	Spectrum Consulting Engineers	1		2	1	4
23	Symbiosis Design Ltd.	1	1	3	1	6
24	Omrania and Associates	1	1	3	2	7
25	Tahan and Bushnaq Consultants	1		2	1	4
26	Meda Consulting Engineers	1		3	1	5
27	Diran and Masri Consulting Engineers	1		2	1	4
28	Yaghmour and Associate	1		1	0	2
29	CM2 Construction Management Services	1		2	1	4
30	Panorama Consultants Engineers	1		3	1	5
31	Ruqn Al-Handasa Consultants Engineers	1		4	1	6
32	Imad Dabbas Office	1		1	0	2
33	Turath Office	1		2	0	3
Sub- Totals		**33**	**22**	**143**	**109**	
Grand Total		**307**				**307**

Out of 307 planned sampling unit, 217 questionnaires were distributed and only 155 questionnaires were collected. 155 questionnaires represents 50% out of 307 planned questionnaires and 71% out of 217 actually distributed questionnaires. All details will be discussed later (refer to 3.7).

3.4 Source of Information

The source of information consists of two main categories:

- **The primary source** of information is based on a structured questionnaire developed by the researcher to cover all research variables and elements. For the questionnaire distribution and collection, soft copies using surveymonkey.com, have been used to facilitate both processes in order to reach the highest number of respondents. Surveymonkey is an online survey software that helps in creating, distributing, collecting and analyzing survey questionnaires. The questionnaire comprises of one main covers two components, statements to measure dimensions of corporate entrepreneurship and statements related to measure the elements of sustainable growth;
- **The secondary sources** of information, which are based mainly on previous sources, include:
    1. Dissertations;
    2. Theses;
    3. Researches;
    4. Books; and
    5. Electronic websites.

3.5 Research Instrument

The researcher developed a structured questionnaire to investigate the relationship between five corporate entrepreneurship's dimensions and four sustainable growth's elements in engineering consultancy companies in Jordan.

The questionnaire was reviewed by seven reviewers; five inside Jordan from Amman Arab University and Petra University, one outside Jordan from the British University in Egypt and one from top management of one of the leading engineering consultancy companies in Jordan (refer to Appendix 2).

The review process helps researchers benefit from reviewer's wide academic and professional knowledge and experiences. All comments and suggestions on the questionnaire content were considered, consequently the questionnaire was updated before the distribution process.

The questionnaire configuration was based on Likert Scaling, which considers that the strength/intensity of experience is linear, i.e. on a range from strongly agree to strongly disagree, and makes the assumption that attitudes can be measured. Therefore targeted respondents may be offered a choice of five, seven or even nine responses with the neutral point simplypsychology.org). The researcher has used the format of five-level Likert item:

1) Strongly disagree;
2) Disagree;
3) Neutral;
4) Agree; and
5) Strongly agree.

For the final revision of the questionnaire refer to Appendix 1.

3.6 Reliability Test

It is important to make sure that the instrument developed to measure a particular concept is indeed accurately measuring the variable. A reliability test was carried out using Cronbachs' alpha which measures the internal consistency of a construct. The recommended minimum acceptable limit of reliability (alpha) for this measure is (0.60) (Sekaran, 2003). Table 3.2 reveals Cronbachs' alpha test for each of the dimensions and elements in the questionnaire.

Table 3. 2: Reliability Analysis of the Study Scales

Variables	Cronbachs' alpha value
Risk-taking	0.775
Opportunities Generation	0.674
Innovation	0.776
Proactiveness	0.785
Autonomy	0.631
Market Growth	0.808
Branches Growth	0.660
Offering New Services	0.810
Awarding New Projects	0.840

The result showed a value of (0.934) for all of the items in the questionnaire as well as alpha for each variable (dimension or element) that is greater than the accepted percent of 0.60, which is considered as a reasonable value indicating the tool consistency that enhanced its use for the study.

3.7 Research Procedure

Once the researcher decided on the research topic, variables and population, then the A/E Business Council was contacted in order to facilitate the work. Consequently A/E Business Council conducted the following:

- Provided members directory;
- Reviewed questionnaire before distribution; and
- Facilitated communication with all targeted companies.

The researcher contacted all consultancy engineering companies by visits or phone calls in order to distribute online questionnaires to targeted supervisory management level based on random distribution.

The distribution process started from the 8th of November 2014 and finished on 18th January 2015.

Due to several reasons, mainly related to company policies, 12 companies rejected participating in the current research. Consequently 21 out of 33 companies agreed to participate; these reasons will be discussed later (refer to 3.9).

Table 3.3 provides full details about companies which accepted or rejected participating in the current research, in addition to full details about the distribution and collection process per company:

Table 3. 3: Details of Questionnaire Distribution and Collection Processes

No.	Company*	Planned no. of Questionnaires to be distributed	Actual Distributed Questionnaires	Actual Collected Questionnaires	% of Return
1	Consolidated Consultants Engineering & Environment	35	35	16	46%
2	Consulting Engineering Center (Sajdi & partners)	15	0	0	
3	Dar.Al-omran Planners-Architects-Engineers	17	0	0	
4	Arab Center for Engineering Studies	12	12	6	50%
5	Sigma-Consulting Engineers	19	0	0	
6	Arabtech-Jardaneh Engineers& Architects	46	46	46	100%
7	Maisam Architects& Engineers	7	7	4	57%
8	Engicon	15	15	14	93%
9	Associated Consulting Engineers (ACE)	12	12	8	67%
10	SMDudin- Architects & Engineers	4	0	0	
11	Tibah Consultants	4	0	0	
12	Bitar Consultants Architects Engineers and Project Managers	8	8	5	63%
13	Eco Consult	4	4	4	100%
14	Sobeh Consulting Engineering	12	12	7	58%
15	Mostaqbal Engineering & Environment Consultants	11	11	7	64%

16	Baha Consulting Engineering	7	0	0	
17	Faris and Faris architects	7	7	5	71%
18	Faris Bagaeen Architects Engineers Consultants	5	5	2	40%
19	Design Associates and Research Bureau (DARB)	4	4	2	50%
20	Archisys	4	0	0	
21	Dar Al-Omran Infra	7	7	7	100%
22	Spectrum Consulting Engineers	4	4	4	100%
23	Symbiosis Design Ltd.	6	6	3	50%
24	Omrania and Associates	7	7	5	71%
25	Tahan and Bushnaq Consultants	4	0	0	
26	Meda Consulting Engineers	5	5	3	60%
27	Diran and Masri Consulting Engineers	4	0	0	
28	Yaghmour and Associate	2	0	0	
29	CM2 Construction Managements Services	4	0	0	
30	Pannorama Consultants Engineers	5	5	3	60%
31	Ruqn Al-Handasa Consultants Engineers	6	0	0	
32	Imad Dabbas Office	2	2	2	100%
33	Turath Office	3	3	2	67%
Grand Total		307	217	155	

*Companies with grey shade have not participated in this research

This means that 155 questionnaires were collected, which represents 50% out of 307 planned questionnaires, and 71% out of 217 questionnaires, which represents questionnaires that were actually distributed. Out of 155 collected questionnaires, 152 questionnaires where used in the statistical analysis and three were not used due to incompleteness.

