IMPROVING PERFORMANCE AND ENTREPRENEURIAL COMPETENCES AT THE BASE OF THE PYRAMID. THE IMPACT OF ENTREPRENEURIAL DEVELOPMENT AGENCIES

by

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With love to:

God

My family

My Wife, María Isabel, with whom I have been in love for so many years.

My Children, who have inspired me to work hard and never be accustomed to the surprising things of life.

My Parents, who taught me the value of studying and put in my heart the desire of being as good as I might be.

My brothers, who reinforced my interest in science.

My Professors

My Friends

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ABSTRACT OF DISSERTATION

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Title: **IMPROVING PERFORMANCE AND ENTREPRENEURIAL COMPETENCES AT THE BASE OF THE PYRAMID. THE IMPACT OF ENTREPRENEURIAL DEVELOPMENT AGENCIES**

Entrepreneurial development has been seen as a gateway to economic vitality and poverty reduction in emerging economies. However, initiating and supporting economic growth in such economies through entrepreneurship has resulted problematic. This research aims to offer a model and a methodology to measure the impact of *entrepreneurial development agencies* (EDAs) on the performance and entrepreneurial competences of *business organizations at the base of the pyramid* (BOBOPs). Survey data were gathered from entrepreneurs participating in the incubation process of the Social Incubators System of the ITESM, in Mexico. Structural equation modeling gives evidence of a positive and significant impact of EDAs on performance of BOBOPs, through the mediating effect of entrepreneurial

competences, particularly, market orientation and market innovation. The impact of EDAs resulted grater under less favorable contextual factors.

RESUMEN DE DISERTACIÓN

ESCUELA DE GRADUADOS EN ADMINISTRACIÓN Y DIRECCIÓN DE EMPRESAS
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Título: **MEJORANDO EL DESEMPEÑO Y LAS COMPETENCIAS EMPRESARIALES EN LA BASE DE LA PIRÁMIDE. EL IMPACTO DE LAS AGENCIAS DE DESARROLLO EMPRESARIAL**

El desarrollo empresarial ha sido visto como una ruta hacia la vitalidad económica y la reducción de la pobreza en las economías emergentes. Sin embargo, iniciar y dar soporte al crecimiento económico en dichas economías a través de la empresarialidad ha resultado problemático. Esta investigación busca ofrecer un modelo y una metodología para medir el impacto de las *agencias de desarrollo empresarial* (ADEs) en el desempeño y competencias empresariales de las *organizaciones empresariales en la base de la pirámide* (OEBDPs). A través de

encuestas, se obtuvieron datos de empresarios participando en el proceso de incubación del Sistema de Incubadoras Sociales del ITESM, en México. Mediante la aplicación de técnicas estadísticas de ecuaciones estructurales se encontró evidencia de un impacto positivo y significativo de las ADEs en el desempeño de las OEBDPs, con el efecto mediador de las competencias empresariales, particularmente, de la innovación de mercado y la orientación de mercado. El impacto de las ADEs resultó mayor bajo condiciones menos favorables.

TABLE OF CONTENTS

List of Figures ……..xiii

List of Tables ……xiv

Chapter I. PROBLEM STATEMENT AND RESEARCH OBJECTIVES…...…1

I.1. Introduction **.....1**

I.2. Problem Statement**.....5**

I.3. Research Objectives **.....5**

I.4. Importance of this Research **.....6**

I.5. Dissertation Overview **.....7**

I.6. Summary**.....8**

Chapter II. LITERATURE REVIEW 9

II.1. Introduction **.....9**

II.2. Resource-Based View Theory**.....9**

II.3. Performance of the Business Organizations at the BOP **.....10**

II.4. Entrepreneurial Competences **.....12**

II.5. Influence of the Entrepreneurial Development Agency**.....16**

II.6. Contextual Factors**.....22**

II.7. Summary **.....24**

Chapter III. THEORETICAL MODEL.....25

III.1. Introduction 25

III.2. Research Questions 25

III.3. Theoretical Model 26

III.4. Hypotheses 39

III.5. Summary 42

Chapter IV. METHOD 44

IV.1. Introduction 44

IV.2. Population and Sample 46

IV.3. Survey Instrument 48

IV.4. Pilot Test 49

IV.5. Data Treatment 52

IV.6. Summary 55

Chapter V. RESULTS 56

V.1. Introduction 56

V.2. Measurement Model 57

V.3. Structural Model 75

V.4. Hypotheses Testing 80

V.5. Discussion 85

V.6. Summary 87

Chapter VI. CONCLUSIONS 88

VI.1. Introduction.....88

VI.2. Conclusions.....88

VI.3. Implications 90

VI.4. Limitations.....91

VI.5. Further Research.....91

VI.6. Summary.....92

REFERENCES.....93

GLOSSARY……..…103

Appendix A. Support Letter from the Social Incubators System of ITESM.....107

Appendix B. Preliminary Survey Instrument……108

Appendix C. Consultants Guide 116

Appendix D. Final Survey Instrument.....119

Appendix E. Descriptive Statistics for all Observed Variables ……129

Appendix F. EQS Program for the Final Model.....131

Biographical Sketch ……..136

LIST OF FIGURES

1. Dimensions of Entrepreneurial Competences ……. 13

2. Theoretical Model ……30

3. Central Model ……..40

4. Moderating Effects of Contextual Factors……42

5. F24 Measurement Model BOBOP Entrepreneurial Competences ……..63

6. F25 Measurement Model Influence of the EDA ……64

7. F26 Measurement Model Contextual Factors ……65

8. F27 Measurement Model BOBOP Performance ……65

9. Complete Measurement Model ……68

10. Structural Model with Significant Standardized Estimates ……...79

11. Moderating Effects of Contextual Factors on the relationship between the Influence of the EDA and Entrepreneurial Competences ……....83

12. Moderating Effects of Contextual Factors on the relationship between Entrepreneurial Competences and Performance ……..84

LIST OF TABLES

1. Entrepreneurial Perspectives against Poverty and Implied EDA types ……..….21

2. Summary of Factors …….38

3. Factors and Cronbach's Alpha Coefficients in the Pilot Test …….……50

4. Reliability Coefficients with the Final Sample ……...58

5. Relevant Fitting Indicators for the Respecified Independent and Complete Measurement Models …….60

6. Descriptive Statistics and Pearson Correlations among First-Order Factors ….67

7. Factor loadings for the First-Order Factors ……...71

8. Unstandardized Estimates and Significance ……..78

Chapter I

PROBLEM STATEMENT AND RESEARCH OBJECTIVES

I.1. Introduction

Despite of being an ancestral problem, the topic of poverty has become in fashion in the public agenda of the world as a response to the Objective of the Millennium of halving the number of people living in extreme poverty, by the year 2015, outlined by the Organization of the United Nations (UN, 2008). This objective has been adopted by other international organizations, such as the International Monetary Fund, the World Bank, the Inter-American Development Bank, and the Organisation for Economic Co-operation and Development; the challenge is enormous. Currently, two out of three people in the world live in poverty; most of them live in emerging economies (Prahalad, 2005). This part of the world's population has been called the "bottom of the pyramid", or the base of the pyramid (BOP), indicating its huge size and lower position in the economic order (Prahalad & Hart, 2002). In Mexico, the number of poor people reaches 50 million, approximately (Székely, 2005a).

Traditionally, poverty has been measured through personal income. The World Bank has established two basic lines of poverty: first, people living with less than 2 dollars a day, and; second, people living with less than 1 dollar a day[1] (extreme

[1] USD, purchasing parity power of 1993.

poverty). The commented Objective of the Millennium was established in terms of this definition (World Bank, 2005).

However, solely measuring incomes could not reflect in a real form the problem of poverty (Lessof & Jowell, 2000). During a study carried out by the World Bank in 23 countries around the world, the researchers interviewed 20,000 poor people about what wellbeing meant for them. The researchers found that wellbeing was considered by the interviewees as a multidimensional concept that included, besides the material aspect, physical and social matters, as well as the freedom for election and action, and the possibility to help others (Narayan, Chambers, Shah, & Petesch, 2000).

Some authors (Bhalla & Lapeyre, 2004; Lessof & Jowell, 2000) have suggested that instead of speaking of poverty, which is an economic, absolute and static concept; we should speak of social exclusion, which is, rather, a multidimensional, relative and dynamic concept. Under this point of view, social exclusion is not only a status, but also a process. This approach could mean a radical change in the design of strategies against poverty and inequality. The experience of the European Union in the process of including the former communist states revealed the utility and force of this concept; the intention is not that everybody reaches a minimum standard of life, like occurs in other regions of the world, but rather, that the whole population shares the benefits of a high level of prosperity (Atkinson, Cantillon, Marlier, & Nolan, 2005).

There is a widespread belief in the positive impact of economic growth in the decrease of poverty (Székely, 2005b; Stern, 2003; Narayan, 2002); however, mere economic growth, as that experienced by several emerging economies in Latin America during their process of economic liberalization, is not enough to diminish the number of the poor (Sheahan, 1997; Foster & Székely, 2001).

Besides, to have democratic institutions and to carry out high social expenses do not systematically affect the incomes of the poor (Dollar & Kraay, 2002). That is to say, the democratization of the institutional environment is necessary, but it is not enough to diminish the number of people under conditions of poverty.

It is necessary, also, to build human and social capital in such a way that everybody, including those at the BOP, can make the most of the opportunities derived from economic growth, technological development and democratization of the institutional environment. Otherwise, this growth will only be translated into a bigger inequality, and damage of the poorest (Espinosa, 2007; Giugale, 2001; Narayan, 2002; Sheahan, 1997).

Entrepreneurship can help alleviate poverty and inequality in emerging economies by detonating a process of social inclusion that builds human and social capital, and derives in a sustainable development. Several entrepreneurial perspectives, such as the BOP stream (Prahalad & Hart, 2002) and the socially inclusive businesses (Karnani, 2006) approaches, among others, can contribute to solve these problems (Bruton, Ahlstrom & Obloj, 2008).

Although entrepreneurial development has been seen as a gateway to economic growth and social life improvement, initiating and supporting economic growth through entrepreneurship in emerging economies has resulted problematic. External aid, such as foreign direct investment, can create unwanted dependencies (West, Bamford & Marsden, 2008).

In order to avoid negative consequences, external aid must boost a process of social inclusion and build human and social capital (Espinosa, 2007). At the firm level, this is the function of *entrepreneurial development agencies* (EDAs), which are individuals or institutions, from the private or the public sector, that aim to help *business organizations at the base of the pyramid* (BOBOPs) improve entrepreneurial competences in order to enhance performance.

BOBOPs are enterprises owned by one or more entrepreneurs belonging to the BOP. They are usually small businesses, with few employees and sales; commonly transact in an informal economy; frequently rely solely on entrepreneur-family workforce, and; face serious limits to grow up. The term BOBOPs is based on the concept of *bottom of the pyramid*, proposed by Prahalad and Hart (2002), who saw people in low income segments as potential consumers for multinational corporations. Rather, the term BOBOP in this research refers to enterprises owned by people in low income segments acting as entrepreneurs.

I.2. Problem Statement

Developing entrepreneurial competences appears to be problematic (McElwee, 2006). The question is to what extend entrepreneurial competences can be transferred? The creation of a new business starting from the perception of an opportunity and the work that it implies, going from an idea to a concrete and valuable proposal, and obtaining the necessary resources for it, seems to be more an art than a science. Besides, the heterogeneity of small business hinders the teaching of behaviors, abilities and entrepreneurial attitudes (McElwee, 2006; Pyysiäinen, Anderson, McElwee & Versala, 2006; Vesala, Peura & McElwee, 2007). EDAs must overcome these problems in their intervention, becoming an external aid that contributes to detonate a process of social inclusion, by improving entrepreneurial competences (Espinosa, 2007). The problem is whether EDAs really impact significantly on performance and entrepreneurial competences of BOBOPs.

I.3. Research Objectives

The general objective of this research is to offer a model and a methodology to assess the impact of entrepreneurial development agencies on entrepreneurial competences and performance of business organizations at the BOP, in emerging economies.

The particular objectives are:

1. To assess the impact of entrepreneurial development agencies' training activities on the improvement of entrepreneurial competences at the base of the pyramid;
2. To measure the impact of such improvement on the performance of business organizations at the base of the pyramid, and;
3. To develop an empirical model that helps explore and evaluate the relationships among the variables contained in the previous particular objectives.

I.4. Importance of this Research

The main contribution of this research is to offer a model and a methodology to assess the impact of entrepreneurial development agencies on entrepreneurial competences and performance of business organizations at the BOP, in emerging economies. It will allow researchers, practitioners and policy makers to evaluate the impact of particular training activities that aim to improve the performance of such businesses through the enhancing of entrepreneurial competences.

The proposed model and methodology might be of great interest for EDAs looking for improving their impact on the BOBOPs; entrepreneurs interested in growing and learning through the development of entrepreneurial competences, and; for those in charge of the design and application of public policies that aim to eradicate poverty and inequality, among others.

I.5. Dissertation Overview

Chapter II: Literature Review offers a theoretical framework to explain the process of improving performance and entrepreneurial competences through the intervention of EDAs. In this framework, entrepreneurial perspectives against poverty and inequality are identified and described in terms of their interventional approach and types of EDAs.

