The impact of an intrapreneurial culture on innovation in consulting companies in Quito, Ecuador

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Submitted

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Abstract

When the factors that help or hinder the success of companies are analyzed, it is necessary to observe a company's resources and capabilities (Galvez & Garcia, 2011). In this sense, intrapreneurship and innovation are topics of undisputable interest.

Small and medium sized companies represent a big percentage of the business demography, which is why they have become key actors in the economic welfare of different regions and countries, which is why they have generated a great interest and the need to learn more about their nature, their potential for development, issues, development and competitiveness (Galvez & Garcia, 2011).

In the matter of small and medium sized consulting companies, consultants have the constant need to innovate their advice to their clients. This innovation is a completely new service or a modification to an already existing one in a new context (Taminiau, Smit, & de Lange, 2009).

This research is looking to find how an intrapreneurial culture affects innovation with regards to new/improved services offered by small and medium sized consultancy companies in Quito, Ecuador which has been constantly growing since the past decade and is regarded as an important industry in the economic development of Ecuador.

The results show that the most important factors that drive intrapreneurship in a consulting company are: team work, a supportive organizational structure, management support and resource availability which have a positive impact on service innovation. This clearly shows that the more companies foster a culture where these aspects are incorporated, the more they can innovate.

The results obtained in this thesis are relevant and important for small and medium sized consulting companies in Quito. Intrapreneurship is shown as a decisive factor that significantly influences innovation in a company, the results found show enough proof to determine that an intrapreneurial culture that is fostered can help drive innovation in consulting companies, and what are the main characteristics that spark an intrapreneurial culture in Quito.

Key words: intrapreneurship, innovation, service innovation, consulting companies, SMEs

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1. Introduction

Globalization and its consequences have provoked many companies to rethink their old-fashioned management practices: creativity, innovation and intrapreneurs are essential in a market defined by rapid change. An intrapreneurial culture differs from a "traditional" culture because it offers employees the chance to seek opportunities to innovate and to satisfy their desires of being owners of their internal projects; this should be well established in the business' culture (Bhatia & Khan, 2013).

The following characteristics: pro-activeness, innovation, risk taking and the desire to create something within the same organization are the most frequently mentioned features of an intrapreneurial culture (Wood, 2004). It should be built on "policies and practices that maximize the likelihood that people meet, communicate openly, share ideas and information, listen to and learn from each other, and develop a culture of mutual trust and support" (Bhatia & Khan, 2013, p. 850).

The primary characteristic of the current global socioeconomic situation is change. All organizations operating in a global market face intricate challenges in this era of uncertainty. These challenges are so complex that most proposals to overcome them agree on the fact that innovation is the driver for accelerated change. In this context, constant innovation is needed because organizations are currently operating in a truly competitive environment where innovation has become as important as quality and productivity and is crucial to achieve business success (Garzon, 2005).

When effectively encouraged and conducted, an intrapreneurial culture in an organization not only nurtures innovation, furthermore it aids employees who have innovative ideas to use the firm's resources to develop or improve products or services. It also gives employees the opportunity to develop into "change agents" who feel comfortable with bringing about new and better ideas to the table and promote their implementation (Obino, 2012, p. 2.).

The situation in SMEs in Ecuador is that their business models are not helping them enter new markets or to offer new products and services that meet their clients' needs (Ismodes, 2012). Specifically, consulting companies in Quito, have a segmented market where innovation is not seen as necessary or a priority, this is until they encounter competition whose competitive advantage is that they successfully incorporated innovation in their service offerings (Cardenas, 2011). Therefore, innovation can be driven through intrapreneurship as a key driver to make firms innovate, improve their flexibility, competitiveness and growth (Ismodes, 2012).

1.1 Motivation to undertake this study

The main motivation for this study is a combination of a personal reason, as I have an inclination towards entrepreneurship. This developed from my parents and without even realizing it I have been acting as an intrapreneur for the past year within the company I work for.

I chose the industry of SMEs consultancy companies in Quito, Ecuador because Piramide Digital the company I work for offers consulting services specifically management consulting to public companies in Quito. As part of an initiative of the Chamber of Commerce in Quito, an association of small and medium sized consulting companies was created in order to help members strengthen their management teams through programs, research, communication and networking which helps exchange ideas to help understand new developments in consulting and to exploit new opportunities as well as to stimulate a better understanding of the profession among the business community and the public in general (Camara de comercio de Quito, 2015)

As I have found out by my own experience as well as reading a number of articles, there is an issue that concerns SMEs which is the exhaustion of companies' business models, which is slowly driving companies to stagnation. Thankfully in all organizations there is a key individual, the intrapreneur, who is willing to contribute ideas to help the company in all ways possible. An intrapreneurial culture can help drive innovation, giving firms a longer lasting competitive advantage in the market (Galvez & Garcia, 2011).

1.2 Problem statement

According to a research, one of the problems of SMEs in Latin American countries, specifically in Ecuador is the companies' inability to successfully enter new markets in different cities of the country as well as internationalization. Innovation precisely constitutes a very important variable for these companies in order to reach new markets, and if not, to consolidate new products, services, processes or mechanisms to satisfy their clients' new needs, Ecuadorian companies remain stuck in the vicious cycle of traditionalism in business, however, this does not necessarily mean that traditional is good, except for the case of those companies where tradition is a distinctive value (Ismodes, 2012).

In line with another research, consulting companies in Quito, Ecuador cater to a market completely segmented where firms serve clients according to their size and needs. This means that big consulting companies in many cases serve big companies, SMEs serve their peers and in this context, innovation is not needed until faced with competitors whose competitive strategy would be to incorporate the value of innovation (Cardenas, 2011).

Thus, the need to promote innovation is ratified through intrapreneurship as the key to making businesses and organizations innovate, which will require workers and all members of the organization to participate in this process, which by its nature will require their commitment and will, use of resources, staff motivation, etc. (Ismodes, 2012).

This thesis will conduct a study in which an intrapreneurial culture and its trigger will be defined and the possible impact it will have on innovation will be studied. This will provide consultancy companies' managers in Quito with a unique insight in to the advantages of being intrapreneurial which they can promote and support in order to stimulate innovation in their organizations.

1.3 Objective of the study

The following are the objectives the study sets out to achieve:

Major Objective

- To analyze to what extent an intrapreneurial culture can drive new/improved service innovation in a consulting company.

Minor Objectives

- To determine what are the necessary organizational characteristics a consulting company needs in order to develop an intrapreneurial culture.
- To determine the level of intensity of an intrapreneurial culture in consultancy companies in Quito.

1.4 Research questions

This study will look at the link between an intrapreneurial culture in consultancy organizations and innovation. In order to attain desirable results, the following research questions will be addressed during the development of the study:

- **Major research question:**

How does an intrapreneurial culture affect innovation with regards to new/improved services offered by small and medium sized consultancy companies in Quito, Ecuador?

- **Minor research questions:**

The minor research questions are:

- ✓ What are the main characteristics that can trigger an intrapreneurial culture in an organization?
- ✓ What is the intensity of an intrapreneurial culture in the organizational environment of consultancy companies in Quito?

1.5 Research approach

As it was previously mentioned, the aim of this study is to analyze and determine the possible influence of an intrapreneurial culture on innovation. The specific sector of consulting companies was chosen for this research because based on some preliminary research, the researcher found out that there had been some earlier research that was undertaken, however in other types of industries and there are not any study on this specific research topic in consulting firms conducted in Ecuador. This study will shed new

light on what the current situation is with respect to an intrapreneurial culture in consultancy companies in Quito, Ecuador.

For this study a deductive approach will better help answer the major and minor research questions, by first starting with scientific research that will help explain causal relationships between variables which will then lead to the development of a theory which is then exposed to different tests thorough a series of hypotheses which will be tested and validated; in order to test these prepositions or hypotheses, quantitative data will be then collected using a structured methodology which uses different data collection methods that guarantee high reliability (Saunders, Lewis, & Thornhill, 2012).

A quantitative research has been chosen for this study which will help examine the correlation between the two variables (intrapreneurial culture and innovation) that will be numerically measured and then analyzed by using inferential statistics (Saunders, Lewis, & Thornhill, 2012).

The data collection instrument used for this research is an online survey constructed based on relevant literature found on the topic which will help collect the necessary data from a sample of respondents of the consulting industry.

1.6 Outline of the document

The thesis structure recommended is the one proposed by (Ole, 2011):

- **Abstract:** a brief explanation of what has been investigated, besides a clarification of why the research is important and a summary of the main findings.

- **Chapter 1: Introduction:** it gives a general idea of the study; which will cover what is being researched, what are the main objectives of the study, the research questions and the methodology used throughout the research.
- **Chapter 2: Literature review and theoretical background:** in this section, available literature regarding the research topic will be examined and what is known about a subject will be explained.
- **Chapter 3: Methods:** in this chapter the research strategy, its setting, the research population, the research sample used for this research are presented.
- **Chapter 4: Findings:** in this chapter a structured view of the data that has been gathered will be described as well as a discussion of the results, this is the main focus of the research.
- **Chapter 5: Discussion and conclusions**: the main conclusions will be presented, as well as the implications for the theory and the practice, the limitations of the research will be explained along with the possibilities for future research.

2. Literature review and theoretical background

2.1. Introduction

This section presents a theoretical model of intrapreneurship, an intrapreneurial culture and innovation. Furthermore it examines the relevant literature found on these topics.

First, common interpretations of intrapreneurship will be given, the key differences between intrapreneurship and entrepreneurship will be mentioned, a definition of intrapreneurial culture will be specified which will be used in this research as well as an explanation of an intrapreneurial culture in SMEs.

Next, a definition of innovation in organizations and its different types will be presented alongside with literature on innovation in small and medium sized consulting companies which is going to be used for this research.

Finally, an explanation of the relationship between an intrapreneurial culture and innovation in organizations will be presented. Based on the intrapreneurial model that tries to predict the different organizational characteristics that influence innovation, he defines the main "organizational characteristics" as those that allow to fine tune a firm making it easier to boost innovation in a company. A second concept is "individual traits" which are attitudes that employees (intrapreneurs) possess and a third concept seeks to use the knowledge of the employees in the organization in order to shape teams that seek new opportunities within the company they work for (Garzon, 2005).

This section will conclude with the conceptual model and the different variables that are going to be used for this study and the research hypotheses.

2.2. Intrapreneurship

The term intrapreneurship first arose in journals in the late 1980s, it is the result of the contraction of the term "in-company entrepreneurship" which has been credited to Pinchot and is a term that has become quite popular and whose definition has been more developed and extended over time (Parker, 2011).

Tripathy & Seshadri (2006) state that intrapreneurship represents an activity or process that takes place in an organization which instigates renewal within a firm. Mohanty (2006) extends this concept further and describes intrapreneurship as the power of a firm to create new products or services and opportunities through proactive empowerment driven by an individual or a team's inclination to take risks.

In short, according to Ismodes (2012) an intrapreneur is a person or group of people that start, execute, innovate and create projects, products and processes in a business that is already operating. The term intrapreneur comes from the word entrepreneur and the term internal and he defines it as "individuals with an entrepreneurial vision, who manifest a specific conduct and guide their behavior to the development of intrapreneurship, creating and building innovative ideas, developing them as profitable business

opportunities, committing their time and effort to research, creating those ideas into businesses for their own benefit and sustained growth of the firm, identifying successes or failures where others see problems and whose forte is innovation with talent and creativity of goods and services, thus becoming change agents" (Garzon, 2005, p. 7).

Obino (2012) adds that once intrapreneurship is properly encouraged and channeled it not only cultivates innovation but also helps employees who have good ideas to use the resources they have available in order to develop or redesign more successful products. Galvez and Garcia, (2011) manifested that in the past few years business models have changed and will continue to change radically from companies going from hierarchical structures to organizations where divisions exist that are small profit centers competing internally and are formed by intrapreneurs. These organizations will be the main generators of employment.

Maier and Pop Zenovia (2011) explain intrapreneurship as the execution and implementation of inventive practices within a firm by some of the staff while being supervised by a manager who helps improve the economic performance of the organization by using some of its resources as well as an appropriate motivational system for the company's employees.

In consonance with Menzel (2007, p. 734) a more specific definition of intrapreneurship is "the process of uncovering and developing an opportunity to create value through innovation and seizing the opportunity without regard to either resources or location of the intrapreneur".

Van der Sijde, Veenker, and During W. (2013) add that intrapreneurship can exist on two different layers that are continuously interacting: the organization level and the individual level. The following figure shows how intrapreneurship occurs within firms:

Figure 2-1 Intrapreneurship process based on (Menzel, 2007, p. 734)

The intrapreneurship process occurs within the boundaries of an existing organization and begins with the acknowledgement of an opportunity. Once this occurs, the opportunity is exploited which results in innovation (creation or renewal of products or services offered in the market). Each stage in the intrapreneurial process leads to value creation for a firm (Menzel, 2007, p. 735).

In the research conducted by Antoncic and Hisrich (2003, p. 10) they add that the intrapreneurial process can exist in any firm irrespective of its size, and can be viewed as a "curious, constantly searching activity at the frontier, not at the core" and it needs to be differentiated from other related managerial concepts such as: diversification, capabilities and organizational learning.

The main differences between the above mentioned concepts and intrapreneurship are described in the following table:

Table 2-1 Key differences between intrapreneurship and other managerial concepts

Concept	Key concern	Key similarity	Key difference
Diversification	Related to product/market synergy and/or acquiring complements (key: competitive advantage)	Entering new (unfamiliar) markets, developing new products	Product/market relatedness and synergy across organizational business is not a primary focus of intrapreneurship; it is about emergence, creation and newness
Capabilities	Rational combinations of resources and activates across value chains which are difficult to imitate and durable	Intrapreneurship as a manifestation of organizational innovative capabilities	Search for organizational inter-business coherence and synergy are not a key concern of intrapreneurship, instead it is about the emergence of diversity
Organizational learning	Knowledge acquisition and retention as well as organizational routine's improvement	Intrapreneurship might create disruptions which are a part of the learning process	Building knowledge base, organizational memory and routines are not a main concern of intrapreneurship, instead it is about establishing and improving knowledge

Source: (Antoncic & Hisrich, 2003, p. 11)

In the past thirty years, intrapreneurship has been more recognized and identified as a key element that helps organizational development; as a great tool for breaking the pattern, bringing something new to the market, creating new competences and entering new markets (Van der Sijde, Veenker, & During W., 2013).

Bhatia & Khan (2013) also highlight the importance of fostering intrapreneurship and how it has helped companies not lose their employees who might become their competitors by creating ways to help entrepreneurs develop potentially profitable products or services within the firm, by providing seed capital to the most promising projects, giving them stock options or an extra paycheck which helps retain the brightest employees.

One of the most important examples of intrapreneurship success is the case of W.L. Gore & Associates or Gore who had a fruitful intrapreneurship program which stimulated its associates to develop new ideas that benefitted the organization (Haller, 2005).

Gore is better defined as the firm that acts like a start-up, their production is based on a material called Gore-Tex which can be found in boots, gloves, guitar strings, jackets, etc. When the firm was first established, Gore thought it was key for his associates to feel passionate about the organization they work for based on four guiding principles: freedom, fairness, commitment and waterline. Usually in most organizations, people work in teams that have a hierarchical order. Gore changed this and developed a lattice organization where there were no traditional organizational charts, no chains of command, no hierarchy of communication and where all associates built a network through the development of personal relationships which created personal responsibility as well as a heavy stress on relationships (W. L. Gore - Culture of innovation, 2012).

Gore was motivated by the fact that people who work in an organization should be seen as self-motivating problem-solvers instead of disinterested in their job and only motivated by money. Based on this he allowed his associates to be free to create and control their own destiny in terms of their performance and what opportunities they got and how it affected their personal growth. Their unique intrapreneurial spirit allowed their associates half an hour every week of “dabble time” in which they are able to spend it as they wish as long as their main commitments are fulfilled. (W. L. Gore - Culture of innovation, 2012).

This resonates well with the fact that the company has been ranked for the 14th year within the “100 best companies to work for” as well as the best workplace in the UK, Germany, France and Italy; their voluntary employee turnover is around 5% (which is a third of the industry’s turnover) and even though the company has not published their financial status, it has been profitable since its beginning with revenues of roughly US$3 billion (W. L. Gore - Culture of innovation, 2012).

2.3. Distinctions between intrapreneurship and entrepreneurship

What fundamentally differentiates intrapreneurship from entrepreneurship is essentially the context in which the entrepreneurial act happens. The intrapreneur acts within an existing company and innovates on behalf of it; while the entrepreneur, develops a new business opportunity in a newly established company and innovates for him/herself. The main difference lies in terms of autonomy, type of risk and anticipated rewards (Carrier, 1999).

While intrapreneurship is about developing a new project in an already established firm to exploit new opportunities and create economic value; entrepreneurship includes developing a new endeavor outside an existing firm. However, their common characteristic is that both are about venture creation and are crucial because they create economic and social value (Parker, 2011).

Even though both concepts involve people who are idealistic and visionary, the intrapreneur, by being fully committed to the organization uses his/her skills and passion and manages to create something new for someone else's business; opposed to the entrepreneur who uses his/her skills and passion to create a new business and is open to take a risk whether successful or not (San Agustin, 2012).

According to Maier and Pop Zenovia (2011) the main differences between intrapreneurship and entrepreneurship are:

Table 2-2 Intrapreneurship and entrepreneurship: key differences

Intrapreneurship	**Entrepreneurship**
• The intrapreneur only takes career-related risk. The company takes the big risk because the company's resources are the ones being used.	• The entrepreneur takes the risk by using their own resources.
• Ready and easy access to resources.	• Challenges in sourcing the resources.
• The company typically owns the concept and intellectual rights with the individual intrapreneur having little or no equity in the venture at all.	• The individual entrepreneur owns the concept as well as the business.
• An organizational structure is in place which limits the rewards and compensations that the individual intrapreneur might receive.	• Potential rewards for the individual entrepreneur are theoretically unlimited.
• The organization is more flexible in regards to errors.	• One strategic indiscretion could mean instant failure.
• The organization is more shielded from outside forces or influences.	• The entrepreneur is more susceptible to outside influences.