3.8 Research Delimitations

- **Place Boundary** for the current research are the companies of A/E Business Council members located in Amman, Jordan;
- **Time Boundary** for the current research is during the second semester of the academic year 2014-2015;
- **Human Resources Boundary** for the current research covers supervisory management level of engineering consultancy companies; and
- **Scientific Boundary** for the current research is investigating the relationship between corporate entrepreneurship and sustainable growth in engineering consultancy companies in Amman, Jordan. Corporate entrepreneurship covers five dimensions: risk-taking, opportunities generation, innovation, proactiveness and autonomy dimensions. Sustainable Growth includes four elements: markets growth, branches growth, offering new services and awarding new projects elements.

3.9 Research Limitations

The main limitations of this research are:

- Extensive communication and follow-up efforts were required to encourage engineering consultancy companies to accept the distribution and filling out of questionnaires in a timely manner;
- The researcher works with one of the engineering consultancy companies; this was considered positive in terms of knowledge and personal connections, although some companies considered her as a competitor representative;

- Lack of previous research in the field of corporate entrepreneurship in general, especially in Arabic (up to the researcher's knowledge);
- Lack of previous research that considers similar sustainable growth elements (up to the researcher's knowledge);
- Some companies rejected participating due to internal policies, large workloads and difficulty in communication; and
- Length of questionnaire in terms of the large amount of statements has affected the rate of filling negatively.

3.10 Statistical Methods

After finalizing the collection process of related information of research variables through the questionnaire, the analysis process was conducted using Statistical Package for Social Science Software (SPSS) as follows:

- Measures of central tendency, including mean, to provide description for the research variables and to measure the importance of questionnaire statements;
- Measures of dispersion, including standard deviation to show the dispersion of the questionnaire responses from the mean;
- Multiple regression analysis, which is a statistical process for estimating the relationships among independent variables from dependent variables; and
- Cronbachs' alpha, is used as a reliability test to measure the internal consistency of a construct, in terms of how closely related a set of items are as a group.

Chapter Four: Data Analysis and Results

Chapter Four: Data Analysis and Results

This chapter discusses the findings of statistical analysis for all research variables and discloses hypotheses' results.

4.1 Sample Characteristics

As discussed in chapter three, the sampling unit consists of the supervisory management level for 33 engineering consultancy companies. Out of 155 collected questionnaires from 21 companies, 152 questionnaires were used in the statistical analysis.

The tables below present the frequency and percentages for several sample's characteristics based on demographic information as follows.

Table 4. 1: Sample's Distribution based on Gender

Category	Frequency	Percentage
Male	78	51.3
Female	74	48.7
Total	152	100.0

Table 4.1 shows that the sample can be considered balanced in terms of gender with 78 males, which represent 51.3% of the total share, and 74 females, which represent 48.7% of the total share.

Table 4. 2: Sample's Distribution based on Education

Category	Frequency	Percentage
High school	0	0
Diploma	3	2
Bachelor	106	69.7
Msc	41	27.0
Phd	2	1.3
Total	152	100.0

Table 4.2 indicates 2% of the sample has a diploma, 69.7% of the sample has a bachelor's degree, while the rest have completed higher studies.

On the other hand 0% of the sample has completed secondary studies, this result considered expected because the targeted population is a specialized sector that consists mainly of engineers, architects and specialists, in addition to the characteristics of the targeted sampling unit (supervisory management level). Therefore working in the engineering consultancy sector requires a bachelor's degree as a minimum qualification.

Table 4. 3: Sample's Distribution based on Years of Experiences

Category	Frequency	Percentage
Less than 10	61	40.1
10-less than 20	64	42.1
20-less than 30	19	12.5
More than 30	8	5.3
Total	152	100.0

Table 4.3 reveals that the majority of the sample in terms of total years of experience, is equal to 10 years and less than 20 years with 42.1% of the total share. Also 40.1% of the sample has less than 10 years of experience. While lowest percent of the sample is for more than 30 years of experience with 5.3% of the total share. This shows that the majority of respondents to the questionnaire are young and middle aged individuals.

Table 4. 4: Sample's Distribution based on Age of Company (Years)

Category	Frequency	Percentage
Less than 5	25	16.4
5-less than 10	21	13.8
10-less than 15	9	5.9
15- less than 20	11	7.2
More than 20	86	56.6
Total	152	100.0

Table 4.4 shows that the highest percent of the sample is working in companies that were established before 20 years with 56.6% of total share, while lowest percent of the sample is working in companies that were established before 10 and less than 15 years with 5.9% of total share. **Table 4. 5: Sample's Distribution based on No. of Employees**

Category	Frequency	Percentage
Less than 50	32	21.1
50-less than 100	30	19.7
100-less than 250	12	7.9
250- less than 500	40	26.3
More than 500	38	25.0
Total	152	100.0

Table 4.5 shows that the highest percent of the sample is for two main categories, working in companies that have employees equal to 250 and less than 500 with 26.3% of total share, as well as companies that have more than 500 employees with 25% of total share. While lowest percent of the sample is for companies that have employees equal to 100 and less than 250 with 7.9% of total share. This means that almost 50% of the sample is for employees in large companies.

Table 4. 6: Sample's Distribution based on Company Area of Service

Category	Frequency	Percentage
Local (inside Jordan only)	21	13.8
Regional (working in neighboring countries)	84	55.3
International (working all over the world)	47	30.9
Total	152	100.0

Finally, Table 4.6 shows that 55.3% of the sample is working in companies that are working on a regional scale (neighboring countries) and 30.9% are working on an international scale. While lowest percent of the sample is for companies working in Jordan (local scale) only with 13.8% of total share.

4.2 Descriptive Statistics

In this section, means and standard deviations are used to describe attitudes towards main paragraphs in the questionnaires which represent primary dimensions and elements. The researcher depended on the following scale to define the level of acceptance for each question (Hashem, 2006):

Table 4. 7: Scale for Level of Acceptance

Category	Level
1-2.33	Low
2.34-3.67	Medium
3.68-5	High

The following tables summarize the results for each item in the questionnaire:

Risk-taking

Table 4. 8: Mean and Standard Deviation for "Risk-taking" Dimensions Statements

a	Risk-taking	Mean	Std. Deviation	Level of acceptance
1	Our company has the ability to perform some activities that have some potential risks, to keep ahead of competitors.	3.4474	0.81207	Medium
2	Employees are allowed to make decisions about their work processes without going through normal channels.	2.9342	0.98781	Medium
3	Our company is ready to provide financing to exploit ideas with uncertain outcomes.	2.8421	0.91424	Medium
4	Our company is ready to provide financing to exploit methods with uncertain outcomes.	2.9211	0.85758	Medium
5	Our company is ready to provide required human resources to exploit ideas with uncertain outcomes.	2.9934	0.82588	Medium
6	Our company is ready to provide required human resources to exploit methods with uncertain outcomes.	3.0395	0.77101	Medium
	Grand Mean	**3.0296**	**0.59310**	**Medium**

Table 4.8 indicates that there are negative attitudes towards Q (2,3,4,5) because their means are less than the mean of the scale (3), which focus on the internal structure flexibility in the decision-making process and secure the required financial and part of human resources to support new initiatives.

However, there are positive attitudes towards the rest of the statements because their means are above the mean of the scale (3), which focus on the top management's ability to lead market and provide required human resources support.

The grand mean also reflects that there are medium positive attitudes towards all of the statements for this dimension of corporate entrepreneurship with 3.0296 as a mean and 0.5931 as a standard deviation.

It is found that Q (1) has the highest mean, which refers to company's ability to perform some activities that have some potential risks, to keep ahead of competitors. This can be explained in light of the dynamic and competitive business environment, where certain levels of risks are essential to survive.