Chapter III: Theoretical Model presents a model that summarizes the hypothesized relationships among relevant variables in the process of improving entrepreneurial competences and performance of BOBOPs through the intervention of an EDA.

Chapter IV: Method describes the two-step approach used in the structural equation modeling methodology applied in hypotheses testing. It describes sampling and data treatment procedures, as well as the steps followed in the development of the final survey instrument. Finally, results of a pilot test are discussed.

Chapter V: Results includes the process of respecification of both measurement and structural models; theoretical implications are discussed. It also focuses on hypotheses testing and other relevant findings.

Chapter VI: Conclusions summarizes the main findings of the research and elaborates on implications and limitations of the research. Ideas for further research are presented as well.

I.6. Summary

Poverty and inequality are both the result of a historical process of social exclusion. Entrepreneurial perspectives, through the intervention of *entrepreneurial development agencies* (EDAs), can contribute to alleviate poverty and inequality in emerging economies by helping *business organizations at the base of the pyramid* (BOBOPs) improve performance and entrepreneurial competences, detonating a process of social inclusion that derives in an economic growth and a sustainable development.

Chapter II

LITERATURE REVIEW

II.1. Introduction

This section reviews relevant literature related to performance, entrepreneurial competences and intervention of EDAs at the base of the pyramid. In this framework, entrepreneurial perspectives against poverty and inequality are identified and described in terms of their interventional approach. These entrepreneurial perspectives have in common the necessary intervention of an EDA in order to improve entrepreneurial competences. Contextual factors and personal characteristics of low income entrepreneurs are also important aspects in the process of enhancing entrepreneurial competences and performance at the base of the pyramid.

II.2. Resource-Based View Theory

The Resource Based View (RBV) theory (Barney, 1991) aims to explain differences in performance among firms. It establishes that firms develop sustained competitive advantages based on heterogeneous and immobile resources. Exploiting these resources efficiently maximizes social welfare. However, entrepreneurs are limited in their ability to manipulate all the attributes and characteristics of their firms, making some firm resources imperfectly imitable and thus potentially sources of sustained competitive advantage (Barney, 1991).

Elaborating on RBV theory, the Resource-Advantage Theory of Competition (RATC) explains that, in market-based economies, innovative firms and individuals are automatically rewarded because such innovation is often a source of sustainable comparative advantage that enables them to offer products and services with value for some market segments (Hunt & Morgan, 1995). By competing in the marketplace, firms learn and develop entrepreneurial competences deriving in economic dynamism when they produce proactive innovations and result in marketplace positions of competitive advantage and higher performance (Hunt & Morgan, 1996).

Although, it is necessary to develop diverse entrepreneurial techniques, such as selling, producing and accounting, these are not enough for the success of a business: entrepreneurial attitudes (such as market and entrepreneurial orientations) and exploitation of social networks could be equally important in the construction of competitive advantages (Barney, 1991; Hunt & Morgan, 1996; Nieuwenhuis, 2002; Pyysiäinen, Anderson, McElwee & Versala, 2006).

Thus, it can be inferred that by improving entrepreneurial competences, businesses organizations at the BOP will be capable of developing sustainable competitive advantages in such a way that they can grow, generate greater incomes for their owners, create jobs, pay taxes, and deliver higher value to market.

II.3. Performance of the Business Organizations at the BOP

RATC proposes that "firms have the primary objective of superior financial performance", while the specific measure and referent can widely vary (Hunt &

Morgan, 1996, pp 108). Thus, financial performance is a key concept when discussing entrepreneurial outcomes.

When assessing financial performance, at the BOP, a subjective measure is desirable due to the inability and unwillingness to provide objective and accurate financial performance figures. Previous research has found a strong correlation between subjective assessments of performance and their objective counterparts. Also, losses or low profits in small, growth oriented firms may not be indicative of poor management, and directly comparing objective financial data obtained from small firms in different industries would be misleading (Dess & Robinson, 1984; Pearce, Robbins & Robinson, 1987).

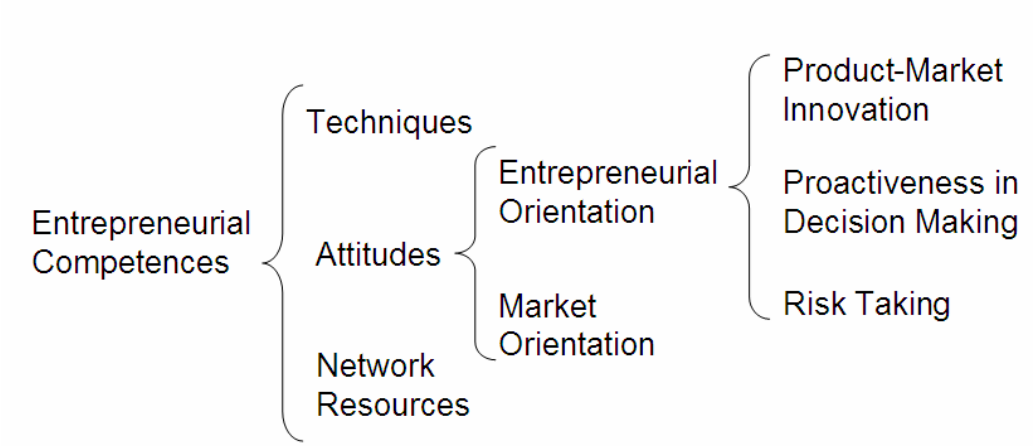
Beyond financial outcomes, a broader concept of performance at the base of the pyramid is necessary, since what is important is to detonate a process of social inclusion, and not only to increase incomes. Other important business outcomes are the wellbeing of the entrepreneur, and growth and longevity of the BOBOP (Steffens, Davidsson & Fitzsimmons, 2009; Desai, Kalra & Murthi, 2008). In a study carried out by Narayan, Chambers and Petesch (2000), it was found that wellbeing was not only a matter of incomes. Other aspects, such as having access to health and education, being free to take decisions and actions, and the possibility of helping others, were also important.

II.4. Entrepreneurial Competences

The relationship between entrepreneurship and economic growth has been widely studied in developed economies. Entrepreneurial development has been seen as a gateway to economic vitality, leading to a growing tax revenue base, enhancing prospects for self-generating innovation and future growth, and yielding qualitative improvements to social life (West, Bamford & Marsden, 2008). Indeed, entrepreneurship has been seen as the engine that will push the emerging economies forward; however, to date, the potential impact of entrepreneurship on subsistence economies has largely been ignored (Bruton, Ahlstrom & Obloj, 2008).

The development of entrepreneurial techniques and attitudes has been seen with great interest in the process of improving performance (Nieuwenhuis, 2002; Pyysiäinen, Anderson, McElwee & Versala, 2006; Vesala, Peura & McElwee). Besides, knowledge and innovation (relevant components of entrepreneurial techniques and attitudes) can be developed through collaborative networks (Nieuwenhuis, 2002). Entrepreneurial techniques and attitudes, as well as the capability of making the most of network resources, are entrepreneurial competences upon which sustainable competitive advantages can be built (Barney, 1991; Hunt & Morgan, 1996). Figure 1 summarizes the dimensions composing entrepreneurial competences.

Figure 1. Dimensions of Entrepreneurial Competences



Techniques

Techniques are the skills required by the entrepreneur or the enterprise to be in business; such as producing, selling, accounting, and other capabilities related to the daily operations of the firm. Cooking in a restaurant and selling in a store are examples of these.

Attitudes

Attitudes are dispositions to act in a certain way under specific business situations. Entrepreneurial orientation and market orientation are both entrepreneurial attitudes commonly referred in the business-related literature (Basso, Fayolle & Bouchard, 2009; Runyan, Droge & Swinney, 2008). These orientations are correlated concepts that appear to complement one another, at least in small businesses, to boost profitability (Baker & Sinkula, 2009). They also have been both recognized as "learning constructs" (Slater & Narver, 1995).

1) Entrepreneurial orientation. It is defined as the willingness of the firm to take business-related risks, to favor change and innovation in order to obtain a competitive advantage, and to compete aggressively with other firms (Covin & Slevin, 1988, Miller, 1983). Kreiser, Marino and Weaver (2002) developed an entrepreneurial orientation scale, based on the work of Covin and Slevin (1989). The scale assumes that entrepreneurial firms will exhibit high levels of three dimensions: a) product-market innovation; b) proactiveness of decision making, and; c) risk taking.

a) Product-market innovation has been singled out as the most critical factor in defining corporate entrepreneurship. It refers to the capacity of the firm to develop a higher than average number of new products or new markets (Kreiser, Marino & Weaver, 2002). Covin and Miles (1999) have argued that other dimensions of entrepreneurial orientation were, in fact, antecedents, consequences, or correlates of innovation.

b) Proactiveness of decision making is related to the organizational pursuit of favorable business opportunities and an aggressive behavior directed at rival firms (Kreiser, Marino & Weaver, 2002).

c) Risk taking is centered on the willingness of entrepreneurs to engage in calculated business-related risks. Entrepreneurs tend to view situations more favorably than non-entrepreneurs and, consequently, in their decision making, they

are more overconfident than managers in large organizations (Kreiser, Marino and Weaver, 2002).

Organizational research provides strong theoretical support for measuring the concept of entrepreneurial orientation with these three dimensions, even in different cultures (Kreiser, Marino and Weaver, 2002).

2) Market orientation. It is defined as the disposition of the firm to deliver higher value to its costumers continuously (Han, Kim & Srivastava, 1998). It entails the commitment to continuous information gathering and coordination of customers' needs, competitors' capabilities and the provisions of other significant market agents and authorities.

Network resources

Recently, networks resources have been recognized as a relevant source of competitive advantage (Ring, Peredo & Chrisman, 2009). Small businesses, facing a lack of resources, usually lean on relatives and friends to sustain their operations. Besides, in emerging economies, a weak institutional environment forces business organizations to build non-traditional partnerships on informal connections (London & Hart, 2004).

Network resources are the sum of actual and potential resources embedded within, available through, and derived from a network of relationships (Nahapiet & Ghoshal, cited in Yiu & Lau, 2008). It includes supporting networks in government,

institutional, family and social environments, as well as those derived from strategic alliances, and reputation.

Research on development of entrepreneurial competences in small businesses is scarce, and several dimensions of the topic deserve in depth study, for example: business strategies, entrepreneurial capacities, entrepreneur women, and the support required for small business organizations. An important challenge consists on facilitating entrepreneurs at the BOP to develop their entrepreneurial competences, which requires economic support and a bigger effort in entrepreneurial education and training (McElwee, 2006, Díaz-Pichardo & García de la Torre, 2009).

II.5. Influence of the Entrepreneurial Development Agency

The effort of the EDA, which is, actually, an external aid in subsistence economies at the level of the firm, improves the entrepreneurial competences of the BOBOPs through a mix of techniques which are usually participative in nature. The intervention of the EDA aims to impact on the mentality of entrepreneurs and employees, changing their mindset and attitudes, in order to expand their vision and possibilities; building, essentially, a human and social capital (Espinosa, 2007). EDAs also help BOBOPs develop entrepreneurial techniques as well as expand and exploit their social networks in attracting and developing other critical resources, such as talent, knowledge, technology and financing. The intervention of the EDA can be described as a learning transfer system, which is an effective and continuing application, by trainees to their jobs, of the knowledge and skills gained in training

both in and off the job (Broad & Newstrom, 1992). EDAs accompany BOBOPs in their task of becoming more entrepreneurial and, therefore, more competitive.

At different stages in its growing, a BOBOP may interact with several EDAs, even at the same time. Considering that the intervention of an EDA occurs in a certain moment, when assessing its impact, it is important to take into account the characteristics of the BOBOP, and its context. At the end, what really matters is the adequacy of the intervention of the EDA to the BOBOP, which is revealed in its learning outcomes (Holton, Bates & Ruona, 2000). This intervention is primarily one of changing attitudes and perspectives, as well as building human competences, which is a transfer of learning (Baker & Sinkula, 2009).

Entrepreneurial perspectives against poverty and inequality propose the intervention of EDAs that enhance entrepreneurial competences at the BOP in order to make businesses more competitive and allow them to grow up. Some relevant entrepreneurial perspectives are: the base of the pyramid (BOP) stream, socially inclusive business, community-based enterprises, social entrepreneurship, cooperatives, supportive economy, micro-finance, and Corporate Social Responsibility (CSR).

BOP Stream

In the BOP stream perspective, a multinational corporation (MNC) interested in enter new markets, launches "new initiatives that explore the untapped market potential at the base of the economic pyramid" in order to make profits by serving the

poor (London & Hart, 2004, pp 350). At the beginning (Prahalad & Hart, 2002), this approach implied that entrepreneurial competences were built only inside the MNC, as a classical top-down model; however, recently, it considers the co-creation of value, in a more equal relationship between the MNC and the local partners (London, Anupindi & Sheth, 2009; Simanis & Hart, 2008). The "initiative" becomes itself an EDA, closely related to the MNC. Essentially, the BOP stream involves external ventures or entrepreneurs entering BOP markets (London, 2007).

Socially Inclusive Businesses

In the socially inclusive business approach, what is important is buying from the poor, increasing their real income. The EDA, which can be a non-for-profit organization or a university, works in building entrepreneurial competences of low income entrepreneurs, especially as producers (Karnani, 2006).