Source: (Maier & Pop Zenovia, 2011, p. 3)

The key differences can be summarized as follows “while entrepreneurs provide ignition to a business, intrapreneurs work to sustain the flame” (Haller, 2014, p. 63).

2.4. Intrapreneurial mindset

The desire to challenge oneself is the most important trigger of intrapreneurship. Another important feature is the desire of wanting to create business value and new market offerings by developing an idea from mind to market (Mohanty, 2006). However, as presented in the work of Wood (2004) there are different names to describe the degree to which either an individual or an organization is intrapreneurial; these are: intrapreneurial mindset, intrapreneurial orientation, corporate entrepreneurship and intrapreneurship.

Table 2-3 shows the common features of the above mentioned concepts used to define the degree to which a person or firm is intrapreneurial.

Table 2-3 Common facets of intrapreneurial concepts

Term	Facets
Intrapreneurial Mindset	• Seeks opportunities • Uses great discipline • Pursues the best opportunities • Engages everyone’s energy • Flexibility • Innovativeness • Action-oriented • Goal-oriented
Intrapreneurial Orientation	• Innovation • Proactiveness • Risk taking • Autonomy • Competitive aggressiveness
Corporate Entrepreneurship	• Proactiveness • Innovation • Risk taking • New organizational creation • Renewal
Intrapreneurship	• Entrepreneurship within the company • Taking advantage of in-house genius

Source: (Wood, 2004, p. 7)

While there are many common facets in all the above concepts, for the purpose of this research the definition of intrapreneurial mindset will be used. This will be defined as: “thinking and behavior characterized by proactiveness, innovation and risk taking” (Wood, 2004, p. 10). The reason why a definition is provided is because there are many terms that are currently being used to describe the same concept and characteristics.

This definition has been chosen because as presented above there are many terms used to describe intrapreneurship and defining intrapreneurial mindset is proposed to provide readers with an essential understanding of the concept.

2.5. Intrapreneurial culture in organizations

The most significant difference between traditional culture and an intrapreneurial culture is that “the guiding directives in a traditional corporate culture are: adhere to instructions given, do not make mistakes, do not fail, do not take initiative but wait for instructions and protect your backside.” (Hisrich, Peters, & Shepherd, 2005, p. 1). This is the complete opposite of an intrapreneurial culture that is mainly characterized by “creativity, flexibility, independence, ownership and risk taking” (Hisrich, et al., 2005). In the words of Tripathy and Seshadri (2006) the main difference between a traditional and intrapreneurial culture lays in the fact that the latter offers a firm’s employees the opportunity to innovate in their role which gives them a sense of psychological ownership with regards to their roles and responsibilities, which should represent a new competitive advantage for the organization.

For an intrapreneurship-conducive culture needs to be built upon practices and policies that maximize the chances that people who work for an organization “meet, communicate openly, share ideas, listen to each other, share information, learn from each other and develop mutual trust and support” (Bhatia & Khan, 2013, p. 11).

The main objective of an intrapreneurship culture must be to drive innovation in an organization, which should represent a big competitive advantage for the company. This new behavior needs to transcend, lead to innovation and be seen and shared by all employees. (Tripathy & Seshadri , 2006).

The main facilitator of an intrapreneurial culture is full management support and the willingness to support risky new ideas and ventures as well as being willing to recognize good ideas and reiterate this among the employees so they do not hesitate and are able to voice their ideas (Bhatia & Khan, 2013).

Menzel (2007) emphasizes that intrapreneurship can be encouraged with a culture that has ideas, values, norms and practices that are able to conduct innovation, creativity and new initiatives and encourage intrapreneurial actions because the work environment is motivating and all employees feel like their work is meaningful. An intrapreneurial culture is nurtured by leadership that is able to give meaning to the work that is being done and an environment that encourages good relations between the leader and the ones

being led. If this relationship is satisfactory and promising, new ideas can fly further in the company and fuel intrapreneurship.

Many companies attribute their success to having an intrapreneurial culture which “draws on intrapreneurial skills and capabilities” which enable the company to be aware and alert by exposing them to new technologies, market place trends and overall new possibilities (Lumpkin, Cogliser, & Schneider, 2009, p. 47).

Galvez & Garcia (2011, p. 7) refer to a research conducted in SMEs in Colombia and the results found were that the factors that facilitate an intrapreneurial culture in an organization are: “autonomy, risk taking and failure tolerance, compensation and incentives and management support”. In the work of (Wood, 2004, p. 13) five unique factors are listed: “appropriate use of rewards, management support, resource availability, supportive organizational structure and risk taking and failure tolerance”.

Within this context, for this research, the factors listed above that influence an intrapreneurial culture have been combined and are the following:

- Autonomy
- Risk taking and failure tolerance
- Compensation and incentives
- Team work
- Supportive organizational structure
- Management support
- Resource availability

2.5.1. Autonomy

Defined by Galvez and Garcia (2011) as an employee’s self-determination to be an intrapreneur and take certain decisions on his/her own. They also highlight the importance of persuading people to participate and engage themselves in the company’s projects instead of forcing them to.

Autonomy can also be defined as an element that gives employees enough “responsibility, independence and the freedom to fail as well as time availability to carry out their own initiatives and control over the decisions they make“ Garzon (2005, p. 9).

Autonomy facilitates two types of behavior: opportunity-seeking and advantage-seeking which allow members of a company the freedom as well as the flexibility to initiate and develop intrapreneurial initiatives. Previous researches suggest that in a firm where autonomy is encouraged it fosters innovation which leads to new initiatives and it increases the competitiveness and effectiveness of a company (Lumpkin, Cogliser, & Schneider, 2009).

Within the organizational context, an environment of intrapreneurial activity and autonomous decision making which includes independent thinking and action should be fostered. Encouraging autonomous decision making at the grass roots of every organization is key whether they are supported or not, because most of the times autonomous individual efforts taking actions outside the hierarchy structure is what generates intrapreneurial results. These individuals act outside their usual work routine to stimulate development and growth and they represent a great source of creativity and new initiatives. High levels of autonomy in companies enable the creation, transfer and application of knowledge among individuals that pursue innovation (Lumpkin, Cogliser, & Schneider, 2009).

2.5.2. Risk taking and failure tolerance

It is the "extent to which organizations are willing to take risks and have tolerance to failure." It also refers to a company's disposition to take calculated risks while tolerating failure and not penalizing people if risky projects are unsuccessful (Wood, 2004, p. 13).

It can also be defined as individuals' inclination to take on smart risks and top managers' permitting them to develop their fresh innovative proposals as well as recognizing this risk taking attribute even if they fail (Alpkan, Bulut, Gunday, & Ulusoy, 2010).

Galvez & Garcia (2011) add that emphasis should not be on mistakes, instead individuals should be encouraged to be innovative, aggressive and take on calculated risks. Risk-taking encompasses taking audacious actions by taking a chance into the unknown by "borrowing heavily and/or commuting significant resources to ventures in uncertain environments" (Lumpkin, Cogliser, & Schneider, 2009, p. 56).

The role of top management in organizations is to enable investigation, experimentation and take risks "through organizational systems and informal processes at individual and team levels" (Lumpkin, Cogliser, & Schneider, 2009, p. 50).

2.5.3. Compensation and incentives

It involves "rewards in terms of time, bonuses, actions, promotions, utility share, personal recognition, etc." (Garzon, 2005, p. 9).

Wood (2004) proposes that firms should have effective systems that help encourage and endorse individuals and their intrapreneurial activities in the organization.

This reward system can involve intrinsic rewards which "arise from the intrinsic value of the work for the individual" (personal achievement, professional growth, sense of accomplishment, etc.) and extrinsic rewards which "arise from the desire to obtain some outcomes that are a part of the work itself" (public recognition, awards, promotions, verbal praise, etc.) (Amabile, 2003, p. 2.).

Galvez and Garcia (2011) highlight the importance of encouraging and rewarding intrapreneurial behavior with an effective reward system based on results and/or related with their individuals and teams' performance.

2.5.4. Team work

Diverse teams are a key component in an intrapreneurial culture. It is important to create commitment with the team as well as with the company. These teams should be able to tolerate conflict, have self-confidence and trust each other. Managers should allow people to rotate and interact with people from different areas of the organization and encourage a collectivistic culture instead of an individualistic one and establish mechanisms that allow people to connect and build networks with others in the company (Galvez & Garcia, 2011).

Organizational teams should be allowed the freedom to operate outside the company's present norms and regulations and to be able to act more independently which will let them leverage the organization's strengths by recognizing new opportunities that go beyond the firm's current capabilities which will then encourage the development of new business ventures and/or practices (Lumpkin, Cogliser, & Schneider, 2009).

2.5.5. Supportive organizational structure

This factor can be defined as the degree in which organizations encourage and support intrapreneurial activities which could include formal channels by which ideas are submitted, evaluated and developed (Wood, 2004).

This attribute also has to include "flexibility with schedules, budgets, acceptance for messiness, lack of coordination, giving up order and low supervision" (Garzon, 2005, p. 9).

Galvez and Garcia (2011) add that it should also include the possibility to access resources that have not been included in the company's budget and the patience to wait for expected results as well as the creation of a demanding yet friendly environments for individuals to work in, likewise the flexibility for employees to work with people from other departments.

2.5.6. Management support

This factor is crucial in order to generate new innovative ideas and projects. This is "essential for awaking intrapreneurial spirit within an organization". Management support shows the managers' disposition to enable and endorse the intrapreneurial spirit in the organization which is aimed to encourage more employees to engage in innovative efforts and projects (Alpkan, Bulut, Gunday, & Ulusoy, 2010, p. 735).

It is the "extent to which management is willing to facilitate and promote intrapreneurial activities in the organization" (Wood, 2004, p. 14).

An environment that helps foster intrapreneurial activities in an organization is key. In order to accomplish this, explicit goals must be set (Wood, 2004).

Management support also represents the fact that managers are able to make available and mobilize company's resources as well as acceptance of employee's innovative ideas and help these ideas turn into reality (Miah & Hossain, 2014).

A key element is the importance of stability in projects that have been started and developed by employees just as the willingness of top management to support this intrapreneurial initiatives (Galvez & Garcia, 2011).

2.5.7. Resource availability

This aspect suggests that employees should believe in the fact that they have resources available to them (including time) to develop their intrapreneurial activities (Wood, 2004).

It can also be defined as the creation of an organizational setting in which intrapreneurs have easy access to the organizational resources they need and they are in an environments in which they are encouraged to develop and implement innovative ideas and projects (Alpkan, Bulut, Gunday, & Ulusoy, 2010).

Therefore, in order for an intrapreneur to break forth in any organization it is necessary that the company creates and fosters a culture that allows their employees the possibility to find opportunities for innovation by allowing them to take their own decisions, take on smart and calculated risks, allow them to fail and learn from the mistakes made, recognize their initiatives, let them interact and work with people from different areas of the organization, commit to their projects and support them and give them the resources the company has available to work on their new projects which will lead to them feeling ownership and satisfaction of their internal projects. And simultaneously, the firm needs to create an enabling environment where the idea of intrapreneurship is fully understood and well communicated to everyone in the company.

2.6. Intrapreneurial culture in small and medium sized businesses

Small and medium sized businesses are commonly portrayed as having a simple structure, clear orientations and well informed and concerned managers; even though intrapreneurship in SMEs has received little attention, the biggest difference between SMEs and large companies in terms of intrapreneurship is the role of top management, which is important and critical for SMEs, for better or for worse, because in this situation, the manager is informed early of the different internal project initiatives proposed by employees and is ready to provide a helping hand or put a stop to the process altogether, this is determined by the initiatives' level of convergence with the firm's strategic objectives (Bouchard & Basso, 2011).

According to Carrier (1999 p.8) there are six postulates that support the need to bring together the concepts of intrapreneurship and small and medium sized businesses:

1. Intrapreneurial characteristics are not the exclusive property of employees of large firms.
2. Intrapreneurs can be first-class allies for owner-managers of growing small businesses.
3. The fact that intrapreneurs are absent from small business literature does not mean they have no right to be there.
4. The loss of an intrapreneur will have more serious consequences for small firms than for large firms.
5. Small firms are potential incubators for intrapreneurs.
6. Small businesses provide a favorable environment for innovation

Carrier (1999) similarly highlights that intrapreneurship is infrequently the outcome of inducement or training programs but instead in tends to appear spontaneously; another significant point that helps foster intrapreneurship is the attitude of the manager or the firm's owner and his/her ability or readiness to tolerate a co-star and share the spotlight or not and their personal attitude towards their employees and his/her personality. In this context, the driving forces of managers are associated with the characteristics of their companies (perception of a more or less competitive environment, growth objective, management or production problems), they are more willing to foster and boost intrapreneurship if they believe it will help the company be more flexible, productive or able to adapt better to its environment.

In line with this, Bouchard and Basso (2011, p. 227) explain that managers have a major influence on intrapreneurship, which can be mediated by focusing on strategy making and organizational variables "focus on autonomy on the part of the employees combined with fluid circulation of information and simple but clear rules of the game" these variables that can be controlled for the greater part by them. They go on and make a clear differentiation between two types of SMEs: "traditional SMEs" which are characterized by complete centrality of the owner (over restricted atmosphere) limited information gathering activities and a highly informal environment where the intrapreneurial process could not be conducted; and "miniature large firms" which are described as decentralized, characterized by intense information gathering activities and a moderate level of formalization which is more favorable to foster and conduct intrapreneurship.

Small and medium sized businesses are suddenly becoming the "shining stars" of the new economy and they are not likely to succeed in the new competitive environment with only traditional entrepreneurs. The solution lies with the intrapreneurs who use their abilities and talent to fit in a rapidly changing environment, respond to new expectations while trying to bring something new to the market.

Sustainability and a sustained competitive advantage can be obtained by these “innovation hunters” who have a commanding intrapreneurial attitude (Mehmet, 2012).

In agreement with the research by Van der Sijde, Veenker, and During W. (2013, p. 29) intrapreneurship can occur in all kinds of companies regardless of their sector; service oriented firms use intrapreneurship and have an intrapreneurial behavior, “the type of the company has no effect on the level of intrapreneurial spirit”, in consonance with the fact that intrapreneurship can also take place in any company regardless of its size.

2.7. Innovation

According to Mohanty (2006) innovation is a process by which ideas are progressively turned into reality, old products, services and processes are improved, which helps create new value for a firm by helping them creatively change one or more dimensions of their business.

Through innovation employees have a strong ownership feeling of the company’s growth, which is the basis for individuals to develop new ideas, innovate on current products or services, redefine or reorganize the business concept and build a sense of leadership in relation to competitors and be willing to pursue new opportunities (Obino, 2012).

In consonance with Garzon (2005) who defines innovation as the act of bringing a new idea, method, service to the market by organizing, solving issues, making alterations and modifications to products or services with the main objective of fulfilling needs or creating new ones.

Innovation is a capability that can enable organizations to gain and sustain a competitive advantage and exceed their customers and stakeholders’ expectations. It is “about delivering value and innovation capabilities which enable companies to build the future and adapt to change” (Baldwin & Curley, 2007, p. 4).

The main facilitator of innovation stems from the full support of top management. They encourage innovation, listen and recognize new ideas, take risks, provide training, and facilitate the transformation to a new risk-taking culture where results are encouraged and rewarded (Mohanty, 2006).

In order to measure the degree of innovation in small and medium sized consulting companies, Galvez and Garcia (2011) propose two different approaches: an objective quantitative approach that measures the number of new and/or changes made to existing services a consulting company offers their clients; and a subjective approach based on the CEO’s perspective on the innovation in the company. For the purpose of this research, the objective approach is recommended because the subjective approach “tends to underestimate the innovation of SMEs” (Galvez & Garcia, 2011, p. 31).

For the purpose of this research it is pertinent to emphasize that the aim of this study is the intrapreneur, who takes the innovation initiative which can result (or not) in the creation of something new.

In order to measure the degree of innovation in new services offered by consulting companies, the following two items will be measured: improvements and/or changes in current services the company is currently offering and commercialization of new services.

2.8. Types of innovation

Garzon (2005) proposes to classify innovation in two main categories:

- **Radical innovation:** defined by Oke (2007, p. 567) as "projects that concern new products or services". Baldwin and Curley (2007) describe it as being able to change an entire industry while the Centre for Business Innovation (2015) specify that it is a revolutionary change to the business based on "new ways to plan, manage, produce and market products and services", while Schilling (2013) adds that this type of innovation creates something that is very different from previous solutions.

- **Incremental innovation or minor changes:** changes in the way different components of a product are connected, that make them be integrated in a new and more efficient way Garzon (2005). Just as Oke (2007, p. 567) who defines it as "type of projects concerning improvements to existing products or services", this is confirmed by a research where its added that these incremental changes which are the result of "changing customers' needs or out of the necessity of the company to remain competitive can add or sustain value to existing or new products or services" (Centre for Business Innovation, 2015). This type of innovation makes improvements on radical innovation (Baldwin & Curley, 2007).

  Schilling (2013) adds that innovation has different types of essential knowledge which have different effects on an organization's competitors and customers. She proposes that besides categorizing innovation into radical or incremental, it should also include a category of process innovation.

- **Process innovation:** they are seen in the way a firm does business (producing techniques, marketing, etc.) and its aim is to make the company become more efficient and effective production wise (Schilling, 2013).

2.9. Innovation in service companies

"The core offering of service companies is often referred as to a service product or simply a product even though most tend to be intangible" (Oke, 2007, p. 566).