Whereas Q (3) has the lowest mean, which refers to company's ability to provide required financial resources to exploit ideas with uncertain outcomes. This can be explained by conservative culture that doesn't accept provide financial support to encourage the implementation of new ideas or methods.

Opportunities Generation

Table 4. 9: Mean and Standard Deviation for "Opportunities Generation" Dimensions Statements

b	Opportunities Generation	Mean	Std. Deviation	Level of acceptance
7	Our company strategy is driven by the available opportunities in the market.	3.7763	0.79065	High
8	Our company strategy is based on a deep understanding of its objectives.	3.8092	0.88200	High
9	Our company searches for opportunities based on thorough marketing analysis.	3.6053	0.82316	Medium
10	Our company searches for opportunities based on its internal capabilities.	3.5526	0.80388	Medium
11	Changes in business environment often give our company ideas for new services.	3.6776	0.69627	High
12	Our company often captures opportunities that have never been exploited by competitors.	3.3289	0.80377	Medium
	Grand Mean	**3.6250**	**0.49436**	**Medium**

Table 4.9 indicates that there are positive attitudes towards the above statements because their means are above the mean of the scale (3); which concentrate on the company's ability to recognize opportunities, focus on its objectives, as well as understand and analyze the changing internal and external business environment.

The grand mean also reveals that there are medium positive attitudes towards all the statements for this dimension of corporate entrepreneurship with 3.6250 as a mean and 0.49436 as a standard deviation.

It is found that Q (8) has the highest mean, which refers to have an organizational strategy based on a deep understanding of its objectives. This need to be connected with continuous efforts of the companies to survive and grow in line with their targets and road map.

Whereas Q (12) has the lowest mean, which refers to company's ability to capture opportunities that have never been exploited by competitors. This can be explained in light with new trends and changes in the market landscape, where dynamic and competent companies can exploit new and growing opportunities.

Innovation

Table 4. 10: Mean and Standard Deviation for "Innovation" Dimensions Statements

c	Innovation	Mean	Std. Deviation	Level of acceptance
13	When there are new ideas to exploit in our company, top management provides full support.	3.5526	0.78723	Medium
14	When there are new methods to exploit regarding our company's scope of services, top management provides full support.	3.5592	0.81162	Medium
15	At our company there are sufficient numbers of applicable ideas that can be converted into new services.	3.3684	0.72500	Medium
16	At our company there are sufficient numbers of applicable methods that can be used in accelerating current processes.	3.3816	0.71811	Medium
17	During an economic crisis, our company continues to invest in searching for new ideas.	3.5526	0.83618	Medium
18	During an economic crisis, our company continues to invest in applying new methods.	3.3553	0.82517	Medium
19	There is a considerable number of employees at our company who are involved in generating innovative ideas.	3.2105	0.82696	Medium
	Grand Mean	**3.4258**	**0.51664**	**Medium**

Table 4.10 indicates that there are positive attitudes towards the above statements because their means are above the mean of the scale (3), which refer to exploiting, investing and generating new ideas and methods.

The grand mean also reflects that there are medium positive attitudes towards all the statements for this dimension of corporate entrepreneurship with 3.4258 as a mean and 0.51664 as a standard deviation.

Also it was discovered that Q (14) has the highest mean, which refers to top management support in case of exploiting new methods. This can be connected with companies' exerted efforts to improve work processes, which will be ultimately reflected on companies overall efficiency and productivity.

Whereas Q (19) has the lowest mean, which refers to availability of considerable number of employees who are involved in generating innovative ideas. This can be explained in relation with company's structures that need to practice some flexibility and support generating and adopting innovative ideas.

Proactiveness

Table 4. 11: Mean and Standard Deviation for "Proactiveness" Dimensions Statements

d	Proactiveness	Mean	Std. Deviation	Level of acceptance
20	Our company often analyzes business environment changes to act promptly before competitors.	3.3026	0.75502	Medium
21	When faced with difficulties, our company looks quickly for alternative solutions.	3.4539	0.83657	Medium
22	Our company has the ability to apply new ideas as compared with competitors.	3.5329	0.73618	Medium
23	Our company can be considered as an aggressive company in terms of executing actions toward the achievement of its objectives.	3.1974	0.99695	Medium
	Grand Mean	**3.3717**	**0.65293**	**Medium**

Table 4.11 indicates that there are positive attitudes towards the above statements because their means are above the mean of the scale (3), which refer to company's ability to analyze, develop solutions and alternatives and response quickly to environmental challenges and opportunities in comparison with competitors.

The grand mean also reflects that there are medium positive attitudes towards all the statements for this dimension of corporate entrepreneurship with 3.3717 as a mean and 0.65293 as a standard deviation.

It is found that Q (22) has the highest mean, which refers to company's ability to apply new ideas in comparison with competitors. This can be connected with companies' exerted efforts to improve work processes, offer new services and enter new market in such a competitive environment.

Whereas Q (23) has the lowest mean, which refers to company's aggressiveness in terms of actions toward the achievement of its objectives. This can be connected to the characteristics of this sector, where technical internal competences play a main role in companies' growth.

Autonomy

Table 4. 12: Mean and Standard Deviation for "Autonomy" Dimensions Statements

E	Autonomy	Mean	Std. Deviation	Level of acceptance
24	Our company is applying technologies for the purpose of providing different services in comparison with competitors.	3.5197	0.75442	Medium
25	Our company is applying new ideas for the purpose of providing different services in comparison with competitors.	3.5921	0.73110	Medium
26	Our company is applying new methods for the purpose of providing different services in comparison with competitors.	3.4803	0.69024	Medium
27	Our company often works without considering common practices in the market.	2.6908	0.90058	Medium
28	Our company's culture focuses on challenging the status quo.	3.3947	0.72931	Medium
	Grand Mean	**3.3355**	**0.48588**	**Medium**

Table 4.12 indicates that there are negative attitudes toward Q (27) because its mean is less than the mean of the scale (3), which refers to not considering common practices in the market.

However, there are positive attitudes towards the rest of the statements because their means are above the mean of the scale (3), which refer to independence in applying technologies, ideas and methods and to the importance of challenging status quo culture.

The grand mean also reflects that there are medium positive attitudes towards all the statements for this dimension of corporate entrepreneurship with 3.3355 as a mean and 0.48588 as a standard deviation.

It is found that Q (25) has the highest mean, which refers to company's ability to apply new ideas for the purpose of providing different services in comparison with competitors. This revealed the importance of adopting different, flexible and independent strategies that enhance companies' ability to survive and grow.

Whereas Q (27) has the lowest mean, which refers to an organizational behavior which doesn't consider common practices in the market. This can be justified in light of engineering consultancy sector characteristics, where certain technical processes and methods need to be considered based on technical clients and stakeholders requirements.

Market Growth

Table 4. 13: Mean and Standard Deviation for "Market Growth" Elements Statements

F	Market Growth	Mean	Std. Deviation	Level of acceptance
29	Our company often works in different markets outside Jordan.	3.8355	0.99298	High
30	The main reason for our company's ability to work in different markets is due to its high qualifications.	3.8816	0.77146	High
31	Our company's strategy is driven by opportunities existence, regardless of market location.	3.6250	0.86746	Medium
32	Our company works in different countries using different strategies.	3.3553	0.86436	Medium
33	The competitive position of our company has improved over the past 5 years.	3.6382	0.88062	Medium
34	Our company has experienced growth in its market share over the past 5 years.	3.6382	0.81825	Medium
	Grand Mean	**3.6623**	**0.62034**	**Medium**

Table 4.13 indicates that there are positive attitudes towards the above statements because their means are above the mean of the scale (3), which refer to working in different markets outside Jordan, based on internal qualifications and capacities and using different strategies.