Community-Based Enterprises

In the community-based enterprises perspective, poor communities are intended to be transformed into an entrepreneur and an enterprise, pursuing a sustainable local development. The community's cultural identity is seen as a driving force that impels social, economic and environmental initiatives concurrently. Local culture is expected to endow the community with the comparative advantage necessary to compete globally. The EDA can be a non-for-profit organization or a university (Peredo & Chrisman, 2006).

Social Entrepreneurship

From the social entrepreneurship approach, poverty is the result of both economic and social excluding conditions, which can be reverted with simple but powerful tools, such as credit. The reduction of poverty entails a continuous process of asset creation from which the poor can generate additional income and wealth that becomes stronger at each economic cycle (Yunus, 1998). Although it is a top-down perspective, the improving of entrepreneurial competences is fundamental. The social enterprise is usually the EDA, although other forms such as universities, NGOs and even individuals are possible. The concept of "social entrepreneurship" is increasingly being used in a very broad sense, ranging from voluntary activism to CSR (Defourny & Nyssens, 2008).

Cooperatives

In the perspective of cooperatives, the poor have an intrinsic entrepreneurial potential that must be unleashed. The main job of the EDA is to guide an introspective reflection in people that allows them to define their own objectives and be aware of their capacities and possibilities. Synergies that can be obtained as a group are very important in this approach as a source of sustainable competitive advantages (Espinosa, 2007). Democratic and participatory methods are used in management in order to pursuit economic, environmental and individual objectives in the long term (Forcadell, 2005). The EDA can be a governmental or non-governmental organization.

Supportive Economy

In supportive economy, what is proposed is that increasing solidarity in all levels of the economic activity will improve productivity and will derive in social and cultural benefits that will favor the society as a whole(Economía Solidaria, 2008). Supportive economy can help informal entrepreneurs achieve a social reinsertion by promoting an economic culture centered on the human being (Bruni, 2001). The EDA, which is a non-for-profit organization help entrepreneurs introducing increasing levels of solidarity in their activities and business relationships.

Micro-finance

In this perspective, it is assumed that the lack of credit prevents the poor from escaping from the cycle of poverty they have been in for so long. The EDA is usually the financial institution that provides credit and other formal financial services to the poor (Barboza & Barreto, 2006).

Corporate Social Responsibility (CSR)

CSR refers to corporate policies that assume and articulate responsibility for some societal interests and concerns (Matten & Moon, 2008). Eventually, these corporate policies derive in particular projects that intended or not, enhance entrepreneurial competences at the BOP. In this case, the EDA can be the specific department inside the corporation or a new organization created for applying the corporate policies.

A brief summary of these entrepreneurial perspectives is shown in Table 1.

Table 1. Entrepreneurial Perspectives Against Poverty and Implied EDA types

Entrepre-neurial Perspective	Some representative authors and references	Emphasis	Types of EDA
BOP Stream	Hammond, 2006; Hammond, Kramer, Katz, Tran & Walter, 2007; Hart, 2007; London, 2007; London, Anupindi & Sheth, 2009; London & Hart, 2004; Prahalad, 2005; Prahalad & Hart, 2002; Sánchez, Ricart, & Rodríguez, 2005; Seelos & Mair, 2007; Townsend & Hart, 2008	Top-down. Selling to the poor, who are seen mainly as consumers or, sometimes, as key informants to learn how to better sell to the poor	Specially MNCs and its local "initiatives"
Socially inclusive businesses	Karnani, 2006; Márquez, Reficco & Berger, 2008; Rangan, Quelch, Herrero, & Barton, 2007	Top-down / Bottom-up. Buying from the poor, increasing their real income	Individual social entrepreneurs, social enterprises, or NGOs
Community-based enterprises	Manyara & Jones, 2007; Peredo, 2003; Peredo, & Chrisman, 2006	Bottom-up. Enhance the entrepreneurial community. Sustainability	Individual social entrepreneurs, or NGOs
Social entrepre-neurship	Defourny & Nyssens, 2008; Yunus, 1998	Top-down. Social benefit to the poor, who are seen as partners	Social enterprises, universities, NGOs or individuals
Cooperatives	Bartra, Cobo, & Paz, 2004; Espinosa, 2007; Forcadell, 2005; Staber, 1993	Bottom-up. Making decisions democratically	Public agencies, social enterprises, or NGOs

Supportive economy	Bruni, 2001; Economía Solidaria, 2008	Bottom-up. Common property, common decision making. Sustainability	Individual social entrepreneurs, social enterprises, or NGOs
Micro-finance	Barboza & Barreto, 2006	Top-down. Credit breaks with poverty cycle	Financial institutions
CSR	Matten & Moon, 2008	Top-down. Relieve social pressure and improve corporate image	Corporate department or project

Entrepreneurial perspectives for alleviating poverty and inequality imply the intervention of an EDA as a key element in fostering a process of social inclusion in emerging economies that prevents from creating undesirable dependencies while external aids are provided. The intervention of an EDA must, essentially, help the BOBOP improve its entrepreneurial competences and performance.

II.6. Contextual Factors

Beyond the boundaries of the BOBOP and the EDA, environmental factors might contribute to strengthen entrepreneurial competences and performance (Subramanian, Kumar, & Strandholm, 2009). Those factors can be conceptualized as tangible factors, such as infrastructure availability, and; intangible factors, such as institutions and competitive environment.

On one hand, tangible factors can contribute to enhance or limit performance and development of entrepreneurial competences. The availability of infrastructure

and services such as research institutions, transportation, credit, and communications, determine the possibilities of doing businesses and compete.

On the other hand, institutions, which consist of both informal constraints (customs, traditions, and codes of conduct) and formal rules (laws), have been created through history to provide order and reduce uncertainty in exchange, determining the profitability and feasibility of engaging in economic activity (North, 1991).

Additionally, the competitive environment might affect the entrepreneurial competences-performance relationship. In this case, the possibility of a moderating effect is consistent with a long tradition of support for the theory that environment moderates the effectiveness of organizational characteristics (Slater and Narver, 1994). That is to say, the usefulness of a particular entrepreneurial competence depends on the environmental conditions under which that competence is used (Lumpkin, & Dess, 2001). For instance, the importance of being wedded to the served markets may be more pronounced in stable markets, while dynamic market conditions may favor exploiting immature markets (Subramanian, Kumar, & Strandholm, 2009).

Some researchers have found that environmental conditions moderate the impact of market orientation and entrepreneurial orientation on performance (Davidsson, Delmar, and Wiklund, 2006; Gotteland, and Boulé, 2006; Kohli, and Jaworski, 1990; Wiklund, and Shepherd, 2005).

Thus, entrepreneurs, in order to succeed, must learn how to evaluate this context and identify the relevant entrepreneurial competences to be developed in such

environment (Nieuwenhuis, 2002; Pyysiäinen, Anderson, McElwee, & Versala, 2006).

II.7. Summary

The Resource-Based View theory and Resource-Advantage Theory of Competition propose that firms develop competitive advantages in the quest for a superior performance. While competing in the marketplace, firms learn and develop entrepreneurial competences that derive in comparative advantages that can be sustained over time and increase performance, which, at the base of the pyramid, goes beyond the financial dimension. Entrepreneurial competences can be improved through the intervention of entrepreneurial development agencies, which, in the view of entrepreneurial perspectives, are key elements in the process of alleviating poverty. Favorable tangible and intangible external factors might contribute to strengthen entrepreneurial competences and performance.

Chapter III

THEORETICAL MODEL

III.1. Introduction

A great quantity of resources has been invested in alleviating poverty and inequality around the world with, paradoxically, poor results (Simanis & Hart, 2008). The number of the poor and the gap between the poorest and the richest has been enlarged in recent years. The liberalization of economies and the sole economic growth have been demonstrated not to solve the problem at all (Foster & Székely, 2001; Narayan, Chambers, Shah & Petesch, 2000).

Due to the complexity and dimension of poverty and inequality, complementary approaches are needed to contribute to the solution. Entrepreneurial perspectives, by triggering or enhancing a process of social inclusion, can contribute to achieve the Objective of the Millennium. However, in order to align public policies and business strategies, it is important to improve our knowledge about whether and how these approaches can contribute to this purpose.

III.2. Research Questions

This study will answer to what extend:

1. The intervention of an EDA improves the entrepreneurial competences of BOBOPs.
2. The enhancing of entrepreneurial competences impacts on the performance of the BOBOPs.
3. Contextual factors impact on entrepreneurial competences and performance of BOBOPs.

III.3. Theoretical Model

Entrepreneurial perspectives for alleviating poverty imply the intervention of EDAs that trigger a process o social and economic development at the base of the pyramid. At the end, the intervention of the EDA must impact on performance, especially on financial performance. However, although financial performance is one of the most studied business outcomes in the literature, other performance indicators are also important when a process of social inclusion is intended to be provoked.

The intervention of an EDA aims to improve the situation of the poor, not only in financial terms, but also in terms of human and social capital. Consequently, a broader concept of business performance, beyond financial terms, is necessary. In this research, it is proposed that a more comprehensive concept of business performance can include, besides financial performance, the wellbeing of the entrepreneur, the growth and continuity of his business, as well as other non-financial outcomes, such as respect for people and for environment.

In order to improve the situation of the poor, the EDA must impact positively and significantly on performance. A good influence of the EDA implies that its intervention has provoked relevant changes in the mindset and attitudes of entrepreneurs and that those changes have improved significantly their entrepreneurial competences. What are important are not the qualifications of the EDA but the quality of its particular intervention, according to the profile and context of the BOBOP. The readiness of the learner, the perceived content validity and the expected outcomes from the learning transfer system determine the adequacy of the intervention of the EDA in any particular case. A good intervention of the EDA implies a good adequacy of its behavior to the particular situation of the BOBOP.

Both indirect and direct impacts of the influence of the EDA on performance that complement one another in accounting for the total effect of the intervention are hypothesized.

The indirect impact is provoked through the mediating effect of entrepreneurial competences. That is to say, the consultancy and training activities of the EDA improve significantly the entrepreneurial competences of BOBOPs, and then, this improvement impacts positively and significantly on performance.

The direct impact of the influence of the EDA on performance results from collateral effects of the activities of the EDA, regardless of the transferring of learning. For instance, the EDA could help the BOBOP to get a credit or to decide on a particular business dilemma.

Entrepreneurial competences refer to the entrepreneurial and market orientations, as well as the network resource capital that the BOBOPs develop due to the intervention of the EDA.

As stated by the Resource-Based View theory (Barney, 1991) and the Resource-Advantage Theory of Competition (Hunt & Morgan, 1995, 1996, 1997), firms build competitive advantages on their unique competences. Therefore, more and better entrepreneurial competences will translate in better opportunities to develop and maintain sustainable competitive advantages. Entrepreneurial competences, in this research, include those attitudes and social network resources that the entrepreneur improve due to the intervention of the EDA. Although important, entrepreneurial techniques are not included in this research because it would be too complicated to evaluate the particular business skills required in a great diversity of industries. However, it could be a subject of further research.

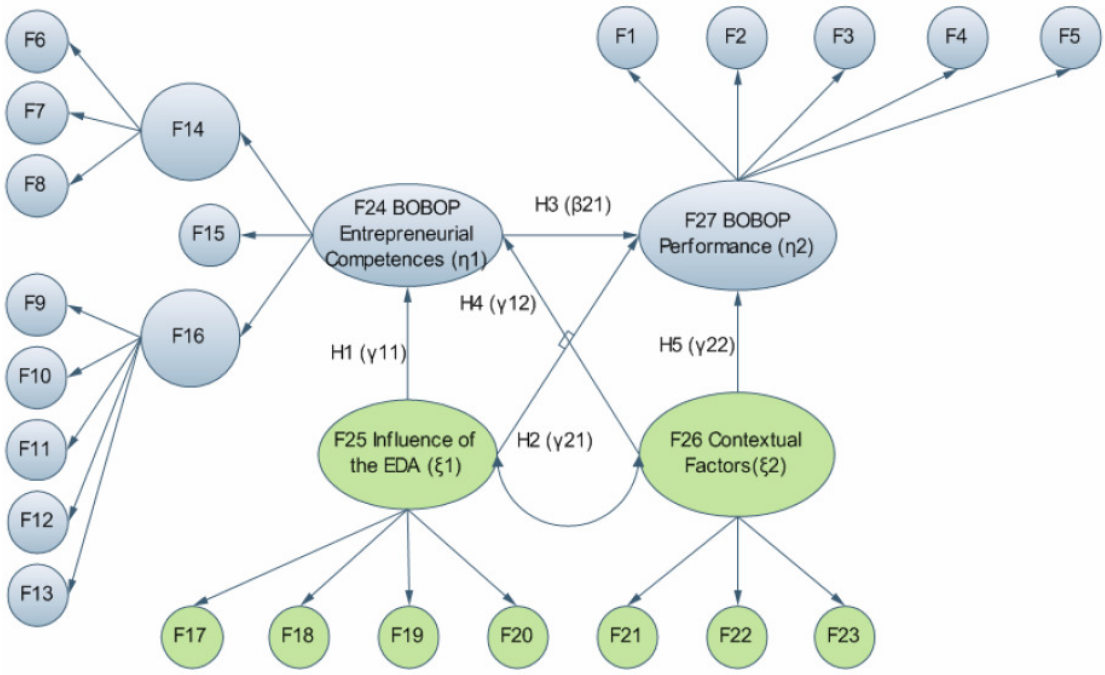
Finally, contextual factors play an important role in entrepreneurial development. Favorable environments facilitate entrepreneurs to focus on opportunities and have access to critical resources, such as talent or credit, in order to build new and unique competences as sources of competitive advantages. On the opposite, turbulence in the economic conditions or the lack of basic infrastructure can reduce significantly the capacity of the BOBOP to develop such competences. Tangible and intangible contextual factors that determine the competitive environment in which the BOBOPs work can impact significantly on their

entrepreneurial competences and performance. More favorable contextual factors might have a positive impact on the results obtained through the intervention of the EDA in terms of improvement of the entrepreneurial competences and on the business outcomes.