Innovation in service companies can occur when the firm is able to develop new core offerings or improve already existing offerings which generate new revenue streams, these developments are undertaken for different reasons such as: to make the company's core services more attractive to customer and/or to attract new potential customers. The above mentioned developments have a tendency to include customer interaction and are related to new or existing products (Oke, 2007).

Innovation in service companies can be categorized as a new service concept, new service process or a new service model (Hsieh, Chiu, & Wei, 2013).

Table 2-4 Service innovation categories

Types	Elements

New service concept	• Integrated solution
	• Novel Offering
	  ○ Diversified service
	  ○ Service differentiation
	• Service Improvement
	  ○ Refined service
	  ○ Improved original service
	  ○ Service customization

New service process	• Extended client interface
	  ○ Extended service hours
	  ○ Extended service approaches
	• Innovated service delivery system
	  ○ Improved service delivery system
	  ○ Technology-enabled service delivery system
	• Improved supply chain

New service business model	• New service-model revenue model
	  ○ Improved revenue model
	  ○ Technology-enabled revenue model
	• Value network cooperation
	  ○ Strategic alliance
	  ○ Suppliers and buyers cooperation
	  ○ Customer cooperation
	• New market segment
	  ○ Explored new market demand

Source: (Hisrich, Peters, & Shepherd, 2005, p. 14)

Pim den (2010, p. 492) states that in the case of services, "due to the considerable role of customer interaction and its intangibility characteristic" the approach to research about this type of innovation is a little bit limited, however he agrees on categorizing service innovation in the above mentioned dimensions where innovation can occur in a firm, however some resources and capabilities need to be added to manage service innovation such as:

- **Conceptualizing:** due to the fact that service innovations arise from intangible new ideas or modifications to already existing ideas which already create a new value proposition to a firm's customers; conceptualizing, designing, or testing these type of innovations can become a bit ambiguous, therefore a new service's first stage of conceptualizing should include a more detailed process which is capable of visualizing the service offering regularly, as well as organizing multidisciplinary teams who are responsible of bringing an idea of an innovative service and having another team who is in charge of organizing that the management supports it (converting a rough idea into a feasible service offering) (Pim den, 2010).

- **(UN) building:** in its core, this capability means that "many new services are newly bundled, enriched, blended or the opposite of newly unbundled, stripped down to the bare essential service offering" (de Jong, 2010, p. 6). The first is about making smart combinations while still being able to customize the service offering (example: integrated consultancies that provide accountancy, organizational advice and ICT service) while the latter is about building a highly specialized service offering that is familiar to its customers and to a certain point it can de standardized (example: consulting firms specializing in managerial oriented advise) (Pim den, 2010).

- **(Co) producing and orchestrating:** the positive outcomes of co-producing and co-creating networks and sharing resources and competences have brought benefits to organizations (de Jong, 2010). These new networks are a key capability because they allow a firm to have a new service in the market. This means that the "core service provider has to co-design a co-produce a service innovation with other suppliers and manage to accompany the alliance" (Pim den, 2010, p. 502).

- **Scaling:** this capability is the key for an organization and its ability to stay competitive (de Jong, 2010), scaling is about a firm's ability to explore different options, launch an innovative service in an experimental scenery and then being able to launch it firm-wide. Doing this successfully means more efficiency in the innovation process as well as helping create consistent service solutions which are associated with brand recognition (Pim den, 2010).

- **Learning and adapting:** in service companies, this goes beyond R&D, it is about a firm's capacity to mobilize its resources all through the organization (de Jong, 2010). These two capabilities are defined as the way service innovation is managed and adapted, as capabilities "learning allows tasks to be performed more effectively and efficiently, often as an outcome of experimentation and permits reflection on failure and success" (Pim den, 2010, p. 505). The author goes on and adds that a firm should constantly be asking the following questions and if necessary, they should help the company change the way new services are created and spread:

    - What have we learned from our latest set of service experiments?
    - Can we use bundling and unbundling strategies for deriving new services?
    - How do we make sure we generate enough cues for service innovations?

Regarding this research, the innovation type that has been chosen to analyze innovation in service companies, specifically in consulting companies is new service concept and its elements of novel offering and service improvement.

2.10. Relationship between an intrapreneurial culture and innovation

In the late 1980s Peter Drucker proved the importance of a change in mentality in organizations in order to develop innovation within the company and emphasized the importance of the intrapreneur. Innovation developed through the intrapreneurial process can be considered as one of the dynamic capabilities, which represents "the ability of a firm to integrate, construct and reconfigure its internal and external competencies in all the areas of the organization in an environment that is changing rapidly" (Galvez & Garcia, 2011, p. 6).

The innovation process in its different stages is an organizational procedure that necessarily involves an intrapreneurial culture which should be encouraged and lived by the employees (Manimala & Thomas, 2006).

A company's resources and capabilities can be a source of sustainable competitive advantage as well as able to create economic value, as long as both are valuable, rare, and costly to imitate or have no strategic substitutes. Therefore, innovation as a capability developed inside the organization through intrapreneurship can become a source of sustainable competitive advantage for the firm (Barney, 1991). Innovation can be defined as a capability developed through intrapreneurship can mean a competitive

advantage for an organization and in order for innovation to work, an intrapreneurial culture as well as a supportive organizational structure are required; they also highlight the importance of innovation as one of the many strategies used for success as well as the relationship between innovation and employees who have a strong sense of ownership on the company's growth as well as projects and manifest this through the act of intrapreneurship; in this sense, intrapreneurship allows employees to participate and develop new opportunities and possibilities in order to make the company grow and improve (Trujillo & Guzman, 2008).

Garzon (2005) conducted a research in SMES in Bogota, Colombia to observe the role of intrapreneurs and an intrapreneurial culture in the innovation process. His main finding is that a new kind of employee is required, one who is characterized by his ability to envision ingeniously the different strategies that might be useful to be adopted in the future as well as the company's talent to create and foster an intrapreneurial culture.

Galvez and Garcia (2011) highlight a research conducted in Taiwan where a positive and significant relationship is found between an intrapreneurial culture and innovation and how companies who have adopted an intrapreneurial culture have better product and service innovation than those companies who do not.

Innovation and intrapreneurship can lead to value creation for a firm because they help enhance the possibility of entering new markets by transforming or improving existing services, creating new demand and diversifying business opportunities (Bahamon, 2013).

2.11. Consulting companies

The evolution of consulting companies can be traced back to the years after the Second World War where consulting entrepreneurs emphasized the inconsistencies between the status quo and the general cultural rationalities and they decided to use their know-how from outside their field of knowledge to find potential solutions to these issues while emphasizing the social benefit of their proposed solutions. They established the uniqueness of their organizational form by forming relationships with persons outside their field to validate their problem-solving business model. In its early stages, a consulting company's value contribution was providing smart people who had varied expertise and could give a client an unbiased viewpoint on their challenges and issues. This value proposition has shifted from providing clients with smart people to help solve their problems to providing them with access to the consulting company's knowledge which has been enlarged through their experience in dealing with multiple problems at the time, use these encountered problems to gain more knowledge and the company's capacity to organize and communicate their knowledge to its consultants and clients (Srinivasan, 2014).

Milo (2015) adds that a consulting company is an autonomous firm providing professional advice to different organizations to help them accomplish their organizational objectives by helping them solve their

business problems and recognize new opportunities, while increasing learning and implementing changes.

Kubr (2002, p. 5) defines consulting as “any form of providing help on the content, process or structure of a task where the consultant is not responsible for doing the task itself but is helping those who are”. Consultants can intervene in different ways, however it can be summarized in the following activities:

- Providing information
- Providing specialist resources
- Establishing business contacts and links
- Providing expert opinion
- Doing diagnostic work
- Developing action proposals
- Developing systems and methods
- Planning and managing organizational changes
- Training and developing
- Counselling and coaching

Research suggests that consulting firms are commonly organized in a structured matrix, one axis describes the type of consulting such as: strategy, technology, executive, sales, leadership, etc. and the second axis is an industry focus such as: oil, retail, public sector, etc. (Milo, 2015).

Kubr (2002) designed a five phase model that summarizes the consulting process:

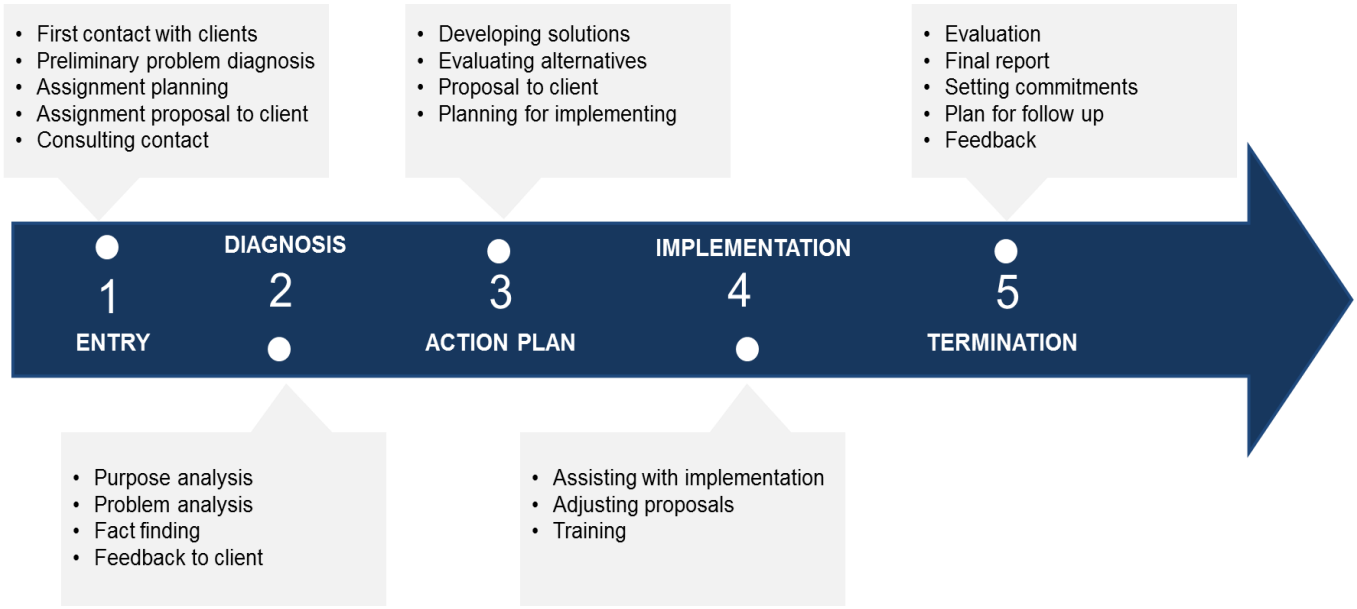

Figure 2-2 The consulting process based on (Kubr, 2002)

Consulting has progressively become more standardized and the price-service factors are key in the clients' contracting decisions, which is why consulting firms are looking into how to achieve cost reductions which will lead to a competitive price advantage while adapting in a changing environment and increasing their customers' satisfaction by offering new services that are tailor-made to satisfy their clients expectations and preferences and offering personalized customer service (Mompaler, Carmona, & Lassala, 2015).

2.11.1. Intrapreneurial culture and innovation in consulting companies

In the specific case of small and medium sized consulting companies, consultants "continuously emphasize the need to innovate in their advice to their clients, while their main core competences is to deliver the latest advice and to implement knowledge based on practical and scientific sources" (Taminiau, Smit, & de Lange, 2009, p. 27). The biggest obstacle in measuring innovation in the consultancy sector is that it is harder to pinpoint the innovation made in these companies than in more tangible innovative sectors such as manufacturing or technology firms. However, innovation can be seen in the consultancy sector as delivering a completely new service or the case of a specific service being applied in a new context (Taminiau, Smit, & de Lange, 2009).

The key to making consulting firms innovate is management support and the importance to stimulate and boost a culture in which the sharing of ideas and creation or improvement of the company's services takes place with the full support of management, overall a change in people's mindset and organization culture towards a culture of sharing ideas and flexibility (Arias, Minguela, & Rodriguez, 2001).

In a study conducted by O'Mahoney (2011) it is highlighted the importance of a firm to innovate in order to maintain competitive advantage and being able to differentiate from the competition, as economies

change and react to changes in the local, national and international markets, consulting companies' clients also react to these changes; the ability of the consulting firm to react to their clients changing needs and expectations is key, which makes creativity and innovation essential in the industry. Innovation is somewhat cheap in consulting firms because there are no raw materials, the development process is not long and the testing procedures are not complex (unlike for example manufacturing firms implementing technological innovation) consulting companies usually observe a management problem many times, which their individual customer will experience maybe just once which allows them to successfully improve their solutions and gain more experience in the same way as other firms create and test technologies.

The main findings of the above mentioned research are summarized in the following table:

Table 2-5 Innovation in consulting companies

What do consulting companies mean by innovation?	New solutions: creating new services that are new in the market or the consulting firm. Adapting solutions: modifying existing services to access more clients and enter new markets.
Why do consulting companies innovate?	Differentiating from the competition Demonstrating knowledge Gaining more clients Maximizing income/sales Keeping consultants interested in their job
Innovation's enablers in consulting companies	High levels of autonomy Strong upward communication Time set aside for research and development Having a dedicated innovation team Meeting other groups in the company

Source: (O'Mahoney, 2011, p. 8)

Innovation in consulting firms can be summarized as follows (Barros, 2012):

- **Think small:** innovation in consulting firms leans towards being tailor-made and client-specific and are based around improvements or new services instead of being large scale.
- **Explore new frontiers and enable talent:** bringing new ideas and actually listening to them, they also give their consultants autonomy with top management having an open communication with them and listening to their ideas instead of making it a bureaucratic process (innovation implicates risk, so loosening controls is not bad).
- **Be proactive:** enable creativity thorough communication and persuasion.

- **Take risks:** by analyzing and prioritizing areas where new ideas could put the company ahead of the competition.

The above mentioned characteristics of why a consulting firm innovates have a clear connection with an intrapreneurial culture, where there is no one better than the company itself driven by its internal talent and an enabling environment that allows them to discover new ways to meet needs, solve problems or find ways to satisfy their customers' needs. New solutions which will undoubtedly create new business opportunities add value to the company and allow it to successfully differentiate from its competition (Masid, 2014).

2.12. Conceptual model

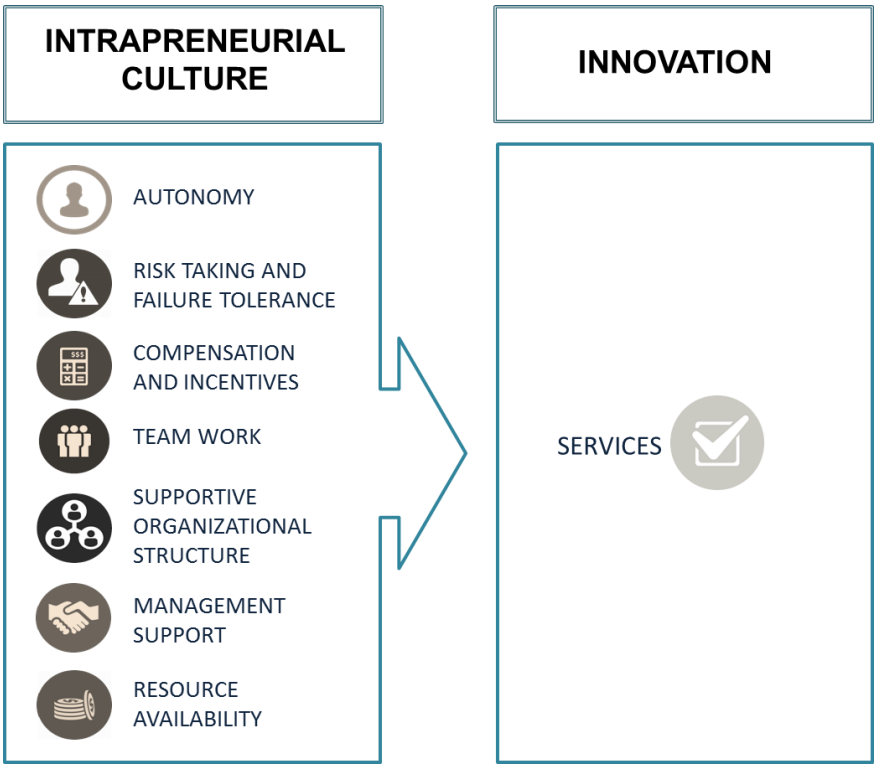

Figure 2-3: Conceptual Model

2.12.1. Independent variables

The independent variables in this study, will explain what drives an intrapreneurial culture in consulting companies in Quito, Ecuador.

For the purpose of this study, seven independent variables are considered:

1. Autonomy
2. Risk taking and failure tolerance

3. Compensation and incentives

4. Team work

5. Supportive organizational structure

6. Management support

7. Resource availability

2.12.2. Dependent variables

The purpose of this research is to analyze the dependent variable which is the degree of innovation in small and medium sized consulting firms in Quito, Ecuador measured in services (either new or modifications to services already being offered by the company).

2.13. Research hypotheses

H_1: An intrapreneurial culture has a positive impact on innovation.

Sub-hypotheses:

H_{1A}: Employee autonomy has a positive impact on innovation.

H_{1R}: Employee encouragement to take risks and tolerance to failure has a positive impact on innovation.

H_{1C}: Compensations and incentives given to employees has a positive impact on innovation.

H_{1T}: Team work among employees has a positive impact on innovation.

H_{1S}: A supportive organizational structure has a positive impact on innovation.

H_{1M}: Management support has a positive impact on innovation.

H_{1R}: Resource availability has a positive impact on innovation.

3. Methods

In this chapter the research strategy that has been chosen for this study will be explained, as well as the research setting. An explanation of the research instruments will be given and the research population together with the research sample used are also presented.

After this, the data collection process will be described along with an explanation of how the data was processed.