The grand mean also reflects that there are medium positive attitudes towards all the statements for these elements of sustainable growth with 3.6623 as a mean and 0.62034 as a standard deviation.

It is found that Q (30) has the highest mean, which reveals the role of company's qualifications in entering and working in different markets. This can be explained based on two factors: the engineering consultancy sector is a specialized one and companies' qualifications is one of the main internal strengths that help companies in achieving their objectives.

Whereas Q (32) has the lowest mean, which refers to company's ability to adopt different strategies to work in different countries. This showed that certain strategies are currently used, although new ones need to be considered and explored to enhance companies' ability to compete.

Branches Growth

Table 4. 14: Mean and Standard Deviation for "Branches Growth" Elements Statements

g	Branches Growth	Mean	Std. Deviation	Level of acceptance
35	Our company has more than one office in the same country.	2.4803	1.15644	Medium
36	Our company has many offices in different countries.	3.4605	1.11511	Medium
37	Establishing new offices is crucial for our company growth.	3.5526	0.79560	Medium
38	Establishing new offices facilitates our company's expansion in different countries.	3.7368	0.83576	High
	Grand Mean	**3.3076**	**0.69080**	**Medium**

Table 4.14 indicates that there are negative attitudes towards Q (35) because its mean is less than the mean of the scale (3), which refers to having more than one office in the same country.

However, there are positive attitudes towards the rest of the statements because their means are above the mean of the scale (3), which refer to importance and benefits of having different offices in different countries.

The grand mean also reflects that there are medium positive attitudes towards all the statements for these elements of sustainable growth with 3.3076 as a mean and 0.69080 as a standard deviation.

It is found that Q (38) has the highest mean, which refers to the importance of establishing new offices to facilitate company's expansion in different countries. This can be explained as having registered offices will allow companies to participate in bids mechanism though formal channels.

Whereas Q (35) has the lowest mean, which refers to having more than one office in the same country. This can be justified that having one office per country is enough to manage and support its activities and projects, also in case of certain projects requirements temporary offices can be established.

Offering New Services

Table 4. 15: Mean and Standard Deviation for "Offering New Services" Elements Statements

H	Offering New Services	Mean	Std. Deviation	Level of acceptance
39	When there is a new service to provide, top management of our company provides full support.	3.6250	0.74418	Medium
40	Our company often analyzes business environment changes to provide new services.	3.5461	0.74442	Medium
41	During economic crisis, our company provides new services as a main strategy for maintaining company stability.	3.3355	0.72737	Medium

42	Scope of our company is considered dynamic in terms of services, due to changes in country regulations and legislations.	3.4868	0.75456	Medium
43	Scope of our company is considered dynamic in terms of services, due to changes in client requirements.	3.6184	0.76283	Medium
44	Scope of our company is considered dynamic in terms of services, due to political and economic fluctuations.	3.4934	0.71869	Medium
	Grand Mean	**3.5175**	**0.53162**	**Medium**

Table 4.15 indicates that there are positive attitudes towards the above statements because their means are above the mean of the scale (3), which refer to the support of the top management, understand dynamic environments and highlight the importance of offering new services in difficult economic situations.

The grand mean also reflects that there are medium positive attitudes towards all the statements for these elements of sustainable growth with 3.5175 as a mean and 0.53162 as a standard deviation.

It is found that Q (39) has the highest mean, which refers to the role of top management support in offering new services. This can be linked with deep understanding of the top management to dynamic environment's requirements and the importance of offering new and diverse services on achieving stability and growth.

Whereas Q (41) has the lowest mean, which refer to the importance of introducing new services to overcome economic crisis. This can be linked with the anticipated role of offering new and diverse services in maintaining company stability during hard times.

Awarding New Projects

Table 4. 16: Mean and Standard Deviation for "Awarding New Projects" Elements Statements

I	Awarding New Projects	Mean	Std. Deviation	Level of acceptance
45	Our company's existence in different markets increases the number of awarded projects.	3.7368	0.81976	High
46	Availability of our company branches increases the number of awarded projects.	3.6513	0.85552	Medium
47	Providing new services by our company increases the number of awarded projects.	3.8026	0.73727	High
48	Continues development in our company services increases the number of awarded projects.	3.8684	0.74304	High
49	Qualified staff at our company is one of the main reasons for awarding new projects.	3.9539	0.81654	High
	Grand Mean	**3.8026**	**0.62146**	**High**

Table 4.16 indicates that there are positive attitudes towards the above statements because their means are above the mean of the scale (3), which refer to studying the role of the diversity of services, staff qualifications and competencies as well as market coverage in increasing the number of awarded projects.

The grand mean also reflects that there are high positive attitudes towards all the statements for these elements of sustainable growth with 3.8026 as a mean and 0.62146 as a standard deviation.

It is found that Q (49) has the highest mean, which refers to the role of qualified staff in awarding new projects. This can be linked with characteristics of this research population, which is considered a specialized sector.

Whereas Q (46) has the lowest mean, which refers to the role of company's branches in increasing the number of awarded projects. This can be linked with adopting different strategies to enter new markets, including establishing new offices and/ or building alliances.

4.3 Collinearity Statistics Test

Multicollinearity between the independent variables is checked using the collinearity statistics, also known as the tolerance and variance inflation factor (VIF). Tolerance is the amount of variance in an independent variable that is not explained by other independent variables. VIF measures how much the variance of the regression coefficient is inflated by multicollinearity. The minimum acceptable cutoff value for tolerance is typically (0.10). The maximum acceptable cutoff value for VIF is (10). In other words, to indicate no problem with multicollinearity, the tolerance value should not be less than (0.10) while VIF value should not be more than (10) (Belsley, et al. 2005).

Table 4. 17: Collinearity Statistics Test

Model	Collinearity Statistics	
	Tolerance	VIF
Risk	0.821	1.218
Generation	0.494	2.024
Innovation	0.456	2.192
Proactiveness	0.632	1.583
Autonomy	0.667	1.500

As we see in Table 4.17, VIF values for each independent variable is less than 10, with tolerance ranges between (0.456-0.821). This means that there is no occurrence for any multicollinearity problem between the independent variables.

4.4 Hypotheses Testing

Main Hypothesis:

- **HO1:** There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and sustainable growth (markets growth, branches growth, offering new services and awarding new projects).

Multiple regression is used to test the above hypothesis, the results of regression among the independent variables (corporate entrepreneurship dimensions) against sustainable growth can be seen in table 4.18.

Table 4. 18: Regression Model Summary for Hypothesis (HO1)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.707[a]	0.500	0.483	0.33908

Table 4.18, shows that R (0.707) is the correlation of the independent variables and sustainable growth, which is considered as a high correlation. Also it is found that R Square (0.50), which is the explained variance, is actually the square of the multiple R $(0.707)^2$. This means that (50%) of the variance (R-Square) in sustainable growth has been significantly explained by the independent variables.

Table 4. 19: ANOVA Analysis for Hypothesis (HO1)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.781	5	3.356	29.191	.000[b]
	Residual	16.786	146	0.115		
	Total	33.567	151			

Table 4.19 for ANOVA test shows that the F value of (29.191) is significant at (0.05) level and higher than tabulated F value of 2.27. Thus, the hypothesis is rejected. So there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and sustainable growth (markets growth, branches growth, offering new services and awarding new projects).