Additionally, contextual factors can foster or limit the demand for products and services, facilitating or making difficult increasing sales or margins. External circumstances, such as the elimination of tariffs and other commercial barriers, may add pressure to enhance quality at international levels. If the BOBOP is prepared for this, it could be an opportunity to export. Otherwise, it could be a terrible menace. Thus, certain contextual factors might be favorable for a BOBOP depending on its particular stage of development and the circumstances of the local industry.

A theoretical model that summarizes the previous arguments is shown in Figure 2. In this model, the four ellipses (at the center) are the main factors (latent variables or constructs) to which hypotheses are related to. BOBOP Entrepreneurial Competences (F24) and BOBOP Performance (F27) are both endogenous factors, explained in the model. Influence of the EDA (F25) and Contextual Factors (F26) are both exogenous factors, not explained in the model. SEM and EQS notation is used to specify factors and hypotheses.

Figure 2. Theoretical Model



Where,

F1 = Financial Performance;

F2 = Wellbeing;

F3 = Growth;

F4 = Longevity;

F5 = Other Performance Measures;

F6 = Market Innovation;

F7 = Proactiveness in Decision Making;

F8 = Risk Taking;

F9 = Government Support;

F10 = Institutional Support;

F11 = Family and Social Support;

F12 = Strategic Alliances;

F13 = Reputation;

F14 = Entrepreneurial Orientation;

F15 = Market Orientation;

F16 = Network Resource Capital;

F17 = Learner Readiness;

F18 = Positive Personal Outcomes;

F19 = Negative Personal Outcomes;

F20 = Perceived Content Validity;

F21 = Environmental Hostility;

F22 = Infrastructure availability;

F23 = Economic Activity Index;

The structural equations are the following:

$$\eta 1 = \gamma 11\ \xi 1 + \gamma 12\ \xi 2 + \zeta 1 \quad (1)$$

$$\eta 2 = \beta 21\ \eta 1 + \gamma 21\ \xi 1 + \gamma 22\ \xi 2 + \zeta 2 \quad (2)$$

Where,

$\eta 1$ = BOBOP Entrepreneurial Competences (endogenous factor),

$\eta 2$ = BOBOP Performance (endogenous factor),

$\xi 1$ = Influence of the EDA (exogenous factor),

$\xi 2$ = Contextual Factors (exogenous factor),

$\gamma 11$ = Relationship between BOBOP Entrepreneurial Competences and Influence of the EDA (Hypothesis 1),

$\gamma 21$ = Relationship between BOBOP Performance and Influence of the EDA (Hypothesis 2),

$\beta 21$ = Relationship between BOBOP Performance and BOBOP Entrepreneurial Competences (Hypothesis 3),

$\gamma 12$ = Relationship between BOBOP Entrepreneurial Competences and Contextual Factors (Hypothesis 4),

$\gamma 22$ = Relationship between BOBOP Performance and Contextual Factors (Hypothesis 5),

$\zeta 1$ = Disturbance of BOBOP Entrepreneurial Competences,

$\zeta 2$ = Disturbance of BOBOP Performance.

The curved arrow linking independent factors F25 and F26 indicates that these factors are allowed to freely correlate. Observed variables are omitted in the drawing in order to keep it simple.

Factors in this research are measured through Likert and Likert-type scales. Definitions and operationalization of factors are described as follows:

F24 BOBOP Entrepreneurial Competences (η1).

This factor is defined as the degree of mastery the BOBOP shows in the set of competences that allow the firm to successfully compete in the market, make profits and grow steadily. This is a third-order factor, composed by three different dimensions, each of them reflecting a particular capacity required by the BOBOP: a) entrepreneurial orientation; b) market orientation, and; c) network resource capital.

a) Entrepreneurial orientation (F14) is a second-order factor defined as the willingness of the BOBOP to favor change and innovation *(Market Innovatoin, F6)* in order to obtain a competitive advantage, to compete aggressively with other firms *(Proactiveness in Decision Making, F7)*, and to take business-related risks *(Risk Taking, F8)* (Covin & Slevin, 1988, Miller, 1983). This factor is measured through a scale based on the entrepreneurial orientation scale by Kreiser, Marino and Weaver (2002) who based their work on previous research of Covin and Slevin (1989).

b) Market orientation (F15) is defined as the disposition of the firm to deliver higher value to its costumers continuously. It entails the commitment to continuous information gathering and coordination of customers' needs, competitors' capabilities and the provisions of other significant market agents and authorities. In this research, a market orientation scale formulated by Han, Kim and Srivastava (1998), based on previous research by Narver and Slater (1990) is used.

c) Network resource capital (F16) is a second-order factor defined as the value assigned to the assets created through network affiliation; it is the sum of actual

and potential resources embedded within, available through, and derived from a network of relationships (Nahapiet & Ghoshal, cited in Yiu & Lau, 2008). This factor is composed by five dimensions: i) government support; ii) institutional support; iii) family and social support; iv) strategic alliances, and; v) reputation.

i) Government support (F9) is derived from the relationships of the entrepreneur with governmental offices. It includes training, financial and information services, legal assistance, and other benefits.

ii) Institutional support (F10) is derived from the relationships of the entrepreneur with non-governmental institutions, different from the Social Incubators of ITESM. It includes training, financial and information services, legal assistance, and other benefits.

iii) Family and social support (F11) is derived from family and acquaintances that help the entrepreneur in daily operations and offer assistance in financial, legal or technical matters.

iv) Strategic alliances (F12) is derived from alliances with commercial and technological purposes.

v) Reputation (F13) is derived from recognition and collaborative relationships with innovation purposes.

F27 BOBOP Performance (η2).

This second-order factor is defined as the business outcome of the BOBOP. It is composed by five dimensions: a) financial performance; b) wellbeing of the

entrepreneur; c) growth of the enterprise; d) longevity of the enterprise, and; e) other performance measures.

a) Financial performance (F1). Covin and Slevin (1989) developed a subjective measure of financial performance, based on the satisfaction or dissatisfaction that the top managers of the firm expressed about several performance criteria. This kind of measure is preferable due to the inability and unwillingness of small businesses to provide objective and accurate financial performance data. In this study, only the "satisfaction" measure of the scale is used due to the fact that multiplicative composites, such as that proposed by Covin and Slevin, are psychometrically invalid (Trauer & Mackinnon, 2001).

b) Wellbeing (F2) is not only a matter of incomes (Narayan, Chambers & Petesch, 2000), other aspects, such as having access to health and education, being free to take decisions and actions, and the possibility of helping others, are also important. The scale developed by Cummins (2006) has been selected in this research as it offers a comprehensive concept of what wellbeing means, including: standard of living, personal health, achieving in life, personal relationships, personal safety, community-connectedness, future security and spirituality-religion.

c) The *Growth (F3)* of the enterprise is operationalized as the number of full-time and part-time jobs created in the last year. Full-time jobs are those in which people spend 6 hours a day or more, while part-time jobs are those in which people spend less than 6 hours a day.

d) The *Longevity (F4)* of the enterprise is operationalized as the number of years in continuous operation since its establishment.

e) Other performance measures (F5) is a factor included to take into account other dimensions of performance of BOBOPs, such as distinction between the familiar and the business cash flow, and respect for people and environment.

F25 Influence of the EDA (ξ1).

This factor is defined as the adequacy of the intervention of the EDA in the BOBOP. In this research, it is measured through a Likert scale including several items selected from the Learning Transfer System Inventory (LTSI), which is a theoretically-based, psychometrically-sound instrument developed by Holton, Bates & Ruona (2000) as a diagnosis tool to help identify factors affecting performance from learning outcomes. This instrument was selected because it is focused on the transfer learning situation; that is to say, it takes into account the factors (in the individual, the training and the organization) affecting the developing of competences in the BOBOP as a result of the intervention of the EDA.

Four factors were selected from this instrument:

a) Learner readiness (F17) is the extent to which individuals are prepared to enter and participate in training.

b) Positive personal outcomes (F18) is the extent to which applying training on the job leads to outcomes that are positive for the individual.

c) Negative personal outcomes (F1) is the extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes.

d) Perceived content validity (F20) is the extent to which trainees judge training content to accurately reflect job requirements.

F26 Contextual Factors (ξ2).

This construct is defined as the degree to which environmental circumstances facilitate or difficult the operations of the BOBOP. This construct is composed by three different dimensions: a) environmental hostility; b) infrastructure availability, and; c) economic activity.

a) Environmental hostility (F21) is the degree of risk and stress perceived by the entrepreneur in the competitive environment. This factor is measured by using the three-item scale developed by Khandwalla (1976/77). The respondents' ratings on these three items are averaged to arrive at a single environmental hostility index for each firm. The higher the index, the more hostile the environment of the firm will be.

b) Infrastructure availability (F22) is the extent to which the entrepreneur perceives the infrastructure facilitates his business operations. This factor is measured in this research by a Likert-type scale considering transportation, basic services, telecommunications, and financial services, among others elements.

c) Economic activity index (F23) is an indicator of the volume of market transactions that occur in the particular municipality and industry of the entrepreneur.

It is measured in this research as the logarithm of the gross product of the municipality where the enterprise mainly operates, in its particular industry, according to the must recent available official information.

A summary of factors and related hypotheses is shown in Table 2.

Table 2. Summary of Factors

Related Hypotheses	Third-Order Factor	Second-Order Factor	First-Order Factor
H1 (γ11) H3 (β21) H4 (γ12)	**F24 BOBOP Entrepreneurial Competences (η1)**	F14 Entrepreneurial Orientation (based on Kreiser, Marino & Weaver, 2002)	F6 Market Innovation
			F7 Proactiveness in decision making
			F8 Risk taking
			F15 Market orientation (based on Han, Kim & Srivastava, 1998)
		F16 Network Resource Capital (based on Yiu & Lau, 2008)	F9 Government Support
			F10 Institutional Support
			F11 Family and Social Support
			F12 Strategic alliances
			F13 Reputation
H2 (γ21) H3 (β21) H5 (γ22)		**F27 BOBOP Performance (η2)**	F1 Financial Performance (based on Covin & Slevin, 1989)
			F2 Wellbeing (based on Cummins, 2006)
			F3 Growth
			F4 Longevity
			F5 Other Performance Measures

H1 (γ11) H2 (γ21)	**F25 Influence of the EDA (ξ1)** (based on Holton, Bates, & Ruona, 2000)	F17 Learner Readiness
		F18 Positive Personal Outcomes
		F19 Negative Personal Outcomes
		F20 Perceived Content Validity
H4 (γ12) H5 (γ22)	**F26 Contextual Factors (ξ2)**	F21 Environmental Hostility (based on Covin & Slevin, 1989)
		F22 Infrastructure availability (based on Covin & Slevin, 1989)
		F23 Economic Activity Index

III.4. Hypotheses

Based on previous arguments, the following hypotheses are proposed:

Hypothesis 1 (γ11). *The influence of the EDA is directly and positively related to the entrepreneurial competences of the BOBOP.*

Hypothesis 2 (γ21). *The influence of the EDA is directly and positively related to the performance of the BOBOP*.

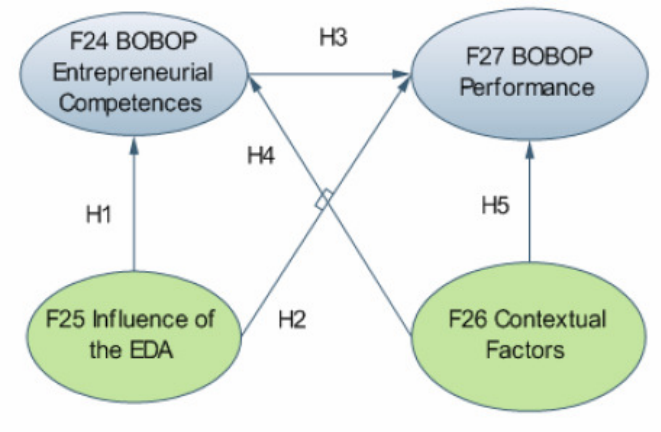
Hypothesis 3 (β21). *The better the entrepreneurial competences of the BOBOP, the better its performance will be*.

Hypothesis 4 (γ12). *The more favorable the contextual factors, the better the entrepreneurial competences of the BOBOP will be*.

Hypothesis 5 (γ22). *The more favorable the contextual factors, the better the performance of the BOBOP will be.*

These hypotheses are graphically presented in Figure 3. In this simplification of the model, only the four main factors, F24 to F27, appear.