3.1. Research strategy

The aim of the research strategy is to plan how to answer both main and minor research questions that have been posed for this study through the research hypotheses proposed in chapter 2; the methodological choice that has been chosen for this study is a mono-method of quantitative research, where a single data collection technique and a corresponding analyzing technique has been chosen. The specific strategy chosen for this research is an online survey which is fairly common in business and management research, surveys are quite popular because they allow to gather standardized data from a sizeable population which is easy to compare, and the advantage of using a survey is that it is reasonably easy to both explain and understand. The data collected using a survey can be used to test possible relationships between different variables, it also gives the researcher more control over the research process and when a population's sample is used, it is possible to come to conclusions that are representative for the entire population (Saunders, Lewis, & Thornhill, 2012).

The specific online survey that is going to be used in this research has been based on two previous questionnaires proposed by Galvez and Garcia (2011) and Wood (2004) where all the questions will be translated to Spanish; the question type used are rating questions used to collect opinion data and quantity questions where the response is a number. The online questionnaire will include a cover letter and a brief introduction which is intended to create an emotional connection with the respondents, encouraging them to participate and correctly fill in the survey (Saunders, Lewis, & Thornhill, 2012).

3.2. Research setting

The study will be conducted in Quito, Ecuador where the data has been collected from small and medium sized consulting companies, an online questionnaire has been sent out to a sample of these companies which will help test the hypotheses presented in this research.

3.3. Data sources

A primary data collection has been used for this research which means the data has been collected specifically for this study, it is based on a self-completed online survey whose main advantage is that it is less costly than having a person interviewing the respondents and it involves each respondent reading and answering the same set of questions in a predetermined order without having an interviewer present, it also gives anonymity to the respondents and allow the researcher to do follow up on the emails sent and send reminders in case a person has not filled in the survey yet (Saunders, Lewis, & Thornhill, 2012).

The questionnaire has been adapted and validated from two previous investigations, where some questions have been changed in order to make them more specific and coherent with this research, there is a total of thirty five questions in the survey.

The study has been conducted in the industry of small and medium sized consulting companies in Quito, Ecuador, where the emails of the different companies have been provided by the Chamber of Commerce in Quito and its association of small and medium sized consulting companies.

3.4. Population and sample

According to Ecuador's Superintendency of Companies there are 436 small and medium sized consultancy companies who are currently registered and active in Quito, Ecuador (Superintendencia de Compañias, 2014).

An online structured questionnaire has been sent out via email to a sample of 170 consultancy companies, where surveys will be sent out to the company's registered email contact information in the Chamber of Commerce which in most cases is the company's middle manager who is defined as the person who works below the company's CEO, and has direct contact with the employees.

The response rate expected is 60% due to the already established and concrete relationships that the company the author works for has developed over time with these consulting firms; one questionnaire will be sent out to the companies so the researcher has some control over who completes it.

The following formula was used to calculate the sample size:

$$n=\frac{n_o}{1+\frac{n_o}{N}} \text{ where: } n_0=p*(1-p)*\left(\frac{z*\left(1-\frac{\propto}{2}\right)}{d}\right)^2$$

where:

N: sample size

p: probability of occurrence

∝: confidence level

d: estimation error

The above mentioned sample size was determined based on (Bartlett, Kotrlik, & Higgins, 2001) as well as the proposition given by the Central Limit Theorem that for most distributions a sample size (n>30) is sufficiently large and will be approximately normal (Groebner, Shannon, Fry, & Smith, 2011)

3.5. Measurement instrument

The measurement instrument used in this research in an online questionnaire, which has been designed using Google Drive, specifically Google forms in which once a response is recorded it is saved in a spreadsheet.

The online survey's questions are based on previous researches conducted by Galvez & Garcia (2011) and Wood (2004) and appropriate literature and have already been used and validated by these

researchers, the questions have been translated to Spanish, where a parallel-translation approach has been used in which the source questionnaire (English) is translated to the target questionnaire (Spanish) by two different people, both versions were compared which led to the final version of the questionnaire, the main advantage of this approach is that it leads to good wording of the target questionnaire (Saunders, Lewis, & Thornhill, 2012).

There are a total of thirty five self-completed questions, which represent seven variables (autonomy, risk taking and failure tolerance, compensation and incentives, team work, supportive organizational structure, resource availability and service innovation).

The layout of the questionnaire needed to appear appealing to the respondents which is why a template, different colors and a good page layout were chosen, the surveys have been emailed using a hyperlink where both the hyperlink and a cover letter whose objective is to explain the aim of the survey are a part of the email message; a small introduction where a clear explanation of how to fill in the survey is given at the beginning of the form (Saunders, Lewis, & Thornhill, 2012).

For the first thirty one questions that are related to all seven variables are close ended questions, specifically rating questions, which represent the respondents' degree of agreement to each question (Saunders, Lewis, & Thornhill, 2012); a seven point Likert scale has been used in order to asses each question (1= Strongly disagree, 2= Disagree, 3= Disagree somewhat, 4= Neutral, 5= Agree somewhat, 6= Agree, 7=Strongly Agree) the seven point Likert scale has been chosen for this research because it "provides more granularity and hence better decision making as well as more variance than a 5-point scale" (Aguirre, 2010).

For the final four questions related to the service innovation variable, quantity questions were used which means the response is a number, which represent the amount of a characteristic (Saunders, Lewis, & Thornhill, 2012).

The questionnaire's structure can be found in the Appendix 1.

3.6. Data collection and data processing

To contact the potential respondents an email was sent on June 3rd 2015 where the objective of the research as well as the details of the survey alongside with a small introduction to invite them to participate was explained. A hyperlink was also included in the email.

On June 10th 2015 the online questionnaire was closed and the responses recorded in Google Drive (spreadsheet) were exported as a comma-separated value spreadsheet that could be opened in Excel.

A total of 436 emails were sent in order to increase the response rate and get as many responses as possible, the emails were sent using the researcher's business email (Piramide Digital) with the help of Sugar CRM campaign's module which the company the researcher works for uses to create and manage

email campaigns and send mass emails on a daily basis. The emails were sent to the list of consultancy companies' emails provided by the Chamber of Commerce of Quito which have been previously recorded in Sugar CRM.

As was explained in the population and sample section of this research, the expected sample size was 170 respondents, however more participants than expected decided to take time and fill in the survey, a total of 217 responses were collected up to the date that the online questionnaire was closed. This represents a response rate of 127.65% as compared to the required responses and all of the answers collected could be used, processed and analyzed.

The main explanation as to why the response rate was this good is mainly because of the good relationship the company the researcher works for has with the other consulting firms who are a part of the association of small and medium sized consulting companies.

A possible specific reason to explain the non-response is that the survey was closed seven days after it was sent out which could have contributed with people not being able to fill in the online questionnaire on time. Since the responses of the online questionnaire where anonymous and only a timestamp was created whenever a new response was recorded, there is not a classification between who did and did not respond.

Table 3-1 Total response rate

Number of emails sent	**Expected number of participants**	**Actual number of participants**
436	170	217
Percentage rate	100%	127.65%

Source: From the researcher's survey

3.7. Data analysis

For this research the tool chosen to analyze the quantitative data attained with the online questionnaire using simple statistical techniques is the statistical software called Stata.

Once the spreadsheet that was saved in Google Drive was exported, it was opened in Excel where the answers were coded to numbers according to the Likert scale used (1= Strongly disagree, 2= Disagree, 3= Disagree somewhat, 4= Neutral, 5= Agree somewhat, 6= Agree, 7=Strongly Agree) once this was done, the comma-separated value file was ready to be imported in Stata.

After the file was imported in Stata and ready to use, the names of the variables were changed in order to be better identified and all the questions that represent one variable were grouped one next to each other for better organization.

When the data was organized a Cronbach's alpha analysis, factor analysis and KMO test (Kaiser–Meyer–Olkin measure of sampling adequacy) were done which will be explained in the Validity and Reliability section of this research.

3.8. Validity and reliability

Validity is "the extent to which the data collection method accurately measures what it was intended to measure" Saunders, Lewis, & Thornhill (2012, p. 684) in order to increase the validity of the survey used for this research, the questionnaire was adapted from previous researches proposed by Galvez & Garcia (2011) and Wood (2004).

Also a pilot test was conducted once the questionnaire was translated to Spanish, prior to sending the emails whose main objective was to "refine the questionnaire so that respondents will have no problem in recording the data" Saunders, Lewis, & Thornhill (2012, p. 451) which was very useful because the researcher was able to modify and change the wording in some of the questions based on some recommendations making them more relevant for this study.

The pilot test was done with the help of 13 people who are currently working in the company the researcher works for (Piramide Digital) this is a good number for a pilot test because according to Saunders, Lewis, & Thornhill (2012, p. 451) "for most student surveys the minimum number for a pilot test is 10".

The main aim of the pilot test was to check for: Saunders, Lewis, & Thornhill (2012, p. 452)

- How long the questionnaire took to complete
- The clarity of the instructions
- Which questions are unclear or ambiguous
- Whether the layout was clear and attractive
- Any other comments

The objective of testing for reliability is to know "whether or not the same set of items would elicit the same responses if the same questions are recast and re-administered to the same respondents" (Santos, 1999).

Internal consistency encompasses correlating the answers in the online survey with each other hence it measures the consistency across a subgroup of responses or all the questions in the questionnaire (Saunders, Lewis, & Thornhill, 2012).

There are several methods to test for internal consistency such as Cronbach's alpha, factor analysis and Kaiser–Meyer–Olkin test (Saunders, Lewis, & Thornhill, 2012).

3.8.1. Cronbach's alpha

It is one of the most common methods to test for internal consistency, "this reliability test is used to measure the consistency of responses to a set of questions (scale items) that measure a particular concept" Saunders, Lewis, & Thornhill (2012, p. 430).

When elements are used to form a scale they need to have internal consistency, all these elements should measure the same thing hence, they should be correlated with each other, Cronbach's alpha consists of an alpha coefficient with a value between 0 and, it works because "the variance of the sum of a group of independent variables is the sum of their variances; if the items are positively correlated, the variance of the sum will increase" (Bland & Altman, 1997, p. 572).

There are different researches about adequate values of alpha, however for the purpose of this study an alpha ranging from 0.7-0.9 will be considered acceptable; low alpha values mean poor correlation between the items however high values (higher that 0.9) could mean that some items are redundant and are testing the same question but with different wording (Tavakol & Dennick, 2011).

3.8.2. Factor analysis

This test is generally used as a data reduction technique and according to Peri (2012) it is used for three main reasons:

- To reduce the number of variables, from large to small
- To establish underlying dimensions between measured variables
- To provide construct (conceptual model's variables) validity evidence

Construct validity is the "extent to which the questions in the questionnaire measure the presence of those constructs the researcher intended to measure" (Saunders, Lewis, & Thornhill, 2012, p. 668).

Factor analysis tests if a set of items represent one dimension. This means that all of them should be "correlated to each other and the pattern of correlation should be consistent" (Acock, 2010, p. 342). It represents an explanatory analysis to observe if three are groups of items that go together

It studies the inter-correlations between items and by doing so, it reduces them into small groups or factors, which means they are more or less similar in terms of content or meaning (items are homogenous or unidimensional) (Hooper, 2013).

Specifically for this research a Principal Component Analysis has been chosen because its strength is that it is capable of reducing data and identify" components that are composites of the items" (Acock, 2010, p. 343).

Principal component analysis's use is reasonable for this study because all of the sets of items are believed to measure one concept and it helps determine if "the first principal component explained a substantial part of the total variance for the entire set of items" (Acock, 2010, p. 345).

In order to determine if the items are correlated to each other according to Acock (2010) a factor loading of 0.4 or above is necessary in this test.

3.8.3. Kaiser-Meyer-Olkin test

It is a measure of sampling adequacy which means that the sample size chosen is large enough to provide the precision required of the survey by minimizing the effects of chance (Engineering Statistics Handbook, 2013).

According to the Engineering Statistics Handbook (2013) the adequacy of a sample depends on:

- Representativeness of the sample
- Size of the sample
- Variability in the population

The following ranges are given to values of a KMO test: 0.00 to 0.49 unacceptable, 0.50 to 0.59 miserable, 0.60 to 0.69 mediocre, 0.70 to 0.79 moderate, 0.80 to 0.89 meritorious and 0.90 to 1.00 marvelous (Stata, 2015).

The following table is a summary of the reliability analysis conducted for this research. The complete analysis is presented in the Appendix 2 of this research.

Table 3-2 Summary of reliability analysis of the research variables

Questions related to	Cronbach's alpha	Factor loading	KMO	Factor
Autonomy	0.8112	Above 0.4	0.7518	AUT
Risk taking and failure tolerance	0.8618	Above 0.4	0.7979	RISK
Compensation and incentives	0.8945	Above 0.4	0.9115	COMP
Team work	0.8725	Above 0.4	0.8274	TEAM
Supportive organizational structure	0.8224	Above 0.4	0.6586	SUPP

Managerial Support	0.8170	Above 0.4	0.7085	MAN
Resource availability	---	---	---	---
Service innovation: rating questions	0.8431	Above 0.4	0.8334	SERV1
Service innovation: quantity questions	0.9666	Above 0.4	0.8029	SERV2

Source: From the researcher's data

For the questions that represent the variables autonomy, risk taking and failure tolerance, compensations, team work, managerial support and a supportive organizational structure, the Cronbach's alpha analysis show an alpha in the range between 0.7-0.9 which shows that the questions for each variable have internal consistency and are measuring the same, meaning they are correlated with each other and the questions are not redundant.

For the case of factor analysis, all of the question's factor loading are higher than 0.4 which means that for each variable, the questions presented are correlated with each other (homogenous or unidimensional) however, all of the questions belong to only one scale.

The post estimation test's (KMO) results are all higher than 0.7 which represents that the sample adequacy is moderate to meritorious.

In the case of the variable resources since only one question was designed to measure this variable, the validity and reliability analysis could not be conducted, as it's not usual to measure a variable through one statement.

For the last variable which is service innovation two things were done: for the case of questions 27-32 since they are measured in a Likert scale, they were grouped together. Cronbach's alpha test was conducted where the result was in the range of 0.7-0.9. This demonstrates that the questions are correlated, are measuring the same thing and are not redundant.

The factor loading result showed that each item is correlated with each other and as the results show, they are represented in one scale; the KMO post estimation test that is above 0.8 shows that the sample is adequate for this variable and the results are moderate.

The second thing that was done in the case of the service innovation variable is that the last four questions that were quantity type of questions were grouped together, Cronbach's alpha test could not be conducted on those variables because this is only done to scale type of questions (as explained in section 3.8.1) however, these variables were standardized because variables that are "measured at different scales do not contribute equally to the analysis" (Gelman, 2009) and once this was done Cronbach's alpha test was conducted, once this was completed, a principal component analysis was done and it showed that all factor loadings were higher than 0.4 which means that the different items are correlated. The post estimation test result shows that the chosen sample is adequate.

All of the above mentioned findings are giving reliability to the questionnaire developed for this study.

4. Findings

In this chapter, a structured view of the data that has been gathered will be described as well as an explanation of the different analysis that have been performed on the data along with the presentation of the main findings.

For all the analysis conducted on the data that has been collected through the online questionnaire, a confidence level of 95% will be accepted and it has been chosen as it is the most common among researchers and it represents the "range of values around an statistic that are believed to contain with a certain probability (in this case 95%) the true value of that statistic" (Field, 2013, p. 882)

4.1 Linear Regression

A regression test is the examination of how a dependent variable is related to one or more independent variables, the main purpose of this test is to develop an estimated regression equation that represents the relationship between the dependent and the independent variable(s) (Sweeney, Williams, & Anderson, 2006).

In order to answer the study's main research question, a linear regression test has been chosen, where the effect of the independent variable (intrapreneurship) will be tested on the dependent variable (service innovation: autonomy, risk taking, compensations, team work, managerial support, supportive organizational structure and resource availability).

This analysis will also help validate the hypotheses and sub-hypotheses that have been developed for this research which are stated in Section 2.13.

In a regression model, it is interesting to be able to generalize the main findings to the whole population that is being studied, in order to do this, there are some elemental assumptions that need to be met so that the results can be generalized to the whole population (Field, 2013):

- Additivity and linearity: the model described has to be linear (tested with a graph added-variable plot) (Field, 2013).
- Independent errors: absence of autocorrelation, this statement can be tested with the Durbin-Watson test which "tests whether adjacent residuals are correlated" (Field, 2013, p. 311).

  For this test, the following considerations recommended by Field (2013, p. 311) will be taken into account:

  - If the result is 2 it means the residuals are not correlated.

  - If the result is higher than 2 it means there is a negative correlation.

- A result less than 2 shows a positive correlation.

- Homoscedasticity: the residuals must have equal variances at its respective predictor (tested with a graph, residuals versus the fitted values) (Field, 2013). This can be tested if in the residuals versus fitted plot, the collection of points is roughly the same width (Abrams, 2007).

- No perfect multicollinearity: there must be no correlation between predictors, which will be tested using the Variance Inflation Factor Test which is a collinearity analysis assessment, this "indicates if a predictor has a strong linear relationship with the other predictor(s)" (Field, 2013, p. 325) as a general rule of thumb for this research, the following guidelines will be followed when analyzing the results of the VIF test which are recommended by Field (2013, p. 325):

  - If the VIF is larger than 10, then multicollinearity might exist.

  - If the average VIF is significantly greater than 1, the regression could be biased.

The regression's result will be reported showing the following:

- R^2: which shows how well the model fits the data or "how close the data are to the fitted regression line and it explains the percentage of variability of the response data around its mean" (Acock, 2010, p. 252).

- Adjusted R^2: which balances the bias of getting a high R^2 result by removing the effects of chance (Acock, 2010). As a criterion, for this research, the following R^2 values will be used to asses if there is a weak or strong R^2 (Sweeney, Williams, & Anderson, 2006):

  - Below 0.1 it is weak.