Table 4. 20: T-test Analysis for Hypothesis (HO1)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.910	.253		3.601	.000
	Risk-taking	.038	.051	.047	.731	.466
	Opportunities Generation	.144	.079	.151	1.812	.072
	Innovation	.283	.079	.310	3.577	.000
	Proactiveness	.207	.053	.286	3.885	.000
	Autonomy	.113	.070	.116	1.621	.107

Additional analysis was conducted as in Table 4.20, which shows that calculated t values for innovation and proactiveness are significant at (0.05) level, which means these variables have the effect on the dependent variable (sustainable growth). Also the variable (proactiveness) with Beta 0.310 has the highest effect on the dependent variable.

Secondary Hypotheses:

4.4.2.1 **HO1-1:** There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and market growth.

Multiple regression is used to test the above hypothesis, the results of the regression among the independent variables (corporate entrepreneurship dimensions) against market growth can be seen in table 4.21.

Table 4. 21: Regression Model Summary for Hypothesis (HO1-1)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.650[a]	0.423	0.403	0.47917

a. Predictors: (Constant), AUTONOMY, RISK, GENERATION, PROACTIVENESS, INNOVATION

Table 4.21, shows that R (0.65) is the correlation of the independent variables and market growth, which is considered as a moderate correlation. Also it is found that R Square (0.423), which is the explained variance, is actually the square of the multiple R $(0.65)^2$. This means that (42.3%) of the variance (R-Square) in the market growth has been significantly explained by the independent variables.

Table 4. 22: ANOVA Analysis for Hypothesis (HO1-1)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.586	5	4.917	21.416	.000[b]
	Residual	33.522	146	0.230		
	Total	58.108	151			

Table 4.22 for ANOVA test, shows that the F value of (21.416) is significant at (0.05) level and higher than tabulated F value of 2.27. Thus, the hypothesis is rejected. So there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness, and autonomy) and market growth

Table 4. 23: T-test Analysis for Hypothesis (HO1-1)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.645	.357		1.805	.073
	Risk-taking	-.014	.073	-.013	-.186	.852
	Opportunities Generation	.054	.112	.043	.483	.630
	Innovation	.354	.112	.295	3.167	.002
	Proactiveness	.334	.075	.351	4.444	.000
	Autonomy	.157	.098	.123	1.598	.112

Additional analysis was conducted as in Table 4.23, which shows that calculated t values for innovation and proactiveness are significant at (0.05) level, which means these variables have the effect on the dependent variable (market growth). Also the variable (proactiveness) with Beta 0.351 has the highest effect on the dependent variable.

4.4.2.2 **HO1-2:** There is no statistically significant relationship at $\alpha=0.05$ between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and branches growth.

Multiple regression is used to test the above hypothesis, the results of regression among the independent variables (corporate entrepreneurship dimensions) against branches growth can be seen in table 4.24.

Table 4. 24: Regression Model Summary for Hypothesis (HO1-2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.377[a]	0.142	0.113	0.65059

a. Predictors: (Constant), AUTONOMY, RISK, GENERATION, PROACTIVENESS, INNOVATION

Table 4.24, shows that R (0.377) is the correlation of the independent variables and branches growth, which is considered as a moderate correlation. Also it is found that R Square (0.142), which is the explained variance, is actually the square of the multiple R (0.377)2. This means that (14.2%) of the variance (R-Square) in the branches growth has been significantly explained by the independent variables.

Table 4. 25: ANOVA Analysis for Hypothesis (HO1-2)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.261	5	2.052	4.848	.000[b]
	Residual	61.798	146	0.423		
	Total	72.059	151			

Table 4.25 for ANOVA test shows that the F value of (4.848) is significant at (0.05) level and higher than tabulated F value of 2.27. Thus, the hypothesis is rejected. So there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and branches growth.

Table 4. 26: T-test Analysis for Hypothesis (HO1-2)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.344	.485		2.771	.006
	Risk-taking	.084	.099	.072	.857	.393
	Opportunities Generation	-.069	.152	-.049	-.454	.651
	Innovation	.386	.152	.289	2.545	.012
	Proactiveness	.032	.102	.030	.313	.755
	Autonomy	.158	.133	.111	1.187	.237

Additional analysis was conducted as in Table 4.26, which shows that calculated t values for innovation is significant at (0.05) level, which means this variable has the effect on the dependent variable (branches growth) with Beta of (0.313).

4.4.2.3 **HO1-3:** There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and offering new services.

Multiple regression is used to test the above hypothesis, the results of regression among the independent variables (corporate entrepreneurship dimensions) against offering new services can be seen in table 4.27.

Table 4. 27: Regression Model Summary for Hypothesis (HO1-3)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.647[a]	0.419	0.399	0.41213

a. Predictors: (Constant), AUTONOMY, RISK, GENERATION, PROACTIVENESS, INNOVATION

Table 4.27 shows that R (0.647) is the correlation of the independent variables and offering new services, which is considered as a moderate correlation. Also it is found that R Square (0.419), which is the explained variance, is actually the square of the multiple R $(0.647)^2$. This means that (41.9%) of the variance (R-Square) in offering new services has been significantly explained by the independent variables.

Table 4. 28: ANOVA Analysis for Hypothesis (HO1-3)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.878	5	3.576	21.051	.000[b]
	Residual	24.798	146	0.170		
	Total	42.675	151			

Table 4.28 for ANOVA test shows that the F value of (21.051) is significant at (0.05) level and higher than tabulated F value of 2.27. Thus, the hypothesis is rejected. So there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and offering new services.

Table 4. 29: T-test Analysis for Hypothesis (HO1-3)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.732	.307		2.383	.018
	Risk-taking	.020	.062	.022	.315	.753
	Opportunities Generation	.375	.097	.349	3.886	.000
	Innovation	.090	.096	.088	.939	.349
	Proactiveness	.193	.065	.237	2.989	.003
	Autonomy	.122	.085	.111	1.440	.152

Additional analysis was conducted as in Table 4.29, which shows that calculated t values for proactiveness and opportunities generation are significant at (0.05) level, which means these variables have the effect on the dependent variable (offering new service). Also the variable (opportunities generation) with Beta (0.349) has the highest effect on the dependent variable.

4.4.2.4 **HO1-4**: There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and awarding new projects.

Multiple regression is used to test the above hypothesis, the results of regression among the independent variables (corporate entrepreneurship dimensions) against awarding new projects can be seen in table 4.30.

Table 4. 30: Regression Model Summary for Hypothesis (HO1-4)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.554[a]	0.307	0.283	0.52626

a. Predictors: (Constant), AUTONOMY, RISK, GENERATION, PROACTIVENESS, INNOVATION

Table 4.30 shows that R (0.554) is the correlation of the independent variables and awarding new projects, which is considered as a moderate correlation. Also it is found that R Square (0.307), which is the explained variance, is actually the square of the multiple R $(0.554)^2$. This means that (30.7%) of the variance (R-Square) in offering new services has been significantly explained by the independent variables.

Table 4. 31: ANOVA Analysis for Hypothesis (HO1-4)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.884	5	3.577	12.915	.000[b]
	Residual	40.434	146	0.277		
	Total	58.319	151			

Table 4.31 for ANOVA test shows that the F value of (12.915) is significant at (0.05) level and higher than tabulated F value of 2.27. Thus, the hypothesis is rejected. So there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and awarding new projects.