Figure 3. Central Model



All relations in the model are supposed to be positive. That is to say, a positive variation in the independent variable produces a positive variation in the dependent variable. Each straight arrow linking F24 to F27 factors in Figure 3 represents one of the five hypotheses expressed in the model. These hypotheses allow us to test for mediating effects of the Entrepreneurial Competences factor in the relationships between Performance and both Influence of the EDA and Contextual Factors.

Additionally, by considering possible moderating effects of contextual factors, as the literature review suggests, a more comprehensive approach of the phenomenon can be obtained. Contextual Factors might affect the relationship between Entrepreneurial Competences and Performance. The existence of such moderating

effects would imply that different levels of Environmental Hostility, Infrastructure Availability and Economic Activity require a different configuration of Entrepreneurial Competences. For instance, a minimal amount of market orientation could be needed in markets characterized by strong demand, and vice verse (Kohli & Jawroski, 1990).

In the same way, the Contextual Factors might have a moderating effect on the relationship between the Influence of the EDA and Entrepreneurial Competences. Unfavorable environments might make appear the development of Entrepreneurial Competences as more important to the entrepreneur and, consequently, the Influence of the EDA can be more effective.

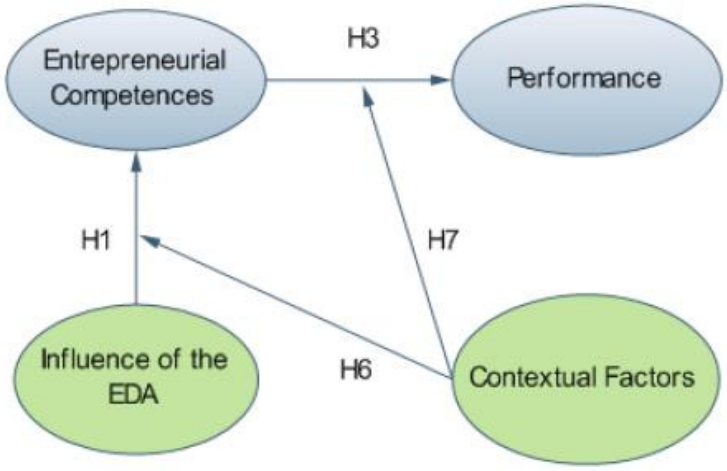
Thus, the following hypotheses are proposed:

Hypothesis 6. *The contextual factors have a moderating effect on the relationship between the influence of the EDA and the entrepreneurial competences of the BOBOP*.

Hypothesis 7. *The contextual factors have a moderating effect on the relationship between the entrepreneurial competences of the BOBOP and its performance*.

These hypotheses are graphically represented in Figure 4.

Figure 4. Moderating Effects of Contextual Factors



III.5. Summary

Hypotheses in this research are expressed in terms of the proposed relationships among the four main variables identified in the literature review: performance, entrepreneurial competences, influence of the entrepreneurial development agency, and contextual factors. These hypotheses can be summarized as follows: the influence of entrepreneurial development agencies and favorable contextual factors impact positively and significantly on the entrepreneurial competences and performance of business organizations at the base of the pyramid, and; improving entrepreneurial competences in business organizations at the base of the pyramid impacts positively and significantly on their performance. Moderating effects of contextual factors on the relationships between the influence of the EDA

and entrepreneurial competences and between the latter and performance are also hypothesized.

Chapter IV

METHOD

IV.1. Introduction

The problem of poverty and inequality is, certainly, a complex one. Solutions from the perspective of the firm have been scholarly studied mainly through qualitative research. However, the current development of computer programs has made feasible applying complex statistical procedures to a great amount of data, allowing the researchers to investigate models of relationships among variables by using quantitative techniques in supporting theory development based on empirical data (Bagozzi, 1984). This is the case of the family of techniques referred as covariance structure modeling, or structural equation modeling (SEM).

Part of SEM's origins date to 1904, with the development of what we now call exploratory factor analysis, usually credited to Charles Sperman. Several years later, in 1921, the basics of path analysis were developed by Sewall Wright. These measurement (factor analysis) and structural (path analysis) approaches were integrated in the early 1970s by K. G. Jöreskog, J. W. Keesling, and D.E. Wiley. One of the first widely available SEM computer programs was LISREL, developed by K. G. Jöreskog and D. Sörbom in the 1970s and subsequently updated by them (Kline,

2005). The SEM techniques are widely used in areas such as developmental psychology, behavioral genetics, sports medicine, education, marketing, and administration, to name just a few. To date, it is difficult to pick up almost any issue of an empirical journal in the behavioral sciences and not find at least one article in which SEM was used (Hayduk, 1987; Kline, 2005). Recently, hypotheses including entrepreneurial orientation and market orientation factors have been tested by using structural equation modeling, for example in Baker and Sinkula (2009) and in Runyan, Droge and Swinney (2008).

The factor model estimates latent variables from observed variables without regard for the structural relations among the unobserved variables. Yet it is often these structural relations that are of greatest theoretical interest. The structural equation model focuses on these structural relations, but assumes that all of the variables are measured without error. SEM overcomes the complementary weakness and combines the complementary strengths of the factor analytic and the structural equation models by merging them into a single model that simultaneously estimates latent variables from observed variables and estimates and tests the structural relations among the latent variables (Churchill, 1979; Fornell & Larcker, 1981; Long, 1983; Weston & Gore, 2006). Besides, SEM allows the evaluation of entire models which brings a higher-level perspective to the analysis in the process of theory development (Kline, 2005).

In this research, EQS 6.1 is used to run the analyzed model and submodels. Some features that make EQS interesting in this application are the robust methodology that corrects for violation or multivariate normality and the automatic identification of outliers and multicolinearity problems.

IV.2. Population and Sample

In this research, data were obtained from the enterprises participating in the Social Incubators System of the ITESM, in Mexico. These enterprises fully correspond to the profile of the BOBOPs described in Chapter I, since they are owned by one or more entrepreneurs belonging to the BOP; they are small businesses, with few employees and sales; some of them transact in an informal economy, and; frequently rely solely on entrepreneur-family workforce and face serious limits to grow up. In Mexico and other Latin American countries, the base of the pyramid can represent up to 70% of the population (SNV-IADB, 2008).

In the same way, the Social Incubators correspond to the concept of EDA since they aim to help BOBOPs improve their entrepreneurial competences in order to reach growth and profitability, through a transfer learning system that looks for sustainable development in communities. These Social Incubators belong to the Social Entrepreneurship Perspective shown in Chapter II.

It is interesting to notice that the concept of *social incubator* for the Social Incubators System of the ITESM differs from the traditional use of the term that refers to those institutions incubating social projects.

Up to 2008, the Social Incubators System of ITESM counted with 52 Social Incubators in 22 States, in Mexico, and had registered 435 enterprises in the incubation process.

During the incubation process, at the Social Incubators System of ITESM, the entrepreneur receives training and entrepreneurial consultancy, as well as connections to access credit and markets. At the end of this period, the participant is expected to be a well trained entrepreneur, to have a business plan, to have a formal business, and to reach enough sales to be sustainable.

SEM is a large-sample technique. In general, more complex models require more cases than does the analysis of a simpler model. A sample between 100 and 200 is considered a medium sample size; and more than 200 is considered a big size (Kline, 2005). A minimum of 5 cases per observed parameter is recommended as a rule of thumb (Bartlett, Kotrlik & Higgins, 2001). However, Muthén and Muthén (2002) have pointed out that no rule of thumb applies to all situations. In fact, sample size requirements depend strongly on many factors, including the size of the model, distribution of the variables, amount of missing data, reliability of the variables, and strength of the relationships among the variables; considerations that can be considered appropriately through power analysis.

In order to have an adequate sample, all entrepreneurs in the incubation process will be asked for participating in the survey. Appendix A shows the support letter from the Social Incubators System of ITESM.

IV.3. Survey Instrument

Factors in this research are measured mainly through Likert and Likert-type scales. A preliminary survey instrument (see Appendix B) was used to improve the validity of the scales. Six entrepreneurs, participants in the Social Incubator Caracol, in Monterrey, were interviewed. Four of the interviews were done in the business site; one at the entrepreneur's home, and; the other at the facilities of the Social Incubator. When necessary, the interviewer explained the meaning of difficult words or rephrased the items in a more friendly way. Based on the reactions of the entrepreneurs, interviewees were asked to explain what they understood in certain items, and why they choose a particular answer, in order to validate the concept behind their response. As a result, major changes were done in the survey instrument, including the rephrasing of several items and the addition of two scales in the network resource construct: first, a scale to measure the support of family, friends and acquaintances, and; second, a scale to measure the support of non-government institutions. Several items were added as well in some scales, in order to enhance the scope of the constructs to include important dimensions in the life of entrepreneurs, such as the satisfaction with the time they could spend with their family. Finally, the

survey was built in the SurveyMonkey platform, in Internet, in order to allow respondents to take the survey in the Social Incubator facilities, wherever they were in the country.

IV.4. Pilot Test

A pilot test was conducted to verify the reliability of the measures and detect any problem in collecting data through the SurveyMonkey platform. Three Social Incubators participated in this purpose: Saltillo, Ramos Arizpe, and Laguna. Consultants were asked for facilitating the entrepreneurs to take the survey in the facilities of the Social Incubator. A guide for the consultants (Appendix B) was prepared in order to explain the objectives of the research and the basic principles and procedures in collecting data. The link to take the survey was included in this guide. Consultants had to call entrepreneurs, offer them access to a computer with Internet connection at the Social Incubator, and solve doubts and problems that could emerge during the survey application.

During a week, thirteen surveys were completed; nine of them by women. Eleven respondents reported that they have counted with the assistance of a consultant while taking the survey. Three more surveys were opened but not completed. No doubts, questions or comments were received from the consultants or the entrepreneurs.

Data from the thirteen completed surveys were used to estimate preliminary reliability coefficients for all constructs included in the model, in order to identify possible failing items in the scales. Results from the pilot test are reported in Table 3. Problematic scales (Cronbach's Alpha < 0.7) are in italics.

Table 3. Factors and Cronbach's Alpha Coefficients in the Pilot Test

Related Hypo-theses	Third-Order Factor	Second-Order Factor	First-Order Factor	Cronbach´s Alpha
H1 (γ11) H3 (β21) H4 (γ12)	**F24 BOBOP Entrepre-neurial Compe-tences (η1)**	F14 Entrepre-neurial Orientation (based on Kreiser, Marino & Weaver, 2002)	*F6 Market Innovation*	*.28*
			F7 Proactiveness in decision making	.82
			F8 Risk taking	*.03*
			F15 Market orientation (based on Han, Kim & Srivastava, 1998)	.78
		F16 Network Resource Capital (based on Yiu & Lau, 2008)	F9 Government Support	.84
			F10 Institutional Support	.98
			F11 Family and Social Support	.93
			F12 Strategic alliances	*-.5*
			F13 Reputation	*.53*
H2 (γ21) H3 (β21) H5 (γ22)		**F27 BOBOP Performance (η2)**	F1 Financial Performance (based on Covin & Slevin, 1989)	.96
			F2 Wellbeing (based on Cummins, 2006)	.87
			F3 Growth	*.55*
			F4 Longevity	Not applicable

		F5 Other Performance Measures	.81
H1 (γ11) H2 (γ21)	**F25 Influence of the EDA (ξ1)** (based on Holton, Bates, & Ruona, 2000)	F17 Learner Readiness	.86
		F18 Positive Personal Outcomes	.85
		F19 Negative Personal Outcomes	.87
		F20 Perceived Content Validity	.97
H4 (γ12) H5 (γ22)	**F26 Contextual Factors (ξ2)**	*F21 Environmental Hostility (based on Covin & Slevin, 1989)*	*.50*
		F22 Infrastructure availability (based on Covin & Slevin, 1989)	.87
		F23 Economic Activity Index	Not applicable

Thirteen of the nineteen first-order constructs resulted with appropriate preliminary Cronbach's alpha coefficients (most of them greater than 0.85). Three of the six problematic constructs were associated to certain type of question that was considered somewhat confusing for some respondents in the pre-pilot test. The constructs in this situation were: Market Innovation (Cronbach's alpha = .28) and Risk Taking (Cronbach's alpha = .03), from the Entrepreneurial Orientation construct, and; Environmental Hostility (Cronbach's alpha = .5), from the Contextual Factors construct. In the corresponding items, the respondents were asked to decide how close they were from either a phrase (phrase A) or another (phrase B), assumed

to be the opposite points in a continuum. Presumably, the respondents did not identify those phrases as opposites, deriving in unreliable measures. These items were rephrased in a different format, following other measures that performed well.

The other three problematic constructs were: Strategic alliances, and Reputation, from the Network Resource Capital construct, and; Growth, from the BOBOP Performance construct. Probably, the concepts included in these scales resulted unfamiliar to the entrepreneurs in this segment. However, they were included in the final version of the survey in the hope that they perform better as the sample size increases. The final survey instrument, containing 109 items plus details of the BOBOP is shown in Appendix C. A more friendly visualization and interaction with the interviewees were achieved through the survey tools of Survey Monkey. In the bigger section of the questionnaire, the order of items was randomized to reduce common method bias (Meade, Watson & Kroustalis, 2007).