  - Between 0.1 and 0.2 it is moderate.

  - Above 0.3 it is strong.

- Beta weights (β): it is the average quantity that the dependent variable increments when the independent variable increases one standard deviation and other independent variables remain constant (Abrams, 2007). The values of β are interpreted in that "if β is less than 0.20 there is a week effect, a β between 0.2 and 0.5 shows there is a moderate effect and a β higher than 0.5 means there is a strong effect" (Acock, 2010, p. 254).

- Alpha (α): it is the level of significance, for this research the value of $\alpha=0.005$

4.2 Testing for the normality of the dependent variable

In order to apply the appropriate tests to the data, in this case a linear regression, the distribution of the variable of service innovation (dependent variable) will be examined, to analyze if it is normally distributed.

The Skewness and Kurtosis normality test has been chosen is the Jarque-Bera test:

Skewness: measures the degree and direction of asymmetry. A symmetric distribution like normal distribution has a skewness of zero, if it is greater than zero the distribution is positively skewed and if it is less than zero it is negatively skewed (UCLA: Statistical Consulting Group, 2007).

Kurtosis: measures of the thickness of the tails of a distribution. A normal distribution has a kurtosis of three, thick tailed distributions will have kurtosis larger than three (flat in the middle) and light tailed distributions will have kurtosis below than 3 (peaked in the middle) (UCLA: Statistical Consulting Group, 2007).

Service Innovation: Rating questions

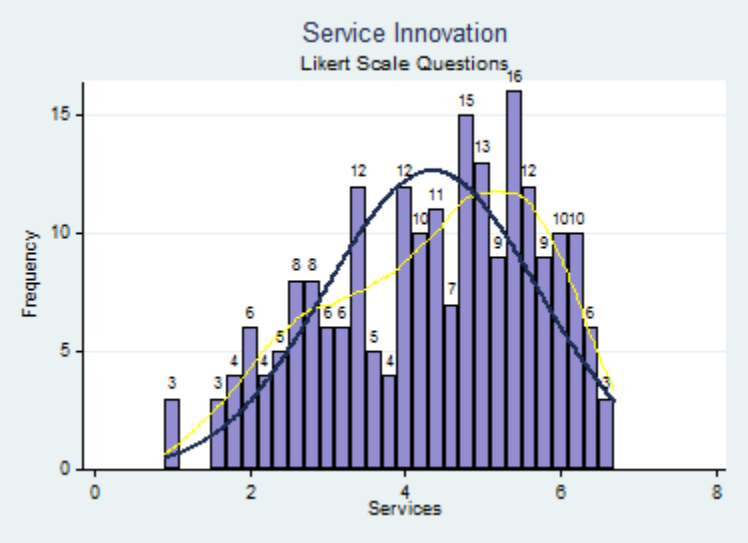

Figure 4-1 Histogram service innovation rating questions Based on the researcher's data

The bars represent the distribution of the data, the bell shaped blue line represents what the data will look like if it was normally distributed and the yellow curve (k-density curve) is an "estimation of how the population data would look given the sample data" (Acock, 2010, p. 257).

From the Figure 4.2-1 it can be seen that it is not perfectly symmetrical, however most of the data is concentrated under the bell-shaped curve, and there are quite some data on the right side of the distribution.

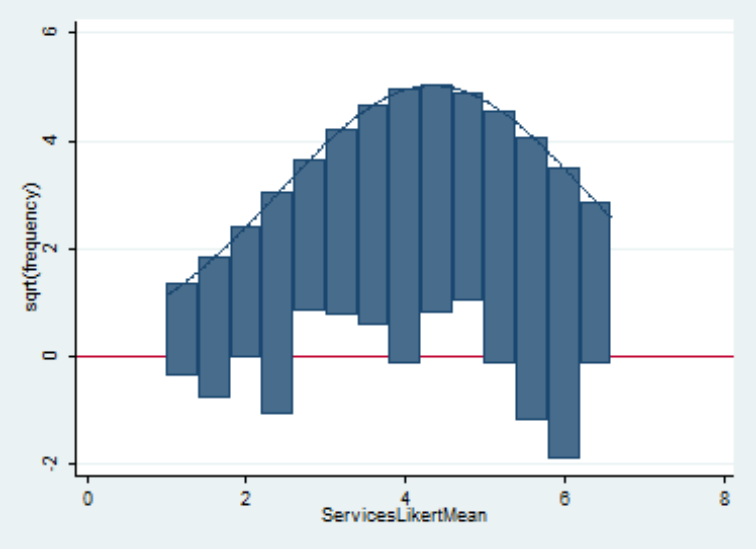

Figure 4-2 Hanging root gram service innovation rating questions Based on the researcher's data

The hanging root gram has a curve that represents how the data "would be distributed if it were normal, when there a bar descends below the horizontal line there are too many observations at that value compared with a normal distribution" (Acock, 2010, p. 258). At the value of six, the bar drops far-off below the horizontal line, there are a few values at the middle of the distribution that don't drop below the horizontal line.

In order to actually test for normality instead of only relying on graphs, the Skewness and Kurtosis normality test has been conducted.

The results for the service innovation (scale questions) are:

Table 4-1Skewness and Kurtosis Results. Service innovation scale questions

Skewness	Kurtosis
-.4064902	1.234703

Source: From the researcher's data

After running the Skewness and Kurtosis normality test to analyze the significance of the coefficients of skewness and kurtosis, since the probability associated with the test is more than 0.01 (p value of 0.04), there is enough evidence to view the data as normally distributed. The complete analysis can be found in the Appendix 3.

This is also confirmed with the fact that "the values for asymmetry and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution" (Sanchez, 2015, p. 4).

Service Innovation: Quantity questions

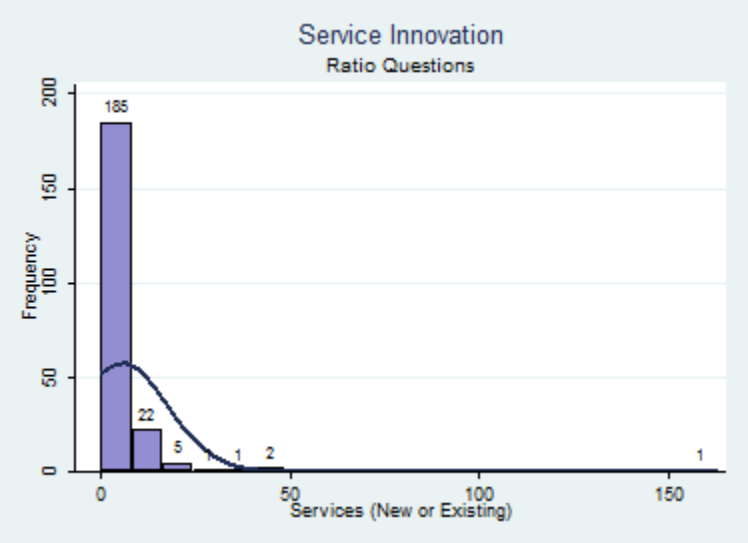

Figure 4-3 Histogram service innovation quantity questions Based on the researcher's data

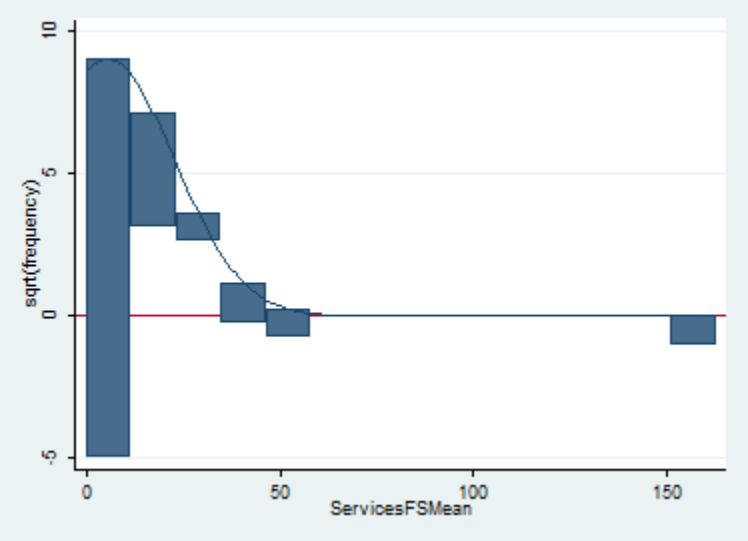

Figure 4-4 Hanging root gram service innovation quantity questions Based on the researcher's data

Based on the figures 4.2-3 and 4.2-4 it is quite clear to see that the data is not normally distributed or symmetrical, it is flat in the center and it is right skewed.

The Skewness and Kurtosis normality test has been run to corroborate the results from the histogram and hanging root gram which are showed in the table below:

Table 4-2 Skewness and Kurtosis Results. Service innovation quantity questions

Skewness	Kurtosis
10.04458	124.3198

Source: From the researcher's data

Once the Skewness and Kurtosis normality test to analyze the significance of the coefficients of skewness and kurtosis was done, the results show that the probability associated with the test is less than 0.01 (p value of 0.00), there is enough evidence to view the data as not normally distributed. The complete analysis can be found in the Appendix 3.

Given the questions that measure service innovation (quantity questions) are not normally distributed they will be disregarded when the regression is run due to the fact that it will affect the quality of the regression, because it will not be a meaningful regression and the results will be hard to interpret (Stata, 2015).

4.3 Analysis of correlation of the independent variables

A correlation analysis is a method "for investigating the statistical relationship between two or more variables" (Barrow, 2013, p. 250).

Given that all the questions that represent each variable that influences intrapreneurship are measured using a seven point Likert scale, this is the appropriate test to use.

As a rule of thumb, the following values to measure the strength of a relationship between the independent variables will be used for this research (Saunders, Lewis, & Thornhill, 2012, p. 459)

- 0 to (-) 0.3 Weak relationship

- (-) 0.3 to (-) 0.5 Moderate relationship

- (-) 0.5 to (-) 0.7 Strong relationship

- (-) 0.7 to (-) 1 Perfect relationship

For all the independent variables of autonomy, risk taking and failure tolerance, compensations and incentives, team work, supportive organizational structure, managerial support and resource availability the results are between 0.2 and 0.3 which indicate that the strength of relationship between the independent variables is weak.

The complete analysis can be found in Appendix 4.

4.4 Testing for the effect of an intrapreneurial culture over innovation

As it is mentioned in Section 4.1 a linear regression will be conducted in order to answer the research question, to validate the main hypothesis a simple linear regression will be carried on and to validate the sub hypotheses a multiple liner regression will be performed.

4.4.1 Simple linear regression

In a simple linear regression there is only one explanatory or independent variable, this regression expresses the relationship between the independent variable and dependent variable as a straight line, the relationship can be summarized in the following equation: $y = b_0 + b_1 X_i$ where y is the predicted value of the dependent variable, b_0 is the constant when all the x values are zero and b_1 is the regression coefficient of the independent variable (Field, 2013, p. 296).

In the following figure, a summary of the simple linear regression is presented, where the p values and β for each variable are showed, alongside with the R^2 and adjusted R^2 of the model.

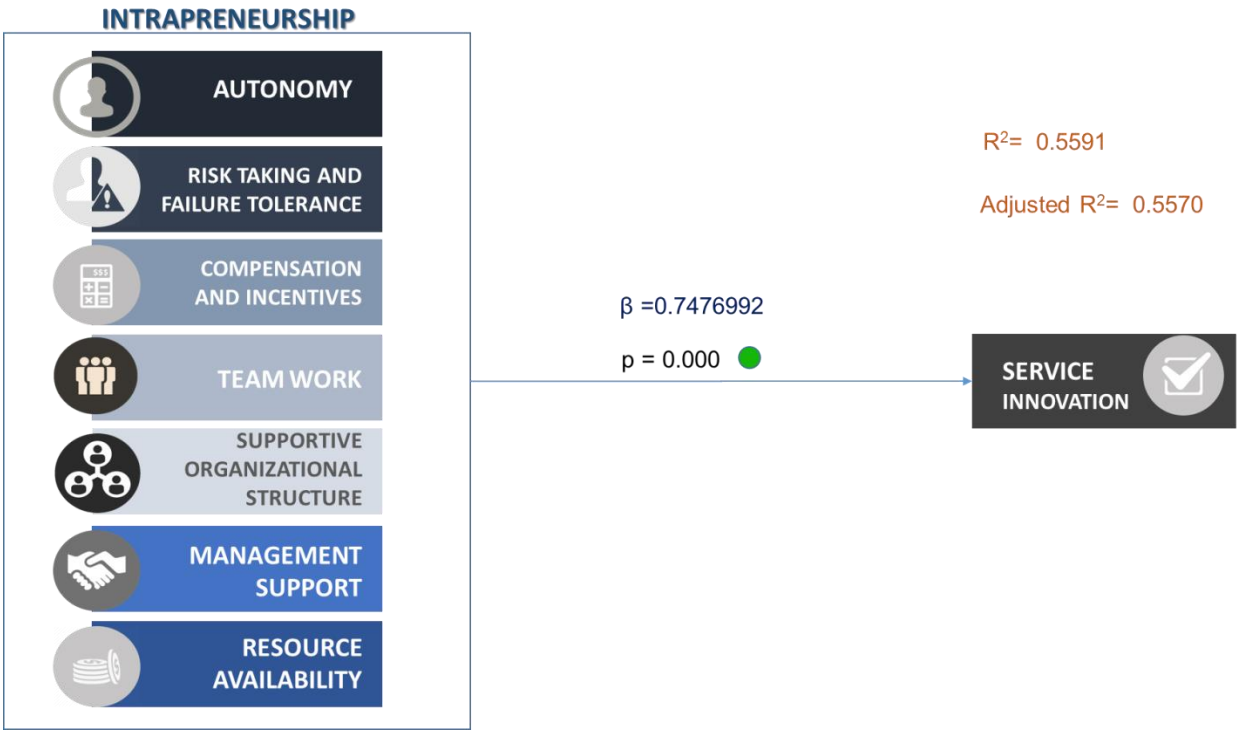

Figure 4-5 Summary of linear regression Based on the researcher's data

H_1: An intrapreneurial culture has a positive impact on innovation.

SUPPORTED: As predicted, there is a positive impact of intrapreneurship over service innovation.

The results in figure 4.4.1-1 show that there is enough statistical evidence to claim that an intrapreneurial culture with a p value of 0.000 which is lower than the significance level α of 0.05, that has been used for this research, has a significant relationship and can predict service innovation.

The value of β=0.7476 confirms that there is a statistically significant strong effect of an intrapreneurial culture on innovation.

R^2 of 0.5591 and adjusted R^2 of 0.557, which means that an intrapreneurial culture explains 55.91% of the variance in service innovation in this model, it represents a strong or high percentage of how well the model fits the data.

The regression model is statistically significant F (1, 215) = 272.59, p = 0.0000 this shows that the model can statistically significantly predict service innovation.

The Durbin Watson test was conducted to check if the residuals after the regression was run were correlated, the results of the test is 2.04 which means the residuals are not correlated.

The VIF test's result is 1 which indicates there is no multicollinearity, and the VIF whose result is 1 as well shows that the regression is not biased.

A simple linear regression was performed to predict innovation based on an intrapreneurial culture. As can be seen, an intrapreneurial culture was a significant predictor of service innovation.

A significant regression equation was found, the regression equation is: $\widehat{\text{service innovation}} = 1.55 + 0.68(\text{intrapreneurship})$

An intrapreneurial culture in a significant predictor of service innovation.

All the regression's assumptions are met.

The complete analysis can be found in Appendix 5

4.4.2 Multiple linear regression

In a simple multiple regression two or more explanatory or independent variables are used to predict the dependent variable, the relationship can be summarized in the following equation: $y = b_0 + b_1X_i + b_2X_2 + b_nX_n$ where y is the predicted value of the dependent variable, b_o is the constant when all the x values are zero and b_1 is the regression coefficient of the independent variables (Field, 2013, p. 296).

In the following figure, a summary of the multiple linear regression is presented, where the p values and β for each variable are showed, alongside with the R^2 and adjusted R^2 of the model.

Figure 4-6 Summary of multiple regression Based on the researcher's data

H_{1A}: Employee autonomy has a positive impact on innovation.

NOT SUPPORTED: A positive association was predicted between employee autonomy and service innovation however it is not supported, the relationship between the two variables is not significant.

The results showed in Figure 4.4.2-1 show that there is not enough significant evidence to conclude that employee autonomy has a significant relationship over service innovation

The p value of employee autonomy is 0.1562 which is higher than the significance level α of 0.05, indicates there is no significant relationship between the two variables.

The value of β=-0.0918 confirms that there is a statistically weak effect of employee autonomy on innovation.

H_{1R}: Employee encouragement to take risks and tolerance to failure has a positive impact on service innovation.

NOT SUPPORTED: A positive association was predicted between employee encouragement to take risks and tolerance to failure and service innovation however it is not supported, the relationship between the two variables is not significant.

The p value of risk taking and failure tolerance is 0.25335 which is higher than the significance level α of 0.05 shows there is not enough significant evidence to prove that risk taking can predict service innovation in a consulting company.

The value of β=0.1155 confirms that there is a statistically weak effect of employee risk taking and failure tolerance on innovation.

H_{1C}: Compensations and incentives given to employees has a positive impact on innovation.

NOT SUPPORTED: A positive association was predicted between compensations/incentives and service innovation however it is not supported, the relationship between the two variables is not significant.

The p value of compensations and incentives is 0.2865 which is higher than the significance level α of 0.05 shows there is not enough significant evidence to prove that compensations and incentives can predict service innovation.

The value of β=0.0912 helps corroborate that there is a statistically weak effect of compensations and incentives on innovation.

H_{1T}: Team work among employees has a positive impact on innovation.