Table 4. 32: T-test Analysis for Hypothesis (HO1-4)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.095	.392		2.792	.006
	Risk-taking	.083	.080	.079	1.039	.300
	Opportunities Generation	.145	.123	.115	1.174	.242
	Innovation	.346	.123	.288	2.819	.005
	Proactiveness	.209	.083	.220	2.538	.012
	Autonomy	.012	.108	.010	.113	.910

Additional analysis was conducted as in Table 4.32, which shows that calculated t values for proactiveness and innovation are significant at (0.05) level, which means these variables have the effect on the dependent variable (awarding new projects). Also the variable (innovation) with Beta (0.288) has the highest effect on the dependent variable.

Chapter Five: Discussions of Results and Recommendations

Chapter Five: Discussions of Results and Recommendations

The previous four chapters clarified corporate entrepreneurship and sustainable growth concepts, examined their relationship based on this current research's sources of data and tested the main hypothesis regarding the relationship between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and sustainable growth elements (markets growth, branches growth, offering new services and awarding new projects), in addition to four secondary hypotheses.

Therefore, the aim of this chapter is to discuss the results presented in chapter four, taking into consideration previous studies as well as the findings from this research, followed by key recommendations and suggestions.

5.1 Results Discussions and Conclusions

General

In order to understand the results of this research, special focus has been given to demographic information and descriptive analysis. Therefore, listed below are the main characteristics and findings

- In terms of gender distribution, the sample can be considered balanced, with 51.3% male and 48.7% female. This gives an indication to the employment equity in engineering consultancy companies, as the primary factors in employment process are education and experience. Also this gives an indication to level of awareness and confident in female performance and capabilities;

- 69.7% of the sample have a bachelor's degree, while almost all of the rest have higher studies. This gives an indication to level of awareness, educations, qualifications and competencies of the workers of the engineering consultancy sector;
- The majority of the sample in terms of total years of experience, is equal to 10 years and less than 20 years (42.1%) and less than 10 years (40.1%). This shows that majority of respondents are young or middle aged individuals. Which gives an indication to the equity of opportunities regardless of the age, in addition the existence of young and middle aged workers will ultimately help in guaranteeing the business sustainability in the long term;
- The highest percentage of the sample is working in companies that were established 20 years ago. This approves the extensive experience of this sector and its ability to survive in the long term through applying different strategies and tactics;
- The highest percentage of the sample is within two main categories, including those working in companies that have employees equal to 250 and less than 500 as well as those working in companies with more than 500 employees. This reveals the role of this sector in jobs creation and employment process in the society. Also highlights the importance of having enough numbers of employees, to provide variety of services and specialties in order to be able to survive in the market and meet market needs;

- 55.3% of the sample is working in companies whose scope is on a regional scale. This confirms the success of consultancy companies in entering new markets; since Jordan is one of the leading countries in this field and considering that majority of the companies are already working in many countries outside of Jordan. Also this gives an indication to level of trust, competencies, qualifications and professionalism of the local companies, and reveals the importance of entering new markets in order to survive and grow;
- The results show that engineering consultancy companies apply risk-taking dimension moderately with 3.0296 as a mean and 0.5931 as a standard deviation. This reveals the changing in the common conservative culture in terms of core scope of services, but also shows the need to allow for moderate financial risks;
- The results show that engineering consultancy companies apply opportunities generation dimension moderately with 3.6250 as a mean and 0.49436 as a standard deviation. This needs to be read in conjunction with company's ability to recognize opportunities, focus on its objectives, understand and analyze the business environment;
- The results show that engineering consultancy companies apply innovation dimension moderately with 3.4258 as a mean and 0.51664 as a standard deviation. This clarifies the gradual understanding of the importance of innovation in achieving stability, growth and flexibility in the business;

- The results show that engineering consultancy companies apply proactiveness dimension moderately with 3.3717 as a mean and 0.65293 as a standard deviation. This reveals the changing in the common conservative culture, in terms of developing new solutions and responding quickly to emerging challenges and opportunities;
- The results show that engineering consultancy companies apply autonomy dimension moderately with 3.3355 as a mean and 0.48588 as a standard deviation. This reveals the gradual understanding to the importance of acting independently, especially in case of adopting new technologies, ideas and methods and in entering new areas and markets;
- The results show that engineering consultancy companies apply market growth element moderately with 3.6623 as a mean and 0.62034 as a standard deviation. This proves the fruitful of the current efforts in entering new markets and highlight the importance of considering different and flexible strategies;
- The results shows that engineering consultancy companies apply branches growth element moderately with 3.3076 as a mean and 0.69080 as a standard deviation. This shows that consultancy companies already recognize the role of establishing new branches in facilitating entering new markets, attracting more clients and consequently awarding new project's;
- The results shows that engineering consultancy companies apply offering new services element moderately with 3.5175 as a mean and 0.53162 as a standard deviation. This reveals the role of providing new and diverse services as a proactive strategy in responding to different internal and external factors and challenges

- ; and The results shows that engineering consultancy companies apply awarding new projects element highly with 3.8026 as a mean and 0.62146 as a standard deviation. This indicates the success of the application of different strategies and tactics in increasing number of awarded projects.

Hypotheses Discussion

For the main hypothesis- **HO 1** "There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and sustainable growth (markets growth, branches growth, offering new services and awarding new projects)", below is a summary of the findings:

1. Based on the statistical analysis finding, the hypothesis is rejected, so **there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and sustainable growth (markets growth, branches growth, offering new services and awarding new projects)**;
2. The correlation of the independent variables and sustainable growth is considered high;
3. It was found that this result agrees in general with previous studies of Al Sakarneh (2005), Duobienė (2008), Al Shikh Issa (2010), Al Sadi (2011), Malik and Bin Mahmood (2012), Felı´cio, et al. (2012) and Shamsuddin, et. al. (2012), since all confirm the existence of a relationship or positive effect or impact between entrepreneurship and performance or growth;

4. Eitzen and Sartorius (2012), argued that high growth companies appear to have adopted a larger variety of strategies to achieve growth, such as entrepreneurship. This corresponds with this research's findings, which confirm the relationship between corporate entrepreneurship and companies growth, in particular as a set of activities that targeted the renewal and development of established organizations for the purpose of maintaining organization's long term growth;
5. Further statistical analysis was conducted, thus it was found that the proactiveness dimension contributed the most to the sustainable growth variable. This agrees with Shamsuddin, et al. (2012) and Felı´cio, et al. (2012) in terms of performance, which reveals the importance and significant effect of proactiveness on the sustainable growth of engineering consultancy companies. Proactiveness can be achieved by facing obstacles and changes as well as utilizing opportunities quickly in comparison with competitors. The second dimension that contributed to the sustainable growth variable is the innovation dimension, this agrees with Al Shikh Issa (2010) and disagrees with Shamsuddin, et al. (2012) in terms of performance. This reveals the importance and significant effect of innovation dimension on the sustainable growth of engineering consultancy companies. Innovation can be achieved by providing and investing in something new or different on both internal and external scales to satisfy unmet requirements of the market.