IV.5. Data Treatment

In order to test the hypotheses proposed in this research, following Anderson and Gerbing (1988), a two-step approach structural equation modeling is carried out. This approach allows us to "gain in theory testing and assessment of construct validity from separate estimation (and respecification) of the measurement model prior to the simultaneous estimation of the measurement and structural submodels" (p. 411). Consequently, first, the measurement model is estimated and respecified, and; second, the structural relations are tested. Respecification of the model is

necessary due to the fact that "initially specified measurement models almost invariably fail to provide acceptable fit" (p. 412).

A key issue in SEM is fit assessment. Having a good fit of the model to the data is a necessary condition before any interpretation of results. In this research, following Hatcher (1994), the criteria used to assess the fitting of models are:

1. The *p* value for the model chi-square test should be non significant (> 0.05), the closer to 1.00, the better (the statistic tests for rejecting the null hypothesis that the matrix of covariances in the sample is equal to that predicted by the model, which is a hypothesis the researcher usually do not want to reject). Although restrictive, this condition prevents from relevant misspecification in models.
2. The chi-square/df ratio should be less than 2.
3. The comparative fit index (CFI) an the non-normed fit index (NNFI) should both exceed 0.9; the closer to 1.00, the better.
4. The absolute value for the *t* statistic for each factor loading should exceed 1.96, and the standardized factor loadings should be nontrivial in size.
5. The distribution of normalized residuals should be symmetrical and centered on zero, and relatively few (or no) normalized residuals should exceed 0.2 in absolute value.

6. Composite reliabilities for the latent factors should exceed .7 (.6 at the very least).
7. Unidimensionality of the measures is required, which means that the content of the measure can be identified as consisting of groups of items, whit each group measuring only a single trait.
8. A 90% of confidence interval of RMSEA includes 0.00.
9. Discriminant validity for the questionable pairs of factors should be demonstrated through the chi-square difference test (this is only performed for the complete measurement model and the structural model).

In order to determine the adequacy of the sample size, a power analysis is done.

As a final step in the methodology, moderating effects of contextual factors on the relationships between the influence of the EDA and entrepreneurial competences, and between the latter and performance are tested. Moderation involves a third variable (or set of variables) that acts as a controlling condition for the effects of variables (or sets of variables) on other variables (or sets of variables). That is to say, the effect of a predictor (*X*) on an outcome (*Y*) varies across levels of a moderator (*M*). For example, there might be a number of sessions in an intervention where there is no longer an increment to the effects, because the effect of the intervention has been fully achieved. In this case, the number of sessions (*M*) moderates the effect of

that intervention (*X*) on the outcome (*Y*) (Hopwood, 2007, p. 263). In this research these moderating effects are tested through regression analysis. Beta coefficients of linear regressions between entrepreneurial competences and performance, for those entrepreneurs reporting favorable and unfavorable contextual factors, are compared; significant differences in those coefficients reveal moderating effects.

IV.6. Summary

Structural equation modeling (SEM) allows researchers to investigate relationships among variables by using quantitative techniques in supporting theory development based on empirical data. SEM overcomes the complementary weakness and combines the complementary strengths of the factor analytic and the structural equation models by merging them into a single model that simultaneously estimates latent variables from observed variables and estimates and tests the structural relations among the latent variables. A survey instrument, based on existing scales, in-depth interviews with low income entrepreneurs, and a pilot test, was designed to collect data from entrepreneurs at the base of the pyramid participating in the incubation process of the Social Incubator System of the ITESM, in Mexico. Most measures resulted in good reliability coefficients in the pilot test. A two-step SEM approach is conducted in order to gain in theory testing and assessment of construct validity from separate estimation and respecification of the measurement model prior to the simultaneous estimation of the measurement and structural submodels.

Chapter V

RESULTS

V.1. Introduction

Data were collected through the Survey Monkey platform, from November 25th to December 31st, 2009. Interviewees were living in 13 different states, in Mexico, and were participating in 17 different Social Incubators; 80% of surveys came from 6 different Social Incubators, in Mexico City, Chihuahua, Hidalgo and Coahuila; 60% of interviewees were women, and; 30% had received entrepreneurial training in any form as a part of their schooling background. The average age of interviewees was 42 years old, with 13 years of schooling, which is the first year of undergraduate studies. No significant differences in age or years of schooling were found between men and women.

37% of interviewees were in the industrial sector, 40% in services and 23% in commerce. A wide variety of industries were represented in the sample, for instance: food services, car maintenance, gifts, education, information technology, commerce, real state, and jewelry. 90% of interviewees reported less than 24,000 USD[2] in annual sales revenues. Descriptive statistics for all variables in the final survey instrument are shown in Appendix E.

[2] 300,000 current Mexican Pesos.

A total of 135 surveys were registered. In order to clean the data, several surveys were dropped before doing any statistical analysis: 10 surveys were dropped because they did not have any answer in the variables composing Entrepreneurial Orientation, which is a key measure in the research; 8 surveys were dropped because the entrepreneur had not completed at least one course or one project in the Social Incubator; 6 surveys were dropped because the name of the entrepreneur was repeated (the more complete survey or the first survey was kept); 2 surveys were dropped because of awkward answers. As a result, 109 surveys remained in the final sample.

Following Anderson and Gerbing (1988), a two-step approach structural equation modeling is carried out. First, the measurement model is estimated and respecified, and; second, the structural relations are tested.

V.2. Measurement Model

As a first step in the process of validating the measurement model, reliability coefficients were calculated for every single first-order factor in the model by using EQS 6.1. Results are shown in Table 4. Low reliability coefficients (< 0.7) are in italics.

Table 4. Reliability Coefficients with the Final Sample

Related Hypo-theses	Third-Order Factor	Second-Order Factor	First-Order Factor	Items in the Survey Instrument	Cronbach Alpha
H1 (γ11) H3 (β21) H4 (γ12)	**F24 BOBOP Entrepre-neurial Compe-tences (η1)**	F14 Entrepreneurial Orientation (based on Kreiser, Marino & Weaver, 2002)	*F6 Market Innovation*	*22 to 24*	*.51*
			F7 Proactiveness in decision making	*25 to 27*	*.61*
			F8 Risk taking	*28 and 29*	*.37*
			F15 Market orientation (based on Han, Kim & Srivastava, 1998)	38 to 51	.84
		F16 Network Resource Capital (based on Yiu & Lau, 2008)	F9 Government Support	66 to 74	.91
			F10 Institutional Support	75 to 83	.95
			F11 Family and Social Support	84 to 93	.89
			F12 Strategic alliances	*102 and 103*	*.6*
			F13 Reputation	*104 to 106*	*.47*
H2 (γ21) H3 (β21) H5 (γ22)		**F27 BOBOP Performance (η2)**	F1 Financial Performance (based on Covin & Slevin, 1989)	13 to 21	.97
			F2 Wellbeing (based on Cummins, 2006)	2 to 12	.92
			F3 Growth	107 and 108	.73

		F4 Longevity	109	Not apply
		F5 Other Performance Measures	*33 to 37*	*.37*
H1 (γ11) H2 (γ21)	**F25 Influence of the EDA (ξ1)** (based on Holton, Bates, & Ruona, 2000)	*F17 Learner Readiness*	*52 to 55*	*.68*
		F18 Positive Personal Outcomes	56 to 58	.72
		F19 Negative Personal Outcomes	*59 to 61*	*.58*
		F20 Perceived Content Validity	62 to 65	.84
H4 (γ12) H5 (γ22)	**F26 Contextual Factors (ξ2)**	*F21 Environmental Hostility (based on Covin & Slevin, 1989)*	*30 to 32*	*.60*
		F22 Infrastructure availability (based on Covin & Slevin, 1989)	94 to 101	.90
		F23 Economic Activity Index	110	Not applicable

These results allow us to anticipate several problems in the composing of the variables in the model, especially in the Entrepreneurial Orientation factor. In order to identify problematic observed variables, independent confirmatory factor analytical models for each main factor (F24 to F27) were performed. As a consequence, several

observed variable were dropped depending on their contribution to the overall fitting in the measurement model, according to the criteria established in the method section.

Relevant indicators for the independent measurement models are shown in Table 5. As expected, all measurement models had to be respecified in order to obtain well-fitted models. All *p* values for the model chi-square test resulted above 0.05, giving evidence of a good fit of all models to the data. Besides, all factor loadings were significant, which is a condition required to have a good measurement model. On the other hand, normalized multivariate kurtosis showed that the data is not normal and, consequently, it requires a robust method of estimation. Not only does robust methodology in the EQS program correct for non-normality, but also it is preferred when categorical variables are treated as continuous variables (Bentler, 2006). That is the case of this research, where the sample size prevents from the use of polychoric correlations.

Table 5. Relevant Fitting Indicators for the Respecified Independent and Complete Measurement Models

	F24 BOBOP Entrepreneurial Competences (η1)	F25 Influence of the EDA (ξ1)	F26 Contextual Factors (ξ2)	F27 BOBOP Performance (η2)	Complete Measure-ment Model
Model Chi-Square	350	50	13	35	460
Degrees of freedom	337	40	13	45	439
p	0.31	0.14	0.46	0.87	.23

Chi-Square/df	1.04	1.25	1.00	0.77	1.05
CFI	0.99	0.96	1.00	1.00	0.98
NNFI	0.98	0.94	1.00	1.05	0.98
All factor loadings are significant ($p < 0.05$)	Yes	Yes	Yes	Yes	Yes
Distribution of normalized residuals	Ok	Ok	Ok	Ok	Ok
Composite reliability coefficient (Rho)	0.91	0.88	0.73	0.87	.87
90% confidence interval of RMSE includes 0.00	Yes	Yes	Yes	Yes	Yes
Unidimen-sionality is assumed in all measures	Yes	Yes	Yes	Yes	Yes
Normalized Multivariate Kurtosis	23.3	23.6	9.9	18.8	9.9

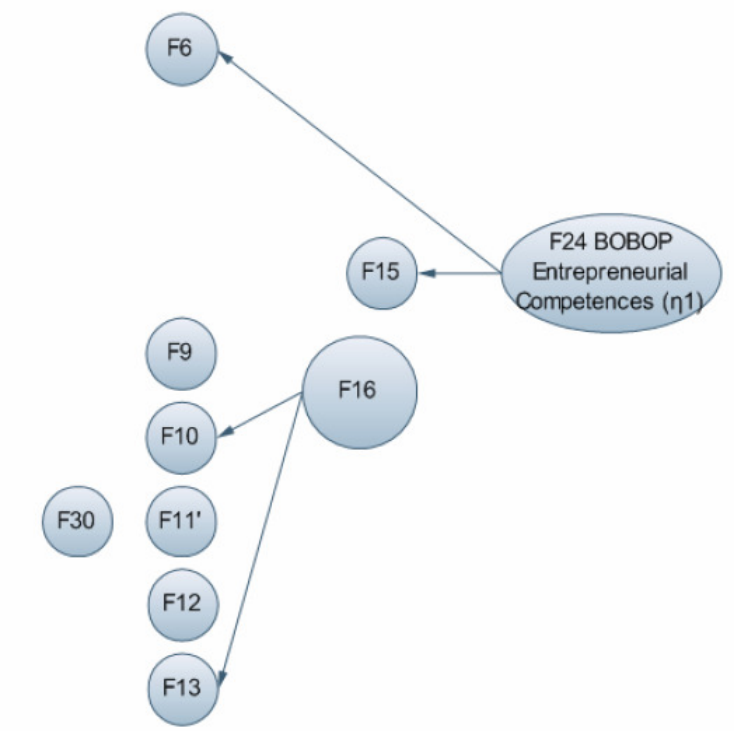
The measurement models fail to reject the null hypothesis (H_0) that postulates that the population covariance matrix is equal to the restricted covariance matrix implied by the model. In contrast to traditional statistical procedures, the researcher hopes not to reject H_0 (Byrne, 2006). Although only robust methods are reported, maximum likelihood estimates also fail to reject H_0.

Figures 5 to 8 show the independent respecified measurement models. In these drawings, although all independent variables are allowed to correlate, no correlating arrows are drawn in order to keep them simple.

Empirically, as shown in Figure 5, there was no support for a unique construct behind Entrepreneurial Orientation, Marketing Orientation and Network Resource Capital. Risk taking and proactiveness in decision making, from the Entrepreneurial Orientation construct, and all Network Resource Capital variables could not be retained in the measurement model without violating unidimensionality of the measures. The respecified model showed a good fit, with $p = 0.31$.

Interestingly, Family and Social Support resulted in two different constructs: first, a construct related to the support of relatives and friends in the every day operations, and; second, a construct related to consultancy and training support from relatives and friends. Although Network Resource Capital constructs will not be used in this research in hypotheses testing because of their lack of loading in the Entrepreneurial Competences factor, they can be used in further research due to their good reliability and conceptual relevance (see also Table 7).