SUPPORTED: As predicted, there is a positive impact of team work among employees on service innovation

There is enough statistical evidence to claim that team work with a p value of 0.001 which is lower than the significance level α of 0.05 has a significant relationship and can predict service innovation.

The value of β=0.2389 confirms that there is a statistically significant moderate effect of team work on innovation.

H_{1S}: A supportive organizational structure has a positive impact on innovation.

SUPPORTED: As predicted, there is a positive impact of a supportive organizational structure on service innovation.

There is enough statistical evidence to claim that team work with a p value of 0.010 which is lower than the significance level α of 0.05 has a significant relationship and can predict service innovation.

The value of β=0.1741 confirms that there is a statistically significant weak to moderate effect of a supportive organizational structure on innovation.

H_{1M}: Management support has a positive impact on innovation.

SUPPORTED: As predicted, there is a positive impact of management support on service innovation.

H_{1R}: Resource availability has a positive impact on innovation.

There is enough statistical evidence to claim that management support with a p value of 0.001 which is lower than the significance level α of 0.05 has a significant relationship and can predict service innovation.

The value of β=0.2935 confirms that there is a statistically significant moderate effect of management support on innovation.

SUPPORTED: As predicted, there is a positive impact of resource availability on service innovation.

There is enough statistical evidence to claim that resource availability with a p value of 0.0012 which is lower than the significance level α of 0.05 has a significant relationship and can predict service innovation.

The value of β=0.1845 confirms that there is a statistically significant moderate effect of resource availability on innovation.

R^2 of 0.6133 and adjusted R^2 of 0.6060, which means that the seven predictors explain 61.33% of the variance in service innovation in this model, it represents a strong or high percentage of how well the model fits the data.

The regression model is statistically significant F (4, 212) = 84.06, p = 0.0000 this shows that the model can statistically significantly predict service innovation.

The Durbin Watson test was conducted to check if the residuals after the regression was run were correlated, the results of the test is 1.95 which means the residuals are not correlated.

The VIF test's result is 1 which indicates there is no multicollinearity, and the VIF whose result is 1 as well shows that the regression is not biased.

A multiple linear regression was calculated to predict service innovation based on the seven predictors (autonomy, risk taking and failure tolerance, compensations and incentives, team work, supportive organizational structure, management support and resource availability). As can be seen, team work, supportive organizational structure, management support and resource availability were significant predictors of service innovation.

A significant regression equation was found, the regression equation is:

$$\widehat{\text{service innovation}} = 1.06 + 0.22(\text{team work}) + 0.15\ (\text{supportive organizational structure}) + 0.74\ (\text{managerial support}) + 0.14(\text{resource availability})$$

Team work, supportive organizational structure, managerial support and resource availability are significant predictors of service innovation.

All the regression's assumptions are met.

The complete analysis can be found in Appendix 6.

Based on all of the above statistical findings, the main variables that are significant to predict how an intrapreneurial culture affects innovation are team work, a supportive organizational structure, manager support and resource availability. This significant relationship indicates that the more the above mentioned variables are encouraged and promoted in an organization, the more new/improved service offerings will be developed and marketed by that firm.

5. Discussion and conclusions

In the last chapter of this research, the main findings and the conclusions are presented which are linked with the research questions; the implications for the theory and practice are also exposed. This chapter concludes with the discussion of the research's limitations and provides recommendations for future research.

5.1. Summary of main findings

The major objective of this research was to analyze to what extent an intrapreneurial culture can drive new/improved service innovation in a consulting company.

The major research question was to determine how an intrapreneurial culture affects innovation with regards to new/improved services offered by small and medium sized consultancy companies in Quito, Ecuador.

This question has been answered with the help of the hypotheses that have been developed for this research.

The following table presents a summary of the main hypothesis and the seven sub-hypotheses that were developed for this study.

Table 5-1 Summary of hypotheses test results

Hypothesis	**Result**
H_1: An intrapreneurial culture has a positive impact on innovation	Supported
H_{1A}: Employee autonomy has a positive impact on innovation	Not supported
H_{1R}: Employee encouragement to take risks and tolerance to failure has a positive impact on innovation	Supported
H_{1C}: Compensations and incentives given to employees has a positive impact on innovation	Not supported
H_{1T}: Team work among employees has a positive impact on innovation	Supported
H_{1S}: A supportive organizational structure has a positive impact on innovation	Supported
H_{1M}: Management support has a positive impact on innovation	Supported
H_{1R}: Resource availability has a positive impact on innovation	Supported

Source: From the researcher's data

As shown in table 5.1 the main hypothesis which predicted a positive impact of an intrapreneurial culture on innovation was supported, which means than when small and medium sized consulting companies in

Quito support employees' new ideas and projects, allocate resources and allow them time to develop these projects, service innovation is improved in the company. This first finding is confirmed by the research conducted by Galvez & Garcia (2011), Garzon (2005) and Wood (2004) in that an intrapreneurial culture fosters business innovation. This result can help state that overall, small and medium sized consulting companies in Quito are fostering an intrapreneurial culture in order to innovate and create or modify their service offerings, which will help them innovate in the advices they offer tho their clients and add value to their service offerings.

This finding can help answer the research's major question, an intrapreneurial culture positively affects and influences innovation, the more an intrapreneurship-conductive culture is nurtured through practices and policies and is seen and shared by all the people in the organization, the more new ideas will be shared and turned into reality, which will mean a competitive advantage for the company.

The first minor research question was to determine the main characteristics that can trigger an intrapreneurial culture in an organization.

For this study's sub-hypotheses four of the seven sub-hypotheses were supported. Perceptions of team work, a supportive organizational structure, management support and resource availability were all positively related to service innovation in the sample firms.

The questionnaire's items that comprised autonomy were focused on the extent to which respondents felt they were allowed to make autonomous decisions or to develop new projects, in the case of risk taking and failure tolerance the questions were concentrated on whether or not the people surveyed felt they were encouraged to take on smart risks and in the case of rewards and incentives, the questions were aimed to determine if the respondents felt they were being rewarded or recognized if they generated new ideas or performed a remarkable job. The results found suggest that there is no significant relationship between the above mentioned variables and service innovation in the sample consulting organizations.

The results suggest that employee autonomy, risk taking and failure tolerance and compensations and incentives do not spur service innovation in consulting companies in Quito. These findings are consistent with the research conducted in Colombia by Galvez & Garcia (2011). This could happen because Ecuadorian small and medium sized consulting companies do not really employ these practices which are associated with intrapreneurship.

In the case of employee autonomy and failure tolerance, the fact that these characteristics of an intrapreneurial culture do not spur service innovation can be related to the fact that most of the companies in Quito are still on the edge of switching of being traditional to miniature large (Bouchard & Basso, 2011) in the sense that they are not fully decentralized and the owner or manager still does not allow full autonomy to the employees and they are also still not taking on smart risks on their own, without the green light from their manager (Galvez & Garcia, 2011).

In the specific case of incentives and rewards, the results are interesting, because managers of small and medium sized companies in Quito might not have practically the same flexibility to offer rewards or incentives to their employees in comparison to bigger consulting companies which could easily do it (Galvez & Garcia, 2011).

As expected, a positive impact of team work on service innovation was discovered, which indicates that as the work between people from different areas and hierarchical levels is encouraged, more networks and links are created between people who work for the consulting firm, this also creates commitment with both the organization and the team. This collectivistic culture allows the employees to recognize new opportunities, develop new ideas which will help encourage the development of new business endeavors. This overall helps the consulting company innovate, and this finding is consistent with a study developed by Galvez & Garcia (2011) in SMEs in Colombia.

With regards to the prediction of a supportive organizational structure and service innovation, a positive link was discovered, which signposts that consulting companies in Quito are encouraging their employees to take on new projects which are submitted by formal channels and are evaluated and then are given the green light to be developed even though they were not included in the firm's strategic plan or budget. This aspect is more related to the organization being flexible and the fact that when consulting companies support new initiatives, the innovation level of the company is improved. This finding is consistent with a research done by Galvez & Garcia (2011) in which even though a small and medium sized company is flexible, it does not mean it advocates risk taking and complete freedom for its employees, because the firm is still using formal channels to approve or veto new initiatives, which could mean that in the sample companies there still exists some sort of centralization or autocracy.

The hypothesis that predicted a positive relationship between managerial support and service innovation in consulting companies was supported, which shows that managers are encouraging the development of new ideas and engage employees in the idea creation process, and allowing the employees time available for the stimulation of intrapreneurial activities.

The last hypothesis of a positive relationship between resource availability and service innovation was supported. This statement was focused on the extent to which respondents feel the organization financially supports innovative projects.

All of the above mentioned findings can help demonstrate that an intrapreneurial culture can be considered as a powerful tool which can be used by SMEs who need or desire to adapt better to changes in the market and customers preferences and to improve their overall level of service innovation.

This research shows that the most important factors that drive intrapreneurship in a consulting company are: team work, a supportive organizational structure, management support and resource availability

which have a positive impact on service innovation. This clearly shows that the more companies foster a culture where these aspects are incorporated, the more they can innovate.

The results show SME managers the advantages of establishing or strengthening an intrapreneurial culture in their organization.

Regarding the second minor research question which is: what is the intensity of an intrapreneurial culture in the organizational environment of consultancy companies in Quito?

Using the findings that helped answer the major research question, this result can help state that overall, small and medium sized consulting companies in Quito are fostering an intrapreneurial culture in order to innovate and create or modify their service offerings, however consulting companies still need to make a change towards being completely descentralized in terms of employee autonomy and risk taking.

All of this study's findings can be generalized to the population of small and medium sized consulting companies in Quito because all of the regression's assumptions as stated in section 4.4.2 are met.

5.2. Implications for theory

The results show the importance of an intrapreneurial culture in order for a company to be more innovative in their service offerings, it provides information with insights into what factors influence an intrapreneurial culture and the outcome of service innovation.

Specifically, this research identified a positive relationship between four factors that are a part of an intrapreneurial culture which influence service innovation in consulting companies.

The most important aspect is that a combination of organizational characteristics are necessary as well as individual characteristics, and the creation of the organizational context to support innovation (Garzon, 2005).

5.3. Implications for practice

The contribution of this research to the context of SMEs is relevant and has important implications, especially for Ecuador where no research has been done on intrapreneurship and its effect on innovation.

As it has been mentioned before, the creation or strengthening of an intrapreneurial culture in an organization is key in order to be innovative which means the firm will have a competitive advantage over the competitors, in any organization where there is an environment which allows employees to discover new ways to meet customers' needs, solve problems and generate new ideas, will allow it to successfully differentiate form its competitors, and the main driver in this scenario is the firm's internal talent (Masid, 2014).

The key drivers for an intrapreneurial culture is a flexible organization which allows the generation of new ideas even though they were not planned beforehand and stimulate a collectivistic culture alongside with

allowing the employees to work with people from different areas of the organization as well as management support which allows employees with enough time to spend on new projects and availability of resources to make their ideas become a reality.

5.4. Limitations and future research

Even though the results are encouraging, the first limitation for this study is that it was only conducted in one city, a future study could include small and medium sized consulting companies in other big cities in Ecuador such as Guayaquil, Cuenca and Loja.

For future research, it could be useful to identify more factors that could influence or drive an intrapreneurial culture and maybe add control variables such as how long the company has been operating, if it is a family business or not, the gender of the person answering the survey and their level of education.

The online survey was sent out and filled in by the registered email contact provided by the Chamber of Commerce, for future research it would be useful to try to interview people from different levels of the company so that more perspectives and opinions can be taken into account, which will help the results be a more detailed representation of the population under study.

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Glossary of Terms and Acronyms

Abbreviation	English
SMEs	Small and medium sized enterprises
R&D	Research and development
KMO	Kaiser-Meyer-Olkin test
VIF	Variance Inflation Factor

Appendix 1: Questionnaire in English and Spanish

English version:

Survey: Intrapreneurship and Innovation

Dear Mr. / Ms.

My name is Olga Paez am currently doing my Masters in Business Administration (MBA) in Maastricht School of Management (MSM) in the Netherlands. As a prerequisite for completing the MBA program, I am conducting a quantitative research on intrapreneurship and its influence on innovation in Quito, Ecuador. This questionnaire aims to achieve this objective.

Your sincere answer to the following questions would be much appreciated. The information you provide will be treated confidentially and used only for academic purposes. The research results will be used to provide beneficial recommendations for the specific branch of consulting firms in Quito, Ecuador.

The questionnaire will not take more than 10 minutes of your time to complete.

Thanks in advance for your time and valuable participation.

INSTRUCTIONS

- Base your answers on your own thoughts and experiences
- Please read and answer each question before submitting your results

For each statement, please fill in the circle for the number that indicates the extent to which you agree the statement is true.

Autonomy:							
1. In your organization, it is allowed for an employee to start a project without having to consult with their direct supervisor	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
2. In your organization, employees can make autonomous decisions while developing projects	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
3. Your organization provides you the freedom to use	① Strongly	② Disagree	③ Disagree	④ Neutral	⑤ Agree	⑥ Agree	⑦ Strongly

your own judgment.	Disagree		Somewhat		Somewhat		Agree
4. In your organization, you have autonomy on your job and are left on your own to do your own work.	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
5. In your organization, it is basically your own responsibility to decide how your job gets done	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
Risk taking and failure tolerance:							
6. In your organization, you are encouraged to take calculated risks	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
7. In your organization, the term “risk taker” is considered a positive attribute for people in your work area	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
8. In your organization, you are provided with the chance to be creative and to try your own methods of doing the job	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
9. In your organization, people are often encouraged to take calculated risks when developing new ideas	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
Compensation and incentives:							
10. In your organization, economic rewards are offered for employees who generate new ideas or projects	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree

11. In your organization, developing your own ideas is encouraged for the improvement of the organization	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
12. In your organization, your manager would tell his or her boss if your work was outstanding	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
13. In your organization, promotions usually follow the development of new and innovative ideas	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
14. In your organization, your supervisor will give you special recognition if your work performance is especially good	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
15. In your organization, money is often available to get new project ideas off the ground	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
Team work:							
16. In your organization, you are encouraged to talk to people in other departments of the organization about ideas for new projects	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
17. In your organization, spontaneous team creation is a common practice	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
18. In your organization, work and collaboration	① Strongly	② Disagree	③ Disagree	④ Neutral	⑤ Agree	⑥ Agree	⑦ Strongly

between people from different areas, departments and/or functional roles as well as hierarchical levels is encouraged	Disagree		Somewhat		Somewhat		Agree
19. In your organization, there is a considerable desire among people to generate new ideas even if this means crossing departmental or functional boundaries	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
Supportive organizational structure and Managerial support:							
20. In your organization, many top managers are known for their experience with innovation processes	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
21. In your organization, it is common for managers to back up and fully support their employees' projects	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
22. In your organization, there is a program that promotes initiatives	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
23. In your organization, it is common to support new projects even though they were not included in the strategic plan	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
24. In your organization, it is common to support new	① Strongly	② Disagree	③ Disagree	④ Neutral	⑤ Agree	⑥ Agree	⑦ Strongly

projects even though they were not included in the budget	Disagree		Somewhat		Somewhat		Agree
25. In your organization, managers allow their employees to use a part of their working time to plan and/or develop their self-initiated projects	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
Resource availability:							
26. In your organization, there are several options for individuals to get financial support for their innovative projects and ideas	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
Service innovation:							
27. In your organization, there is a strong emphasis on R&D, technological leadership and innovation	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
28. In your organization, it is typical to initiate actions which other organizations then respond to	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
29. In your organization, it is typical to adopt a very aggressive, “undo-the-status-quo” posture	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
30. In your organization, it is common to be the first firm to introduce new services to clients	① Strongly Disagree	② Disagree	③ Disagree Somewhat	④ Neutral	⑤ Agree Somewhat	⑥ Agree	⑦ Strongly Agree
31. In your organization, there is a strong	① Strongly	② Disagree	③ Disagree	④ Neutral	⑤ Agree	⑥ Agree	⑦ Strongly

preference for high-risk projects (with chances of very attractive outcomes).	Disagree		Somewhat		Somewhat		Agree

For the final four questions, respond to each item by typing your answer in the textbox:

32. How many new services has your organization developed in the past 5 years?	
33. How many new services has your organization marketed and sold in the past 5 years?	
34. How many existing services has your organization modified and improved in the past 5 years?	
35. How many existing services that your organization has modified and improved have been marketed and sold in the past 5 years?	

Spanish version:

Encuesta: Intraemprendimeinto e Innovación

Estimado Señor (a) (ita),

Mi nombre es Olga Páez actualmente estoy realizando mi Maestría en Administración de Empresas (MBA) en Maastricht School of Management (MSM) en los Países Bajos. Como requisito previo para la finalización del programa MBA, estoy realizando una investigación cuantitativa sobre el intraemprendimiento y su influencia en la innovación en Quito, Ecuador. Este cuestionario tiene como objetivo el cumplimiento de este objetivo.

Su opinión sincera a las siguientes preguntas sería muy apreciada. La información que proporcione será tratada de forma confidencial y se utilizará sólo a efectos académicos. Los resultados de la investigación serán utilizados para proporcionar recomendaciones beneficiosas para la rama específica de las empresas de consultoría en Quito, Ecuador.

El cuestionario no tomará más de 10 minutos de su tiempo para ser completado.

Gracias de antemano por su tiempo y valiosa participación.