For the first secondary hypothesis- **HO1-1** "There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and market growth", below is the summary of the findings:

1. Based on statistical analysis findings, the hypothesis is rejected. So **there is a statistically significant relationship at *α*=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and market growth**;
2. The correlation of the independent variables and market growth is considered moderate;
3. Further statistical analysis was conducted, thus it was found that the proactiveness dimension contributed the most to the market growth element. This reveals the importance and significant effect of the proactiveness dimension on market growth. Proactiveness can be achieved by facing obstacles and changes as well as utilizing opportunities quickly in comparison with competitors to be able to exist in a different market. The second dimension that contributed to the market growth element is innovation. This reveals the importance and significant effect of innovation dimension on market growth, through providing and investing in something new or different on both internal and external scales to satisfy unmet requirements of clients in different market locations

4. This reflects the ability of consultancy engineering companies to enter and exist in different countries' markets outside of Jordan, driven by opportunities existence, regardless of market location and through applying different corporate entrepreneurship strategies. This includes opening new offices or building alliances with other competitors and parties to enter new markets or expand in existing markets; and
5. Most of the local consultancy engineering companies already have worked in different markets outside of Jordan and are currently working hard to compete and expand as part of their strategies for stability and growth.

For the second, secondary hypothesis -**HO1-2** "There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and branches growth", below is the summary of the findings:

1. Based on statistical analysis findings, the hypothesis is rejected. Therefore, **there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and branches growth;**
2. The correlation of the independent variables and market growth is considered moderate;
3. It was found that this result agrees with Hattab's (2007) study which has confirmed the effect of different environmental factors on the development of entrepreneurial projects, in terms of sizes (i.e. expansion);

4. Further statistical analysis was conducted, thus it was found that the innovation dimension contributed the most to the branches growth element. This reveals the importance and significant effect of innovation dimension on branches growth. Innovation can be achieved through providing and investing in something new or different on both internal and external scales to satisfy unmet requirements of the clients and stakeholders and in different locations.
5. Branches' growth is considered as physical evidence of companies' growth, as it refers to the company's ability to gain a full registration to establish and run permanent offices in the same or different countries;
6. This also has a direct and strong effect on companies' ability to reach different markets in a tangible way, consequently, the previous hypothesis HO1-1 and this secondary hypothesis can be considered strongly associated; and
7. Most of the local consultancy engineering companies already have branches inside or outside of Jordan. For example, some have offices in Aqaba since it is a special zone in addition to headquarters in Amman. Also some have registered offices in different countries such as the Gulf countries (KSA, Qatar, UAE, Oman), Palestine, Iraq, Yemen, Egypt and Sudan.

For the third secondary hypothesis- **HO1-3** "There is no statistically significant relationship at $\alpha=0.05$ between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and offering new services", below is the summary of the findings:

1. Based on statistical analysis findings, the hypothesis is rejected. Therefore, **there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and offering new services;**
2. The correlation of the independent variables and market growth is considered moderate;
3. It was found that this agrees with Hattab's (2007) study which has confirmed the effect of different environmental factors on the development of entrepreneurial projects, in terms of developing new activities;
4. Further statistical analysis was conducted, thus it was found that the opportunities generation dimension contributed the most to offering the new services element. This reveals the importance and significant effect of the opportunities generation dimension on the offering of new services element, through creating, distinguishing and capturing opportunities which have never been exploited before; for example, through offering new specialties and services to be able to meet the needs of different clients. The second dimension that contributed to offering the new services element is proactiveness. This reveals the importance and significant effect of the proactiveness dimension on offering new services, through facing obstacles and changes as well as utilizing opportunities quickly in terms of new specialties and services in comparison with competitors;

5. Offering new services reflects the dynamic nature of engineering consultancy companies, in terms of the ability to provide modified, new and diverse service specialties; different from traditional and core range of services, as the shield from market changes and needs;
6. During the last ten years, different and diverse stakeholder requirements have reshaped the scope of the engineering consultancy sector, including governments, legislators, regulators, funding agencies, environmental and social organizations, public and private clients and competitors; and
7. As a solid response, new, promising and prosperous trends emerged, including environmental studies sustainability concept, green building, traffic assessments, management contract, new contract procedures, as well as specialized technical and training services.

For the fourth secondary hypothesis- **HO1-4** "There is no statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and awarding new projects", below is the summary of the findings:

1. Based on statistical analysis findings, the hypothesis is rejected. Therefore, **there is a statistically significant relationship at α=0.05 between corporate entrepreneurship (risk-taking, opportunities generation, innovation, proactiveness and autonomy) and awarding new projects;**

2. The correlation of the independent variables and market growth is considered moderate;
3. This agrees with Hattab (2007), which has indicated a direct positive impact of the elements related to technological environment on the growth of entrepreneurial projects;
4. Also the study of Shamsuddin, et al. (2012) confirmed the corporate entrepreneurship dimension's influence on growth of sales;
5. Further statistical analysis was conducted, thus it was found that the innovation dimension contributed the most to the element of awarding new projects. This reveals the importance and significant effect of innovation dimension on awarding new projects, through providing and investing in something new or different on both internal and external scales to satisfy unmet requirements of clients. The second dimension that contributed to awarding new projects element is the proactiveness dimension. This reveals the importance and significant effect of the proactiveness dimension on awarding new projects, through facing obstacles and changes as well as utilizing opportunities quickly in comparison with others competitors; and
6. This can be considered as the most significant consequence of applying corporate entrepreneurship dimensions, as awarding new projects reflects the company's ability to apply different strategies and tactics to eventually win new projects in new and diverse services and specialties, in different markets and from different clients. In addition, it is an important indicator of the company's internal capacity, represented mainly by highly qualified and competent staff.

5.2 Recommendations

In referring to the current research findings, the researcher would like to present the following recommendations for all interested parties in the fields of corporate entrepreneurship and sustainable growth, including researchers, business leaders, policymakers, governmental parties, decision makers, practitioners and others:

1. Enhance all established companies to consider and practice corporate entrepreneurship in order to achieve renewal, growth and profitability. Through conducting awareness sessions, training courses and brain storming sessions for top management staff, with special focus on previous successful models in this field,
2. Further investigation for the application of corporate entrepreneurship in the consultancy engineering companies. Through supporting cooperation between researchers and engineering consultancy sector's leaders;Recommend that A/E Business Council considers corporate entrepreneurship strategies as pillars to achieving and sustaining competitive advantage. Through conducting awareness sessions, training courses and brain storming sessions, with special focus on previous successful models in this field,

1. Recommend that A/E Business Council conduct awareness sessions or prepare guidance for potential entrepreneurial activities;
2. Recommend all established companies to develop employees' entrepreneurship characteristics to improve the overall companies' performance.

3. Through understanding employees characteristics and capabilities, trying to develop a clear linkage between employees personal targets and companies targets, and providing windows for personal initiatives; Encourage the exploration of new and potential trends in engineering consulting companies, due to its role in shaping new promising fields and specialties;
4. Encourage all established companies to provide special focus on the development of human resources as a main ingredient of strength and excellence. Through considering training plans in yearly budget and supporting employees education;
5. Encourage all established companies to adopt a moderate risk-taking style in order to capture and exploit new opportunities. This should be based on thorough business analysis and may require some training in risk management;
6. Encourage all established companies to capture and exploit emerging opportunities, based on analyzing and understanding internal and external environments;
7. Support innovative ideas and methods by formulating a clear system, to ensure generating wide range of innovative and applicable ideas that support companies development;
8. Encourage proactiveness trends, to support companies' continues efforts to respond quickly to the dynamic environment and high level of competition;
9. Support autonyms' initiatives to increase companies' ability to lead the market and challenge current systems, to increase efficiency and productivity; and

10. Special attention should be given to build companies internal capacities, offer new services and existence in different geographic locations, to increase number of awarded projects.