Figure 5. F24 Measurement Model BOBOP Entrepreneurial Competences



Where,

F6 = Market Innovation;

F9 = Government Support;

F10 = Institutional Support;

F11' = Family and Social Support (every day operations);

F30 = Family and Social Support (consultancy and training);

F12 = Strategic Alliances;

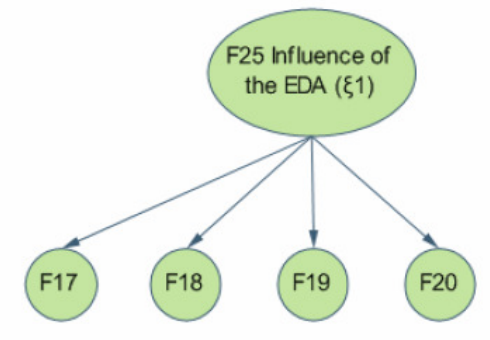
F13 = Reputation;

F15 = Market Orientation;

F16 = Network Resource Capital;

The measurement model for the Influence of the EDA shown in Figure 6, presented a very good fit with little respecification. This model showed a good fit, with $p = 0.14$.

Figure 6. F25 Measurement Model Influence of the EDA



Where,

F17 = Learner Readiness;

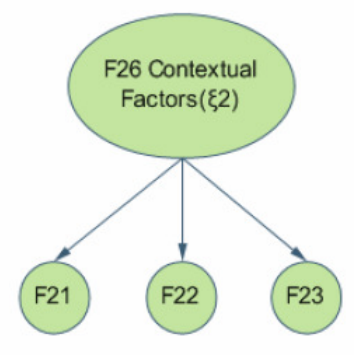
F18 = Positive Personal Outcomes;

F19 = Negative Personal Outcomes;

F20 = Perceived Content Validity;

Data in the Environmental Hostility scale was recoded in order to keep a positive relationship in the model. Little respecification was needed, as shown in Figure 7. This model showed a good fit, with $p = 0.46$.

Figure 7. F26 Measurement Model Contextual Factors



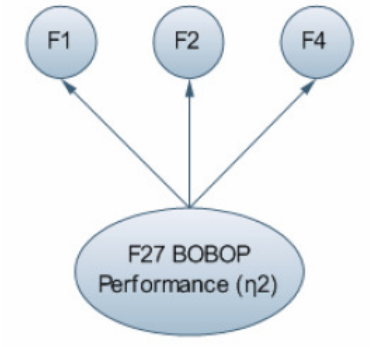
Where,

F21 = Environmental Hostility; F23 = Economic Activity Index;

F22 = Infrastructure availability;

In the Performance construct, shown in Figure 8, two latent variables had to be dropped: Growth and Other Performance Measures. This model showed a good fit, with $p = 0.87$.

Figure 8. F27 Measurement Model BOBOP Performance



Where,

F1 = Financial Performance; F2 = Wellbeing;

F4 = Longevity;

Although, ideally, respecification should not be necessary, it contributes to a better understanding of the relationships among the constructs we are trying to measure and helps improve their validity and reliability (Anderson & Gerbing, 1988).

At the end, 33 observed variables were kept, with 13 first-order latent factors, and 2 second-order latent factors. Descriptive statistics and Pearson correlations between first-order constructs are shown in Table 6. As expected, some correlations between Influence of the EDA factors and Entrepreneurial Competences, and between the latter and Performance resulted positive and significant. In the same way, the correlation between market innovation and market orientation were positive and significant. Furthermore, most correlations are relatively small and non significant, giving evidence for discriminant validity. Since no significant correlations were found between factors and descriptive variables such as gender and sector, no control variables were used in the model.

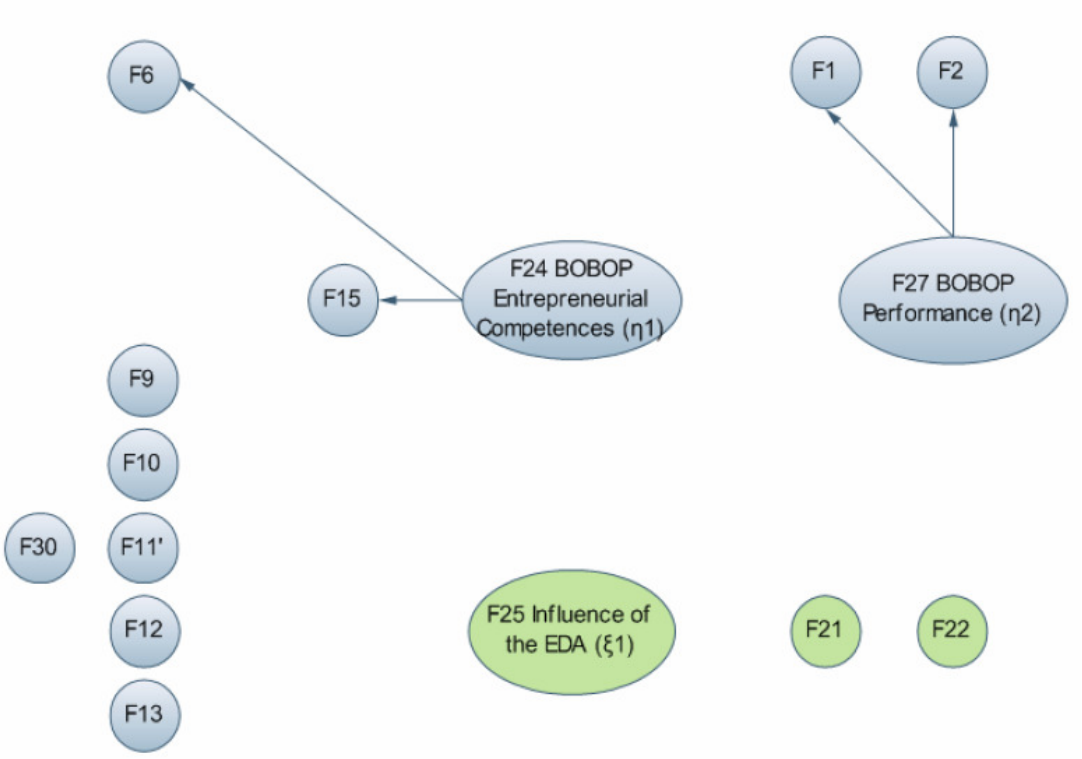
Table 6. Descriptive Statistics and Pearson Correlations among First-Order Factors

Factor	Mean	SD	Sk	Kurt	F2	F1	F6	F21	F15	F17	F18-20	F9	F10	F11'	F30	F22	F12
F2	25.59	3.60	- 1.68	5.90													
F1	19.50	6.33	- 1.20	1.06	0.418**												
F6	11.75	5.31	- 0.50	- 0.59	0.119	0.367**											
F21	9.22	5.55	0.21	- 1.17	0.024	- 0.004	0.275**										
F15	24.60	4.94	- 1.94	5.45	0.126	0.185	0.366**	- 0.043									
F17	12.39	4.44	- 0.42	- 0.28	0.170	0.220*	0.369**	0.125	0.202*								
F18-20	16.63	3.62	- 1.20	0.85	0.158	0.144	0.305**	0.244*	0.236*	0.192*							
F9	4.79	4.65	1.74	2.30	0.137	0.167	0.129	0.029	0.165	0.026	0.169						
F10	5.95	6.29	2.32	4.96	0.008	0.136	0.070	0.109	0.013	0.120	0.060	0.101					
F11'	12.34	6.21	- 0.40	- 1.20	0.138	0.164	0.160	- 0.155	0.128	- 0.009	- 0.079	0.224*	0.142				
F30	8.85	8.27	1.30	0.36	0.102	0.054	0.120	0.105	0.003	0.229*	- 0.069	0.161	0.085	0.319**			
F22	15.28	4.82	- 1.09	0.47	0.144	0.056	0.037	- 0.197*	0.039	0.064	0.105	0.174	0.013	0.187	0.041		
F12	1.63	3.04	2.71	7.67	- 0.132	0.016	0.026	- 0.018	- 0.014	0.167	- 0.202*	0.117	0.214*	0.060	0.001	- 0.009	
F13	1.10	2.25	4.04	21.05	0.108	0.052	0.062	0.030	0.023	0.106	0.031	0.217*	0.146	0.109	0.136	0.048	0.139

*$p < 0.05$; **$p < 0.01$.

Once independent models were defined, all of them got together in the complete measurement model shown in Figure 9. Based on the Lagrange Multiplier tests, several problematic items were dropped and five covariates between standard errors were released. No correlating arrows were traced in order to keep the drawing simple. This model showed a good fit, with $p = 0.23$.

Figure 9. Complete Measurement Model



Where,

F1 = Financial Performance;

F2 = Wellbeing;

F6 = Market Innovation;

F9 = Government Support;

F10 = Institutional Support;

F11' = Family and Social Support (every day operations);

F30 = Family and Social Support (consultancy and training);

F12 = Strategic Alliances;

F13 = Reputation;

F15 = Market Orientation;

F21 = Environmental Hostility;

F22 = Infrastructure availability.

It is important to explain that although several measures did not work as expected due to multidimensionality and error term correlation, the main variables were retained in the final measurement model. Market Orientation and Market Innovation are both blended in the Entrepreneurial Competences measure, which is expected to act as a mediating variable in the effect of the EDA on performance. On the other hand, although the Influence of the EDA factor did not resulted in a second-order factor, it worked well as a first-order factor. Besides, the Performance factor included only two dimensions from the five considered in the initial model; however, those remaining dimensions were the most relevant ones: financial performance and wellbeing. Finally, the Contextual Factors construct resulted in two independent measures: environmental hostility and infrastructure availability.

The estimation procedure was performed with complete data because the goodness-of-fit resulted better in this way than when pairwise analysis was applied. No imputation methods were used in order to avoid reducing variability in data. Six cases were dropped from the sample due to missing data. EQS identifies multivariate

outliers; because of this situation, cases 8 and 13 were dropped in the final estimation. At the end, 101 cases were used in the estimation of the measurement model.

Construct validity

Evidence for convergent and discriminant validity is demonstrated by the factor loadings and reliability coefficients in Table 7. Only are factor loadings grater than 0.45 shown. Numbers of corresponding items in the survey format are listed in column 1. Although Cronbach Alpha coefficient is the most widely known index of internal consistency reliability, the Rho coefficient provides a better estimate in multifactor models (Byrne, 2006).

Three factors revealed a poor reliability (F12, F13 and F17). However, this is not a cause for concern due to the fact that overall composite reliability of the measurement model was satisfactory (Rho = 0.87), as shown in Table 5. No multi-colinearity problems were found.

Table 7. Factor Loadings for the First-Order Factors

Item	F2 Well-being	F1 Financial Performance	F6 Market Innovation	F21 Environmental Hostility	F15 Market Orientation	F17 Learner Readiness	F18-20 Positive, Negative, Content Validity	F9 Government Support	F10 Institutional Support	F11' Family and Social Support	F30 Family and social Support	F22 Infrastructure	F12 Strategic Alliances	F13 Reputation
Rho	0.79	0.93	0.93	0.75	0.7	0.58	0.72	0.81	0.83	0.89	0.92	0.75	0.62	0.47
1	0.7035													
2	0.7072													
7	0.7231													
13		0.8324												
17		0.9056												
20		0.8976												
23			0.5312											
24			0.6451											
30				0.7925										
31				0.7224										
39					0.6588									
47					0.7152									
50					0.7539									
53						0.6589								
54						0.5324								
60							0.6091							
64							0.7435							
69								0.7771						
72								0.7473						

Item	F2 Well-being	F1 Financial Perfor-mance	F6 Market Innovation	F21 Environ-mental Hostility	F15 Market Orien-tation	F17 Learner Readi-ness	F18-20 Positive, Negative, Content Validity	F9 Govern-ment Support	F10 Institu-tional Support	F11' Family and Social Support	F30 Family and social Support	F22 Infra-structure	F12 Strategic Alliances	F13 Repu-tation
Rho	0.79	0.93	0.93	0.75	0.7	0.58	0.72	0.81	0.83	0.89	0.92	0.75	0.62	0.47
77									0.6097					
78									0.9401					
80									0.9002					
84										0.8128				
85										0.8169				
88											0.8862			
90											0.9192			
91											0.8555			
94												0.7858		
98												0.7710		
102													0.7718	
103													0.7688	
104														0.4766
105														0.7924

Method of rotation: Varimax.

Discriminant validity in terms of factors reveals the extent to which independent measures of different factors are correlated; these values should be negligible. In order to test for discriminant validity, a model in which factors correlate freely (that in Figure 9) is compared with one in which they are perfectly correlated, that is to say, covariances between all factors are set to 1. The larger the discrepancy between the Chi-Square values, the stronger the evidence for discriminant validity. This procedure is known as the Multitrait - Multimethod Model (MTMM) approach (Byrne, 2006). In this case, such a discrepancy resulted in 493, with a difference of 47 degrees of freedom, which is highly significant ($p < 0.001$). Thus, there is strong evidence for discriminant validity.

Common method bias

Common method bias is the extent to which different traits or constructs are measured by using the same survey instrument. In deed, common method bias reveals the part of discriminant validity related to method effects, and it can be tested by comparing a model in which method factors are freely correlated with one in which method factors are specified as uncorrelated (Byrne, 2006; Meade, Watson & Kroustalis, 2007). In this case, when a common factor (representing the common method effect) is included in the measurement model, the model fit is improved significantly, giving evidence of common method bias in the sample. Consequently, Pearson correlations might be inflated.