Autonomía:							
1. En su organización, se permite que un empleado pueda iniciar un proyecto sin tener que consultar con su supervisor directo	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
2. En su organización, los empleados pueden tomar decisiones autónomas, mientras desarrollan sus proyectos	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
3. Su organización le proporciona la libertad de usar su	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo

	propio juicio						
4.	En su organización, usted tiene autonomía y puede por su cuenta su trabajo	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
5.	En su organización, es básicamente su propia responsabilidad el decidir cómo hacer su trabajo	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
Toma de riesgos								
6.	En su organización, se le anima a tomar riesgos calculados	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
7.	En su organización, el término "tomador de riesgos" se considera un atributo positivo	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
8.	En su organización, se le proporciona la oportunidad de ser creativo y se le permite usar sus propios métodos para hacer su trabajo	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
9.	En su organización, la gente a menudo es animada a tomar riesgos calculados en el	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo

desarrollo de nuevas ideas							
Recompensas e Incentivos							
10. En su organización, las recompensas económicas se ofrecen a los empleados que generan nuevas ideas o proyectos	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
11. En su organización, se anima el desarrollo de sus propias ideas para la mejora de la empresa	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
12. En su organización, su jefe le diría a la persona que reporta si su trabajo fue excepcional	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
13. En su organización, los ascensos generalmente conllevan al desarrollo de ideas nuevas e innovadoras	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
14. En su organización, su supervisor le daría un reconocimiento especial si su rendimiento en el trabajo es especialmente bueno	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo

15. En su organización, el dinero está a menudo disponible hacer que nuevas ideas se conviertan en realidad	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
Trabajo en Equipo							
16. En su organización, se le anima a hablar con personas de otros departamentos de la empresa acerca de ideas para nuevos proyectos	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
17. En su organización, la creación espontánea de nuevos equipos de trabajo es una práctica común	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
18. En su organización, se anima el trabajo y la colaboración entre personas de diferentes áreas, departamentos y / o roles funcionales, así como los niveles jerárquicos	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
19. En su organización, hay un deseo considerable entre las	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo

personas de generar nuevas ideas, incluso si esto significa cruzar los límites departamentales o funcionales							
Apoyo							
20. En su organización, muchos altos directivos son conocidos por su experiencia con procesos de innovación	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
21. En su organización, es común que los jefes respalden y apoyen totalmente los proyectos de sus empleados	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
22. En su organización, existe un programa que promueve iniciativas	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
23. En su organización, es común que se apoyen nuevos proyectos a pesar de que no hayan sido incluidos en el plan estratégico	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo

24. En su organización, es común que se apoyen nuevos proyectos a pesar de que no hayan sido incluidos en el presupuesto	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
25. En su organización, los supervisores permiten a sus empleados que utilicen una parte de su tiempo de trabajo para planificar y / o desarrollar sus proyectos iniciados por iniciativa propia	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
Disponibilidad de Recursos							
26. En su organización, hay varias opciones para que las personas reciban ayuda financiera para desarrollar sus proyectos e ideas innovadoras	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
Innovación en Servicios							
27. En su organización, hay un fuerte énfasis en	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo

investigación y desarrollo, liderazgo tecnológico e innovación							
28. En su organización, es típico iniciar acciones que otras organizaciones a continuación siguen	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
29. En su organización, es típico adoptar una muy agresiva postura para " deshacer-el-status-quo" En su organización, es común ser la primera empresa que introduce nuevos servicios a sus clientes	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
30. En su organización, existe una fuerte preferencia por proyectos de alto riesgo (con posibilidades de resultados muy atractivos)	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo
31. En su organización, existe una fuerte preferencia por proyectos de alto riesgo	① En total desacuerdo	② Desacuerdo	③ Algo en desacuerdo	④ Neutral	⑤ Algo de acuerdo	⑥ De acuerdo	⑦ En total acuerdo

(con posibilidades de resultados muy atractivos)							

Para las últimas cuatro preguntas, responda cada una de ellas escribiendo su respuesta en el cuadro de texto:

32. ¿Cuántos nuevos servicios han sido desarrollados en su organización en los últimos 5 años?	
33. ¿Cuántos nuevos servicios han sido comercializados y vendidos en su organización en los últimos 5 años?	
34. ¿Cuántos servicios existentes ha modificado y mejorado su organización en los últimos 5 años?	
35. ¿Cuántos servicios existentes que su organización ha modificado y mejorado han sido comercializados y vendidos en los últimos 5 años?	

Appendix 2: Reliability analysis of the research variables

CRONBACH'S ALPHA autonomy

```
alpha Autonomy1 Autonomy2 Autonomy3 Autonomy4 Autonomy5, item

Test scale = mean(unstandardized items)

                                                              average
                              item-test     item-rest       interitem
Item          |  Obs  Sign   correlation   correlation     covariance      alpha
--------------+-------------------------------------------------------------------
Autonomy1     |  217    +       0.6454        0.4402        1.613077      0.8218
Autonomy2     |  217    +       0.8077        0.6605         1.26241      0.7549
Autonomy3     |  217    +       0.8204        0.7057        1.313503      0.7435
Autonomy4     |  217    +       0.8091        0.6827        1.313794      0.7491
Autonomy5     |  217    +       0.6960        0.5259        1.537634      0.7954
--------------+-------------------------------------------------------------------
Test scale    |                                             1.408084      0.8112
-------------------------------------------------------------------------------
```

FACTOR ANALYSIS autonomy

```
factor Autonomy1 Autonomy2 Autonomy3 Autonomy4 Autonomy5, pcf

obs=217)
Factor analysis/correlation                       Number of obs    =      217
    Method: principal-component factors           Retained factors =        1
    Rotation: (unrotated)                         Number of params =        5
    --------------------------------------------------------------------------
         Factor  |   Eigenvalue   Difference        Proportion   Cumulative
    -------------+------------------------------------------------------------
        Factor1  |      2.89150      1.95651            0.5783       0.5783
        Factor2  |      0.93499      0.40317            0.1870       0.7653
```

```
    Factor3  |      0.53182      0.14974            0.1064       0.8717
    Factor4  |      0.38208      0.12247            0.0764       0.9481
    Factor5  |      0.25961            .            0.0519       1.0000
-------------------------------------------------------------------------
LR test: independent vs. saturated:  chi2(10) =  417.76 Prob>chi2 = 0.0000
```

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
Autonomy1	0.5951	0.6459
Autonomy2	0.7960	0.3663
Autonomy3	0.8434	0.2887
Autonomy4	0.8332	0.3058
Autonomy5	0.7058	0.5018

KMO autonomy

```
. estat kmo
```

Kaiser-Meyer-Olkin measure of sampling adequacy

Variable	kmo
Autonomy1	0.7733
Autonomy2	0.7616
Autonomy3	0.7611
Autonomy4	0.7207
Autonomy5	0.7591
Overall	0.7518

CRONBACH'S ALPHA risk

```
. alpha Risk1 Risk2 Risk3 Risk4, item

Test scale = mean(unstandardized items)

                                                        average
                          item-test     item-rest       interitem
Item         |  Obs  Sign   correlation   correlation     covariance      alpha
-------------+------------------------------------------------------------------
Risk1        |  217    +       0.8443        0.7195        1.768988      0.8195
Risk2        |  217    +       0.8499        0.7198         1.71147      0.8191
Risk3        |  217    +       0.8361        0.6993        1.767957      0.8276
Risk4        |  217    +       0.8331        0.6960        1.783247      0.8289
-------------+------------------------------------------------------------------
Test scale   |                                             1.757915      0.8618
-------------------------------------------------------------------------------
```

FACTOR ANALYSIS risk

```
. factor Risk1 Risk2 Risk3 Risk4, pcf

(obs=217)

Factor analysis/correlation                       Number of obs    =      217
    Method: principal-component factors           Retained factors =        1
    Rotation: (unrotated)                         Number of params =        4

    --------------------------------------------------------------------------
         Factor  |   Eigenvalue   Difference        Proportion   Cumulative
    -------------+------------------------------------------------------------
        Factor1  |      2.82853      2.30547            0.7071       0.7071
        Factor2  |      0.52306      0.17532            0.1308       0.8379
        Factor3  |      0.34774      0.04707            0.0869       0.9248
        Factor4  |      0.30067            .            0.0752       1.0000
```

```
    ------------------------------------------------------------------------------

    LR test: independent vs. saturated:  chi2(6)  =  400.95 Prob>chi2 = 0.0000

Factor loadings (pattern matrix) and unique variances

    ----------------------------------------

        Variable |  Factor1 |   Uniqueness

    -------------+----------+--------------

           Risk1 |   0.8484 |      0.2801

           Risk2 |   0.8498 |      0.2778

           Risk3 |   0.8339 |      0.3046

           Risk4 |   0.8313 |      0.3089

    ----------------------------------------
```

KMO risk

```
. estat kmo

Kaiser-Meyer-Olkin measure of sampling adequacy

    ----------------------

        Variable |     kmo

    -------------+---------

           Risk1 |  0.7858

           Risk2 |  0.7854

           Risk3 |  0.8109

           Risk4 |  0.8117

    -------------+---------

         Overall |  0.7979

    ----------------------
```

CRONBACH'S ALPHA compensations

```
. alpha Compensation1 Compensation2 Compensation3 Compensation4 Compensation5 Compensation6, item

Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
Compensati~1	217	+	0.8400	0.7517	1.947009	0.8706
Compensati~2	217	+	0.8033	0.7184	2.122538	0.8763
Compensati~3	217	+	0.8118	0.7254	2.080767	0.8749
Compensati~4	217	+	0.8472	0.7670	1.965713	0.8679
Compensati~5	217	+	0.8629	0.7928	1.963187	0.8640
Compensati~6	217	+	0.6956	0.5594	2.234867	0.9003
Test scale					2.052347	0.8945

FACTOR ANALYSIS compensations

```
. factor Compensation1 Compensation2 Compensation3 Compensation4 Compensation5 Compensation6, pcf
(obs=217)
Factor analysis/correlation                       Number of obs    =      217
    Method: principal-component factors           Retained factors =        1
    Rotation: (unrotated)                         Number of params =        6
```

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.96083	3.32614	0.6601	0.6601
Factor2	0.63469	0.21418	0.1058	0.7659
Factor3	0.42051	0.06548	0.0701	0.8360
Factor4	0.35503	0.02422	0.0592	0.8952
Factor5	0.33081	0.03268	0.0551	0.9503

```
    Factor6  |      0.29813            .            0.0497       1.0000
-------------------------------------------------------------------------
LR test: independent vs. saturated:  chi2(15) =  705.99 Prob>chi2 = 0.0000
```

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
Compensati~1	0.8376	0.2984
Compensati~2	0.8141	0.3373
Compensati~3	0.8182	0.3305
Compensati~4	0.8507	0.2763
Compensati~5	0.8692	0.2446
Compensati~6	0.6692	0.5521

KMO compensations

```
. estat kmo
```

Kaiser-Meyer-Olkin measure of sampling adequacy

Variable	kmo
Compensati~1	0.9126
Compensati~2	0.9128
Compensati~3	0.9182
Compensati~4	0.9053
Compensati~5	0.8939
Compensati~6	0.9417
Overall	0.9115

CRONBACH'S ALPHA team work

```
. alpha Team1 Team2 Team3 Team4, item

Test scale = mean(unstandardized items)

                                                          average
                          item-test     item-rest       interitem
Item         |  Obs  Sign   correlation   correlation     covariance      alpha
-------------+------------------------------------------------------------------
Team1        |  217    +       0.8613        0.7409        1.876785      0.8314
Team2        |  217    +       0.8504        0.7228        1.917712      0.8387
Team3        |  217    +       0.8742        0.7763        1.917762      0.8192
Team4        |  217    +       0.8198        0.6736        2.032066      0.8582
-------------+------------------------------------------------------------------
Test scale   |                                             1.936081      0.8725
--------------------------------------------------------------------------------
```

FACTOR ANALYSIS team work

```
. factor Team1 Team2 Team3 Team4, pcf

(obs=217)

Factor analysis/correlation                       Number of obs    =      217
    Method: principal-component factors           Retained factors =        1
    Rotation: (unrotated)                         Number of params =        4

    --------------------------------------------------------------------------
         Factor  |   Eigenvalue   Difference        Proportion   Cumulative
    -------------+------------------------------------------------------------
        Factor1  |      2.90245      2.46006            0.7256       0.7256
        Factor2  |      0.44239      0.06520            0.1106       0.8362
        Factor3  |      0.37719      0.09922            0.0943       0.9305
        Factor4  |      0.27797            .            0.0695       1.0000
```

```
    ------------------------------------------------------------------------------
    LR test: independent vs. saturated:  chi2(6)  =  430.80 Prob>chi2 = 0.0000
Factor loadings (pattern matrix) and unique variances
    ---------------------------------------
        Variable |  Factor1 |   Uniqueness
    -------------+----------+--------------
           Team1 |   0.8621 |      0.2568
           Team2 |   0.8484 |      0.2802
           Team3 |   0.8833 |      0.2198
           Team4 |   0.8119 |      0.3408
    ---------------------------------------
```

KMO team work

```
estat kmo
Kaiser-Meyer-Olkin measure of sampling adequacy
    ------------------------
        Variable |     kmo
    -------------+---------
           Team1 |  0.8157
           Team2 |  0.8438
           Team3 |  0.7907
           Team4 |  0.8738
    -------------+---------
         Overall |  0.8274
    ------------------------
```

CRONBACH'S ALPHA support

```
alpha Support1 Support2 Support3, item
Test scale = mean(unstandardized items)
                                                      average
```

Item	Obs	Sign	item-test correlation	item-rest correlation	interitem covariance	alpha
Support1	217	+	0.7946	0.5447	2.484639	0.8876
Support2	217	+	0.8941	0.7525	1.675755	0.6785
Support3	217	+	0.8920	0.7490	1.697602	0.6826
Test scale					1.952665	0.8224

FACTOR ANALYSIS support

```
factor Support1 Support2 Support3, pcf
(obs=217)
Factor analysis/correlation                      Number of obs    =      217
    Method: principal-component factors          Retained factors =        1
    Rotation: (unrotated)                        Number of params =        3
```

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	2.23106	1.66425	0.7437	0.7437
Factor2	0.56681	0.36467	0.1889	0.9326
Factor3	0.20214	.	0.0674	1.0000

```
    LR test: independent vs. saturated:  chi2(3)  =  293.50 Prob>chi2 = 0.0000

Factor loadings (pattern matrix) and unique variances
```

Variable	Factor1	Uniqueness

```
    Support1 |   0.7621 |      0.4192
    Support2 |   0.9092 |      0.1733
    Support3 |   0.9075 |      0.1764
  ----------------------------------------
```

KMO support

```
estat kmo
Kaiser-Meyer-Olkin measure of sampling adequacy
  ----------------------
    Variable |     kmo
  -------------+---------
    Support1 |  0.8669
    Support2 |  0.6142
    Support3 |  0.6156
  -------------+---------
     Overall |  0.6586
  ----------------------
```

CRONBACH'S ALPHA managerial support

```
alpha Managerial1 Managerial2 Managerial3, item
Test scale = mean(unstandardized items)
                                                        average
                          item-test     item-rest       interitem
Item         |  Obs  Sign   correlation   correlation     covariance      alpha
-------------+------------------------------------------------------------------
Managerial1  |  217    +       0.8405        0.6416        2.096262      0.7762
Managerial2  |  217    +       0.8762        0.7128         1.79907      0.7038
Managerial3  |  217    +       0.8505        0.6545        2.001109      0.7637
-------------+------------------------------------------------------------------
Test scale   |                                            1.96548      0.8170
```

FACTOR ANALYSIS managerial support

```
factor Managerial1 Managerial2 Managerial3, pcf

(obs=217)

Factor analysis/correlation                       Number of obs    =      217
    Method: principal-component factors           Retained factors =        1
    Rotation: (unrotated)                         Number of params =        3

    --------------------------------------------------------------------------
         Factor  |   Eigenvalue   Difference        Proportion   Cumulative
    -------------+------------------------------------------------------------
        Factor1  |      2.19761      1.73987            0.7325       0.7325
        Factor2  |      0.45774      0.11309            0.1526       0.8851
        Factor3  |      0.34465            .            0.1149       1.0000
    --------------------------------------------------------------------------
    LR test: independent vs. saturated:  chi2(3)  =  227.93 Prob>chi2 = 0.0000
Factor loadings (pattern matrix) and unique variances

    ----------------------------------------
        Variable |  Factor1 |   Uniqueness
    -------------+----------+--------------
     Managerial1 |   0.8387 |      0.2966
     Managerial2 |   0.8813 |      0.2233
     Managerial3 |   0.8471 |      0.2824
    ----------------------------------------
```

KMO managerial support

```
estat kmo

Kaiser-Meyer-Olkin measure of sampling adequacy

    ------------------------
```

Variable	kmo
Managerial1	0.7389
Managerial2	0.6723
Managerial3	0.7233
Overall	0.7085

CRONBACH'S ALPHA services (1-5)

```
. alpha Services1 Services2 Services3 Services4 Services5, item

Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
Services1	217	+	0.8464	0.7338	1.415251	0.7865
Services2	217	+	0.7586	0.6196	1.652479	0.8189
Services3	217	+	0.7595	0.6211	1.651487	0.8185
Services4	217	+	0.7686	0.6227	1.601582	0.8183
Services5	217	+	0.7834	0.6470	1.579066	0.8116
Test scale					1.579973	0.8431

FACTOR ANALYSIS services (1-5)

```
. factor Services1 Services2 Services3 Services4 Services5, pcf

(obs=217)

Factor analysis/correlation                       Number of obs    =      217

    Method: principal-component factors           Retained factors =        1
```

Rotation: (unrotated) Number of params = 5

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.07333	2.36325	0.6147	0.6147
Factor2	0.71008	0.25109	0.1420	0.7567
Factor3	0.45899	0.06762	0.0918	0.8485
Factor4	0.39137	0.02514	0.0783	0.9268
Factor5	0.36623	.	0.0732	1.0000

LR test: independent vs. saturated: chi2(10) = 416.33 Prob>chi2 = 0.0000

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
Services1	0.8482	0.2806
Services2	0.7620	0.4193
Services3	0.7629	0.4180
Services4	0.7622	0.4191
Services5	0.7812	0.3897