5.3 Areas of Future Research

1. Conduct future research to investigate broad corporate entrepreneurship dimensions (self-renewal, uniqueness, behavior, entrepreneurial culture, strategic orientation, resources magnification, administrative hierarchy, recognition, competitive aggressiveness and initiation);
2. Conduct future research to investigate board sustainable growth elements, mainly related to financial aspects. Through evaluating their relations and sensitivities with different concepts and strategies;
3. Conduct future research to investigate sustainable growth elements in different sectors, with special focus on financial aspects. Through evaluating their relations with different concepts and strategies.
4. Conduct comparative studies in order to investigate corporate entrepreneurship in both consultancy engineering and contracting companies. This needs arranging an awareness activities for top managements levels in both sub-sectors and agree on a road map;
5. Recommend all established companies to provide windows for risk-taking, opportunities generation, innovation, proactiveness and autonomy dimensions. Through considering those dimensions in corporate strategies and assessing its effect in short and long terms horizons;

6. Conduct future research to investigate factors affecting corporate entrepreneurship (external and internal factors); Future research should be conducted in different geographic locations; and
7. Future researches are required to investigate the effects of innovation, opportunities generation and proactiveness dimensions on financial performance.

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Appendices

- **Appendix (1): Research Questionnaire**
- **Appendix (2): Names of Questionnaire Reviewers**
- **Appendix (3): Acknowledgment**

Appendix (1): Research Questionnaire:

Dear Respondents,

I am a student at Amman Arab University doing my Masters of Business Administration (MBA). The title of my research is "The Relationship between Corporate Entrepreneurship and Sustainable Growth in Engineering Consultancy Companies" In partial fulfillment of the requirements for Masters Degree in Business Administration.

I am inviting you to participate through this research study by completing the attached questionnaire. The following questionnaire will require approximately 10 minutes of your valuable time to complete.

Please fill up the questionnaire attached and please note that all the provided answers will be for the sake of scientific research only and will be dealt with in full secrecy.

Many Thanks in Advance

Researcher

Jomanah Al Btoush

Part One:

Could you please choose and tick in the below boxes to indicate your personal information:

Gender:		Female		Male						
Highest Academic Qualifications		High School		Diploma		BSc		MSc		PhD
Years of Experiences		less than10		10-less 20		20-less than 30		More than 30		
Age of the Company you are working for (in years)		Less than 5		5-less than 10		10-less than 15		15-less than 20		More than 20
No. of Employees at your Company		Less than 50		50-less than 100		100-less than 250		250-less than 500		more than 500
Company Area of Service		Local (inside Jordan only)		Regional (Working in neighborhood countries)		International (Working all over the world)				

Part Two:

Kindly check below statements and choose a number from 1 to 5 using the criteria below to reflect your experience in the Consulting Engineering Company you are working for:

ID	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
a	**Risk Taking**					
1	Our company has the ability to perform some activities that have some potential risks, to keep ahead of competitors.					
2	Employees are allowed to make decisions about their work processes without going through normal channels.					
3	Our company is ready to provide financing to exploit ideas with uncertain outcomes.					
4	Our company is ready to provide financing to exploit methods with uncertain outcomes.					
5	Our company is ready to provide required human resources to exploit ideas with uncertain outcomes.					
6	Our company is ready to provide required human resources to exploit methods with uncertain outcomes.					
b	**Opportunities Generation**					
7	Our company strategy is driven by the available opportunities in the market.					
8	Our company strategy is based on a deep understanding of its objectives.					
9	Our company searches for opportunities based on thorough marketing analysis.					
10	Our company searches for opportunities based on its internal capabilities.					
11	Changes in business environment often give our company ideas for new services.					
12	Our company often captures opportunities that have never been exploited by competitors.					

c	**Innovation**					
13	When there are new ideas to exploit in our company, top management provides full support.					
14	When there are new methods to exploit regarding our company's scope of services, top management provides full support.					
15	At our company there are sufficient numbers of applicable ideas that can be converted into new services.					
16	At our company there are sufficient numbers of applicable methods that can be used in accelerating current processes.					
17	During an economic crisis, our company continues to invest in searching for new ideas.					
18	During an economic crisis, our company continues to invest in applying new methods.					
19	There is a considerable number of employees at our company who are involved in generating innovative ideas.					
d	**Pro-activeness**					
20	Our company often analyzes business environment changes to act promptly before competitors.					
21	When faced with difficulties, our company looks quickly for alternative solutions.					
22	Our company has the ability to apply new ideas as compared with competitors.					
23	Our company can be considered as an aggressive company in terms of executing actions toward the achievement of its objectives.					

e	**Autonomy**					
24	Our company is applying technologies for the purpose of providing different services in comparison with competitors.					
25	Our company is applying new ideas for the purpose of providing different services in comparison with competitors.					
26	Our company is applying new methods for the purpose of providing different services in comparison with competitors.					
27	Our company often works without considering common practices in the market.					
28	Our company's culture focuses on challenging the status quo.					
f	**Market Growth**					
29	Our company often works in different markets outside Jordan.					
30	The main reason for our company's ability to work in different markets is due to its high qualifications.					
31	Our company's strategy is driven by opportunities existence, regardless of market location.					
32	Our company works in different countries using different strategies.					
33	The competitive position of our company has improved over the past 5 years.					
34	Our company has experienced growth in its market share over the past 5 years.					
g	**Branches Growth**					
35	Our company has more than one office in the same country.					
36	Our company has many offices in different countries.					
37	Establishing new offices is crucial for our company growth.					
38	Establishing new offices facilitates our company's expansion in different countries.					

h	**Offering New Services**					
39	When there is a new service to provide, top management of our company provides full support.					
40	Our company often analyzes business environment changes to provide new services.					
41	During economic crisis, our company provides new services as a main strategy for maintaining company stability.					
42	Scope of our company is considered dynamic in terms of services, due to changes in country regulations and legislations.					
43	Scope of our company is considered dynamic in terms of services, due to changes in client requirements.					
44	Scope of our company is considered dynamic in terms of services, due to political and economic fluctuations.					
i	**Awarding New Projects**					
45	Our company's existence in different markets increases the number of awarded projects.					
46	Availability of our company branches increases the number of awarded projects.					
47	Providing new services by our company increases the number of awarded projects.					
48	Continues development in our company services increases the number of awarded projects.					
49	Qualified staff at our company is one of the main reasons for awarding new projects.					

Thank You Once Again For Your Valuable Time

Appendix (2): Names of Questionnaire Reviewers

Name	Title	Organization
Dr. Mohammad Abu Yaman	Professor	Amman Arab University
Dr. Hala Hattab	Associate Professor	British University In Egypt
Dr. Mohammad Al Kasasbeh	Associate Professor	Amman Arab University
Dr. Sabah Hamid	Associate Professor	Petra University
Dr. Rula AlDhamen	Assistant Professor	Amman Arab University
Dr. Sahar Abu Jarour	Assistant Professor	Amman Arab University
Eng. Jihad Abu Jamous	Director of Operations	Arabtech Jardaneh Group

Appendix (3): Acknowledgment

I would like to acknowledge the support and help of the following people, based on alphabetical order:

- Amna Anabtawi;
- Aseel Abu Albandora;
- Bashar Hawamdah;
- Hakam Bitar;
- Hala Hattab;
- Jihad Abu Jamous;
- Osama Al Darras;
- Rasha Tomaira ;
- Rula Jumah;
- Ronza Masarweh;
- Samar Kilani;
- Sebouh Lebejian;
- Wael Zurikat; and
- Yazan Alluazi.