KMO services (1-5)

```
. estat kmo
```

Kaiser-Meyer-Olkin measure of sampling adequacy

Variable	kmo
Services1	0.8283

```
       Services2 |  0.8374
       Services3 |  0.8403
       Services4 |  0.8296
       Services5 |  0.8331
    -------------+---------
         Overall |  0.8334
    -----------------------
```

STANDARDIZED SCORES services (6-9)

```
egen float zServices6 = std(Services6), mean(0) std(1)
(2307 missing values generated)
egen float zServices7 = std(Services7), mean(0) std(1)
(2307 missing values generated)
egen float zServices8 = std(Services8), mean(0) std(1)
(2307 missing values generated)
egen float zServices9 = std(Services9), mean(0) std(1)
(2307 missing values generated)
alpha zServices6 zServices7 zServices8 zServices9
```

CRONBACH'S ALPHA services (6-9)

```
alpha zServices6 zServices7 zServices8 zServices9, item
Test scale = mean(unstandardized items)
                                                        average
                            item-test     item-rest       interitem
Item         |  Obs  Sign   correlation   correlation     covariance      alpha
-------------+------------------------------------------------------------------
zServices6   |  217    +       0.9075        0.8381        .9370999      0.9781
zServices7   |  217    +       0.9585        0.9254        .8723125      0.9535
zServices8   |  217    +       0.9745        0.9537        .8519787      0.9453
zServices9   |  217    +       0.9733        0.9517        .8534528      0.9459
```

```
-------------+------------------------------------------------------------------
Test scale   |                                                  .878711      0.9666
-------------------------------------------------------------------------------
```

FACTOR ANALYSIS services (6-9)

```
Factor analysis/correlation                       Number of obs    =        217
    Method: principal factors                     Retained factors =          2
    Rotation: (unrotated)                         Number of params =          6
    --------------------------------------------------------------------------
         Factor  |   Eigenvalue   Difference        Proportion   Cumulative
    -------------+------------------------------------------------------------
        Factor1  |      3.52386      3.49404            1.0043       1.0043
        Factor2  |      0.02982      0.03127            0.0085       1.0128
        Factor3  |     -0.00144      0.04193           -0.0004       1.0124
        Factor4  |     -0.04337            .           -0.0124       1.0000
    --------------------------------------------------------------------------
    LR test: independent vs. saturated:  chi2(6)  = 1299.94 Prob>chi2 = 0.0000
Factor loadings (pattern matrix) and unique variances
    -------------------------------------------------
        Variable |  Factor1   Factor2 |   Uniqueness
    -------------+--------------------+--------------
      zServices6 |   0.8508    0.1207 |      0.2615
      zServices7 |   0.9461   -0.0632 |      0.1008
      zServices8 |   0.9741    0.0499 |      0.0486
      zServices9 |   0.9777   -0.0936 |      0.0354
    -------------------------------------------------
```

KMO services (6-9)

```
estat kmo
Kaiser-Meyer-Olkin measure of sampling adequacy
```

Variable	kmo
Services6	0.8922
Services7	0.8532
Services8	0.7747
Services9	0.7286
Overall	0.8029

Appendix 3: Normality tests

SKEWENESS/ KURTOSIS services (1-5)

```
. summarize ServicesLikertMean, detail

                    ServicesLikertMean

-------------------------------------------------------------

      Percentiles      Smallest

 1%            1              1

 5%            2              1

10%          2.4              1       Obs                 217

25%          3.4            1.6       Sum of Wgt.         217

50%          4.6                      Mean           4.343779

                        Largest       Std. Dev.      1.368958

75%          5.4            6.4

90%            6            6.6       Variance       1.874047

95%          6.2            6.6       Skewness      -.4064902

99%          6.6            6.6       Kurtosis       1.234703


sktest ServicesLikertMean

                   Skewness/Kurtosis tests for Normality

                                                       ------- joint ------

    Variable |    Obs   Pr(Skewness)   Pr(Kurtosis)  adj chi2(2)    Prob>chi2

-------------+-------------------------------------------------------------

ServicesLi~n |    217      0.0148         0.0003        15.74         0.004
```

SKEWENESS/ KURTOSIS services (6-9)

```
summarize  ServicesFSMean, detail

                      ServicesFSMean

-------------------------------------------------------------
```

	Percentiles	Smallest		
1%	0	0		
5%	.5	0		
10%	1	0	Obs	217
25%	1.75	0	Sum of Wgt.	217
50%	3		Mean	5.487327
		Largest	Std. Dev.	12.30943
75%	5	35		
90%	11.25	40.75	Variance	151.5221
95%	15.5	47.5	Skewness	10.04458
99%	40.75	162.5	Kurtosis	124.3198

```
sktest ServicesFSMean
```

Skewness/Kurtosis tests for Normality

				------- joint ------	
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
ServicesFS~n	217	0.0000	0.0000	.	0.0000

Appendix 4: Correlation test

```
correlate AutonomyMean RiskMean CompensationsMean TeamWorkMean SupportMean ManagerialMean
Resources1

(obs=217)

             |   Autono~n   RiskMean   Compen~n   TeamWo~n   Suppor~n   Manage~n   Resour~1
-------------+---------------------------------------------------------------------------
AutonomyMean |     1.0000
    RiskMean |     0.3835     1.0000
Compensati~n |     0.3973     0.2986     1.0000
TeamWorkMean |     0.3584     0.3302     0.3796     1.0000
SupportMean |     0.3295     0.3178     0.3816     0.3968     1.0000
Managerial~n |     0.3418     0.3082     0.3285     0.3188     0.3924     1.0000
  Resources1 |     0.2782     0.3567     0.3308     0.3278     0.3169     0.3377     1.0000
```

Appendix 5: Simple linear regression

```
gen time=_n

tsset time

        time variable:  time, 1 to 2524

                delta:  1 unit

regress IntrapreneurshipMean ServicesLikertMean, beta

      Source |       SS       df       MS              Number of obs =     217

-------------+------------------------------           F(  1,   215) =  272.59

       Model |  187.497081     1  187.497081           Prob > F      =  0.0000

    Residual |    147.8856   215  .687839998           R-squared     =  0.5591

-------------+------------------------------           Adj R-squared =  0.5570

       Total |  335.382681   216   1.5526976           Root MSE      =  .82936

------------------------------------------------------------------------------

Intrapreneurship~n |      Coef.   Std. Err.      t    P>|t|                     Beta

-------------------+----------------------------------------------------------

ServicesLikertMean |   .6805815   .0412218    16.51   0.000                 .7476992

             _cons |   1.550262   .1877009     8.26   0.000                        .

------------------------------------------------------------------------------
```

Durbin Watson

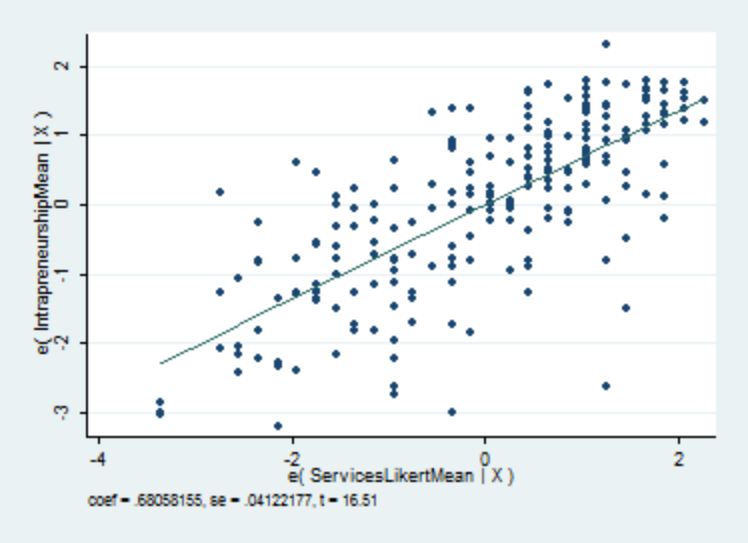
```
dwstat

Durbin-Watson d-statistic(  2,   217) =  2.042123
```

Variance Inflation Factor

```
vif

    Variable |       VIF       1/VIF

-------------+----------------------

ServicesLi~n |      1.00    1.000000

-------------+----------------------

    Mean VIF |      1.00
```

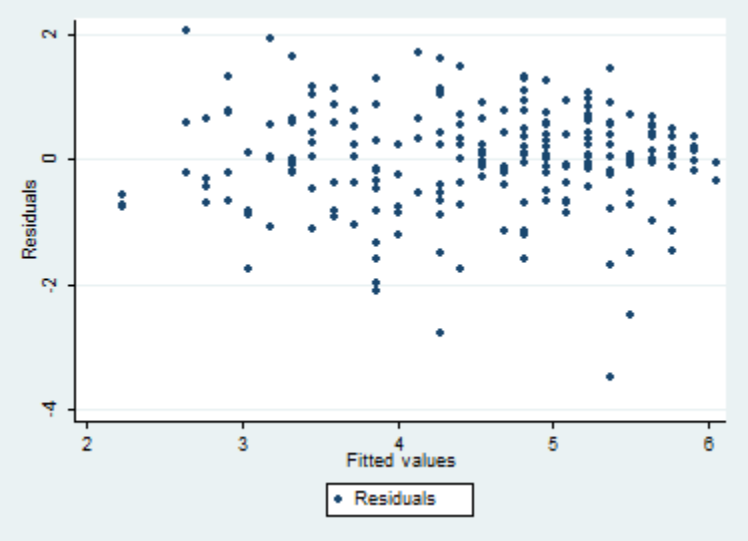
Additivity and linearity

```
avplots, recast (scatter)
```



Homoscedasticity

rvfplot, legend (on)



Appendix 6: Multiple linear regression

```
regress ServicesLikertMean AutonomyMean RiskMean CompensationsMean TeamWorkMean SupportMean ManagerialMean Resources1, beta

      Source |       SS       df       MS              Number of obs =     217
-------------+------------------------------           F(  7,   209) =   49.01
       Model |  251.557554     7  35.9367935           Prob > F      =  0.0000
    Residual |  153.236546   209  .733189216           R-squared     =  0.6214
-------------+------------------------------           Adj R-squared =  0.6088
       Total |  404.794101   216  1.87404676           Root MSE      =  .85626

------------------------------------------------------------------------------
ServicesLikertM~n |      Coef.   Std. Err.      t    P>|t|                     Beta
------------------+-----------------------------------------------------------
     AutonomyMean |  -.0953875   .0669697    -1.42   0.156                -.0918037
         RiskMean |   .1107584   .0721161     1.54   0.126                 .1155554
CompensationsMean |   .0824355   .0771459     1.07   0.286                 .0912115
     TeamWorkMean |   .1794107   .0736158     2.44   0.016                 .1952209
      SupportMean |   .1274105   .0620494     2.05   0.041                 .1434162
   ManagerialMean |   .2333959   .0800355     2.92   0.004                 .2644382
       Resources1 |   .1293064   .0473604     2.73   0.007                 .1666083
            _cons |   1.065986   .2328969     4.58   0.000                        .
------------------------------------------------------------------------------

*Removing autonomy

regress ServicesLikertMean RiskMean CompensationsMean TeamWorkMean SupportMean ManagerialMean Resources1, beta

      Source |       SS       df       MS              Number of obs =     217
-------------+------------------------------           F(  6,   210) =   56.57
       Model |  250.070104     6  41.6783506           Prob > F      =  0.0000
    Residual |  154.723997   210  .736780938           R-squared     =  0.6178
-------------+------------------------------           Adj R-squared =  0.6069
```

```
       Total |  404.794101   216  1.87404676           Root MSE      =  .85836

------------------------------------------------------------------------------
ServicesLikertM~n |      Coef.   Std. Err.      t    P>|t|                     Beta
------------------+-----------------------------------------------------------
         RiskMean |   .0556768   .0610195     0.91   0.363                .0580882
CompensationsMean |   .0823571   .0773346     1.06   0.288                .0911248
     TeamWorkMean |   .1719493   .0736088     2.34   0.020                 .187102
      SupportMean |   .1318435   .0621229     2.12   0.035                 .148406
   ManagerialMean |   .2191311   .0796007     2.75   0.006                .2482761
       Resources1 |   .1351406   .0472984     2.86   0.005                .1741254
            _cons |   .9453345    .217477     4.35   0.000                       .
------------------------------------------------------------------------------

*Removing Risk

regress ServicesLikertMean  CompensationsMean TeamWorkMean SupportMean ManagerialMean Resources1,
beta

      Source |       SS       df       MS              Number of obs =     217
-------------+------------------------------           F(  5,   211) =   67.77
       Model |  249.456696     5  49.8913391           Prob > F      =  0.0000
    Residual |  155.337405   211  .736196232           R-squared     =  0.6163
-------------+------------------------------           Adj R-squared =  0.6072
       Total |  404.794101   216  1.87404676           Root MSE      =  .85802

------------------------------------------------------------------------------
ServicesLikertM~n |      Coef.   Std. Err.      t    P>|t|                     Beta
------------------+-----------------------------------------------------------
CompensationsMean |   .0962939   .0757811     1.27   0.205                .1065452
     TeamWorkMean |   .1944965   .0693096     2.81   0.005                .2116362
      SupportMean |    .133133   .0620822     2.14   0.033                .1498575
   ManagerialMean |   .2254726   .0792652     2.84   0.005                .2554611
```

```
       Resources1 |   .1327364   .0472062     2.81   0.005                .1710278
            _cons |   1.018767   .2019579     5.04   0.000                       .
------------------------------------------------------------------------------

*Removing Compensations

regress ServicesLikertMean   TeamWorkMean SupportMean ManagerialMean Resources1, beta

      Source |       SS       df       MS              Number of obs =     217
-------------+------------------------------           F(  4,   212) =   84.06
       Model |  248.268004     4  62.0670011           Prob > F      =  0.0000
    Residual |  156.526096   212  .738330642           R-squared     =  0.6133
-------------+------------------------------           Adj R-squared =  0.6060
       Total |  404.794101   216  1.87404676           Root MSE      =  .85926

------------------------------------------------------------------------------
ServicesLike~n |      Coef.   Std. Err.      t    P>|t|                     Beta
---------------+--------------------------------------------------------------
  TeamWorkMean |   .2196413   .0665209     3.30   0.001                .2389968
   SupportMean |   .1547312   .0597965     2.59   0.010                 .174169
ManagerialMean |   .2590909   .0748278     3.46   0.001                .2935508
    Resources1 |   .1432349   .0465449     3.08   0.002                .1845547
         _cons |   1.060576   .1995483     5.31   0.000                       .
------------------------------------------------------------------------------

*Stepwise regression

stepwise,   pr(0.05):   regress   ServicesLikertMean   AutonomyMean   RiskMean   CompensationsMean
TeamWorkMean SupportMean ManagerialMean Resources1, beta

                     begin with full model

p = 0.2865 >= 0.0500  removing CompensationsMean

p = 0.1562 >= 0.0500  removing AutonomyMean

p = 0.2535 >= 0.0500  removing RiskMean

      Source |       SS       df       MS              Number of obs =     217
```

```
-------------+------------------------------           F(  4,   212) =   84.06
       Model |  248.268004     4  62.0670011           Prob > F      =  0.0000
    Residual |  156.526096   212  .738330642           R-squared     =  0.6133
-------------+------------------------------           Adj R-squared =  0.6060
       Total |  404.794101   216  1.87404676           Root MSE      =  .85926
------------------------------------------------------------------------------
ServicesLike~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------+--------------------------------------------------------------
ManagerialMean |   .2590909   .0748278     3.46   0.001     .1115892    .4065927
   SupportMean |   .1547312   .0597965     2.59   0.010     .0368594    .2726031
    Resources1 |   .1432349   .0465449     3.08   0.002     .0514848    .2349849
  TeamWorkMean |   .2196413   .0665209     3.30   0.001     .0885143    .3507684
         _cons |   1.060576   .1995483     5.31   0.000     .6672227    1.453929
------------------------------------------------------------------------------
```

Durbin Watson

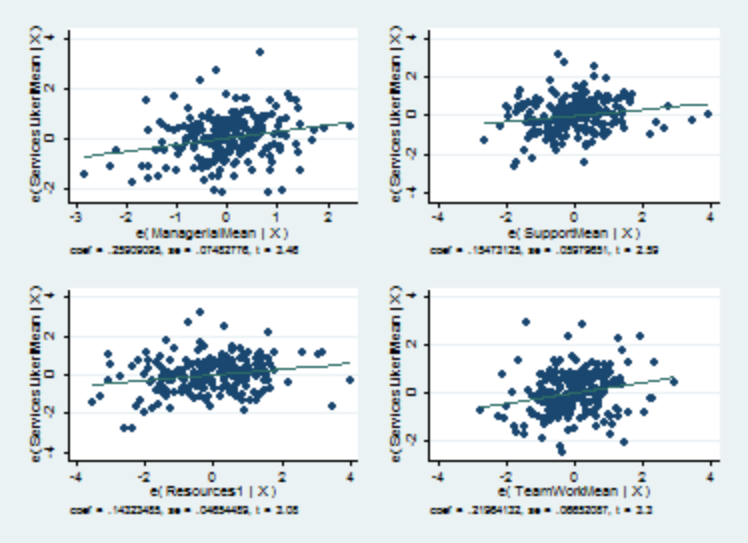
```
dwstat

Durbin-Watson d-statistic(  5,   217) =  1.954369
```

Variance Inflation Factor

```
estat vif

    Variable |       VIF       1/VIF
-------------+----------------------
Managerial~n |      1.94    0.253764
TeamWorkMean |      1.87    0.348133
 SupportMean |      1.48    0.402605
  Resources1 |      1.97    0.507131
-------------+----------------------
    Mean VIF |      1.82
```

Additivity and linearity

```
rvfplot, legend (on)
```



Homoscedasticity

```
avplots, recast (scatter)
```