Power analysis and sample size

In spite of having evidence for a well fitting measurement model (both with maximum likelihood and robust methods), a power analysis is needed due to the relatively small sample. Although, over the years, several rules of thumb have been proposed, such as 5-10 observations per parameter, no less than 100, and so on, there is no rule of thumb that applies to all situations. In fact, sample size requirements depend strongly on many factors, including the size of the model, distribution of the variables, amount of missing data, reliability of the variables, and strength of the relationships among the variables (Muthén & Muthén, 2002).

In order to determine power in this research, the discrepancy function is used as the non-centrality parameter in a non-central Chi-Square distribution (Miles, 2003). The non-central Chi-Square distribution function NCDF.CHISQ in SPSS is used to find the power:

$$\text{Power} = 1 - \text{NCDF.CHISQ}(cv, df, ncdf) \qquad (3)$$

Where:

cv = critical value for a Chi-Square distribution.

df = degrees of freedom of the model.

ncdf = discrepancy function (n-1).

The critical value for the Chi-Square distribution is found in SPSS by using IDF.CHISQ (1-α,df). Using $\alpha = 0.01$, and 439 degrees of freedom, the critical value is 510.86. The discrepancy function (from the EQS output file) after 20 iterations is 4.5828, and; n = 101 cases. Substituting these values in equation 3, the resulting power of the test is 0.999, and the probability of accepting a false model (Type II error) is almost cero ($p < 0.001$), concluding that the sample size is enough to test the goodness-of-fit of the measurement model.

V.3. Structural Model

Once the goodness-of-fit of the measurement model is satisfactory, the next step is going forward to hypotheses testing. This is achieved by adding some restrictions to the measurement model in the EQS program (see lines 74 and 75 in Appendix F), which represent equations 1 and 2. Note that the second-order factor F26 (Contextual Factors) is replaced with two first-order factors F21 (Environmental Hostility) and F22 (Infrastructure availability). The structural equations must be, consequently, modified in the following way:

$$\eta 1 = \gamma 11\ \xi 1 + \gamma 12\ \xi 2 + \gamma 13\ \xi 3 + \zeta 1 \quad (4)$$

$$\eta 2 = \beta 21\ \eta 1 + \gamma 21\ \xi 1 + \gamma 22\ \xi 2 + \gamma 23\ \xi 3 + \zeta 2 \quad (5)$$

Where,

$\eta 1$ = BOBOP Entrepreneurial Competences (endogenous factor),

$\eta 2$ = BOBOP Performance (endogenous factor),

$\xi 1$ = Influence of the EDA (exogenous factor),

$\xi 2$ = Environmental Hostility (exogenous factor),

$\xi 3$ = Infrastructure Availability (exogenous factor),

$\gamma 11$ = Relationship between BOBOP Entrepreneurial Competences and Influence of the EDA (Hypothesis 1),

$\gamma 21$ = Relationship between BOBOP Performance and Influence of the EDA (Hypothesis 2),

$\beta 21$ = Relationship between BOBOP Performance and BOBOP Entrepreneurial Competences (Hypothesis 3),

$\gamma 12$ = Relationship between BOBOP Entrepreneurial Competences and Environmental Hostility (Hypothesis 4a),

$\gamma 13$ = Relationship between BOBOP Entrepreneurial Competences and Infrastructure Availability (Hypothesis 4b),

$\gamma 22$ = Relationship between BOBOP Performance and Environmental Hostility (Hypothesis 5a),

$\gamma 23$ = Relationship between BOBOP Performance and Infrastructure Availability (Hypothesis 5b),

$\zeta 1$ = Disturbance of BOBOP Entrepreneurial Competences,

$\zeta 2$ = Disturbance of BOBOP Performance.

In the same way, Hypothesis 4 and 5 are replaced by:

Hypothesis 4a (γ12). *The more favorable the Environmental Hostility, the entrepreneurial competences of the BOBOP will be.*

Hypothesis 4b (γ23). *The more favorable the Infrastructure Availability, the better the entrepreneurial competences of the BOBOP will be.*

Hypothesis 5a (γ22). *The more favorable the Environmental Hostility, the better the performance of the BOBOP will be.*

Hypothesis 5b (γ23). *The more favorable the Infrastructure Availability, the better the performance of the BOBOP will be.*

Unstandardized estimates, robust standard errors and the corresponding *t* statistic for the structural model are shown in Table 8. Significant estimates are identified for $\alpha = 0.05$.

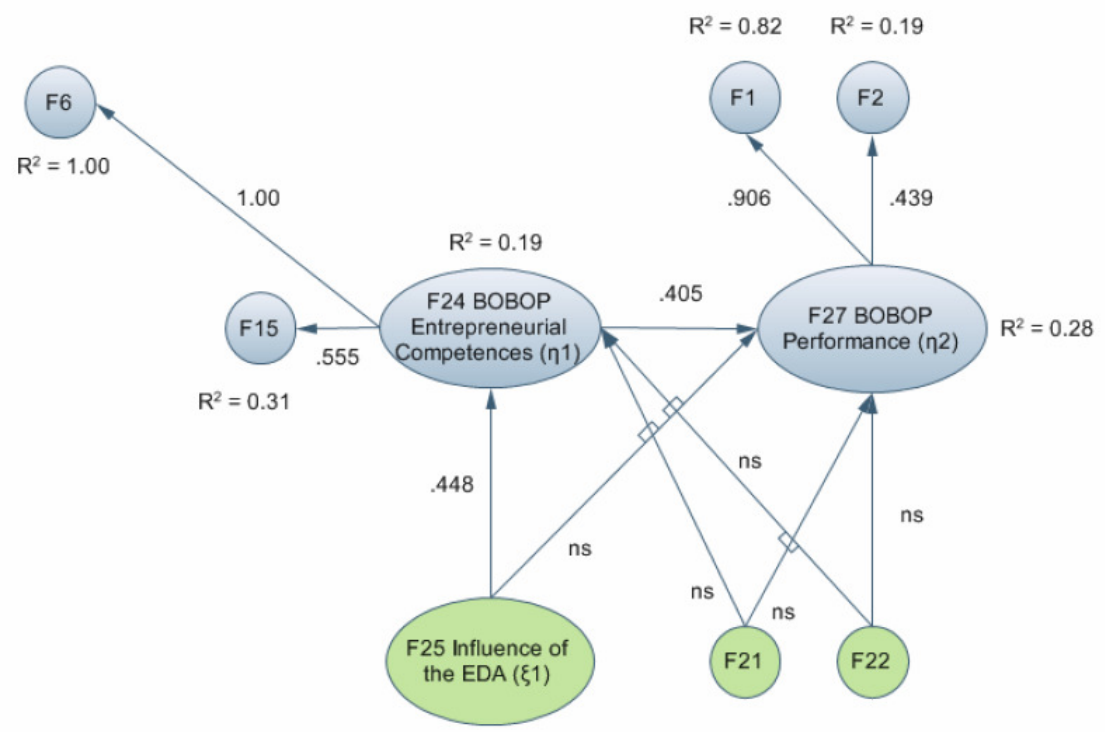
Table 8. Unstandardized Estimates and Significance

	Unstandardized Estimate	Robust Standard Error	*t* Statistic	Significant (α = 0.05)
F24 → F27	0.429	0.204	2.10	Yes
F21 → F27	- 0.310	0.181	- 1.71	No
F22 → F27	0.016	0.145	0.11	No
F25 → F27	0.219	0.230	0.95	No
F21 → F24	- 0.078	0.153	- 0.51	No
F22 → F24	0.018	0.144	0.13	No
F25 → F24	0.497	0.159	3.13	Yes
F24 → F15	0.594	0.195	3.05	Yes
F24 → F6	2.556	0.626	4.08	Yes
F27 → F2	0.404	0.156	2.59	Yes
F27 → F1	1.366	0.376	3.63	Yes

The structural model, with significant standardized estimates is shown in Figure 10. All criteria of fit assessment and statistical assumptions are the same that those applied to the measurement model.

Variation in the Chi-Square is not significant, giving evidence of good fit (Chi-Square = 474; df = 449; p = .19; NNFI = .98; CFI = .98, and; Rho = .86). On the other hand, the EQS output did not report collinearity problems.

Figure 10. Structural Model with Significant Standardized Estimates



Where,

F1 = Financial Performance;

F2 = Wellbeing;

F6 = Market Innovation;

F15 = Market Orientation;

F21 = Environmental Hostility;

F22 = Infrastructure availability.

As shown in Figure 10, 28% of the variance in performance and 19% of the variance in entrepreneurial competences was accounted by the model.

Power is estimated by using the same approach that was applied for the measurement model. The critical value for the Chi-Square distribution is found in SPSS by using IDF.CHISQ (1-α,df). Using $\alpha = 0.01$, and 449 degrees of freedom, the critical value is 521.64. The discrepancy function (from the EQS output file) after 26 iterations is 4.70918, and; n = 101 cases. Thus, the power of the test is 1, and the probability of accepting a false model (Type II error) is cero ($p < 0.01$), concluding that the sample size is enough to test the goodness-of-fit of the measurement and structural models.

V.4. Hypotheses Testing

In terms of the hypotheses proposed in this research, H_1 and H_3 were supported by the data. Interestingly, both direct and indirect effects of contextual factors on entrepreneurial competences or performance were not significant.

Hypothesis 1 (γ11). *The influence of the EDA is directly and positively related to the entrepreneurial competences of the BOBOP.*

Data gave support for this hypothesis. More precisely, data can not reject this hypothesis, which means that a good influence of the EDA implies that its intervention has provoked relevant changes in the mindset and attitudes of the

entrepreneurs in the BOBOP and that those changes improve significantly their entrepreneurial competences (standardized estimate = .448). What really matters are not the qualifications of the EDA but the quality of its particular intervention, according to the profile and particular circumstances of the BOBOP.

Hypothesis 2 (γ21). *The influence of the EDA is directly and positively related to the performance of the BOBOP*.

This hypothesis was rejected by the data, against the argument that a good intervention of the EDA will be of advantage to the BOBOP, regardless of the transferring of learning (standardized estimate was not significant).

Hypothesis 3 (β21). *The better the entrepreneurial competences of the BOBOP, the better its performance will be*.

This hypothesis can not be rejected, giving support for the idea that more and better entrepreneurial competences will translate in better performance (standardized estimate = .405). These findings demonstrate entrepreneurial competences (market innovation and market orientation) is a mediator factor in the effect of the influence of entrepreneurial development agencies on performance.

The following hypotheses were not supported by the data (standardized estimates were not significant).

Hypothesis 4a (γ12). *The more favorable the Environmental Hostility, the entrepreneurial competences of the BOBOP will be.*

Hypothesis 4b (γ23). *The more favorable the Infrastructure Availability, the better the entrepreneurial competences of the BOBOP will be.*

Hypothesis 5a (γ22). *The more favorable the Environmental Hostility, the better the performance of the BOBOP will be.*

Hypothesis 5b (γ23). *The more favorable the Infrastructure Availability, the better the performance of the BOBOP will be.*

Direct effects of contextual factors on performance and entrepreneurial competences were not identified in this research.

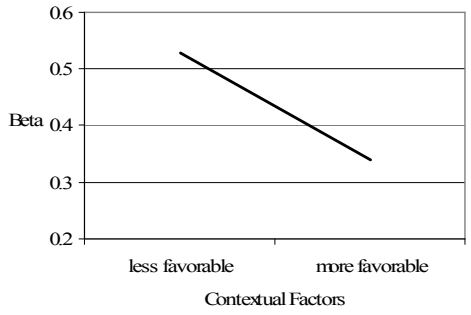
Moderating effects

Moderating effects of contextual factors (environmental hostility and infrastructure availability) on the impact of the influence of the EDA on entrepreneurial competences were significant as shown in Figure 11, giving support for H_6.

Hypothesis 6. *The contextual factors have a moderating effect on the relationship between the influence of the EDA and the entrepreneurial competences of the BOBOP.*

Standardized coefficient beta when regressing Entrepreneurial Competences on the Influence of the EDA was significantly higher under less favorable Contextual Factors than under more favorable conditions. Nonetheless, the impact of such influence is positive and significant in both contextual situations.

Figure 11. Moderating Effects of Contextual Factors on the relationship between the Influence of the EDA and Entrepreneurial Competences

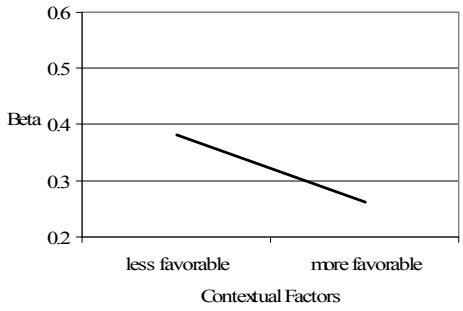


It was also identified a moderating effect of Contextual Factor on the relationship between Entrepreneurial Competences and Performance, giving support for H_7.

Hypothesis 7. *The contextual factors have a moderating effect on the relationship between the entrepreneurial competences of the BOBOP and its performance*.

The less favorable the contextual conditions, the grater the effect of Entrepreneurial Competences on Performance. Figure 12 shows the change in standardized coefficient beta. The influence of the EDA seems to be more important under less favorable than under more favorable contextual factors.

Figure 12. Moderating Effects of Contextual Factors on the relationship between Entrepreneurial Competences and Performance



Other interesting moderating effects were found for the years of education of the entrepreneur and the kind of support the entrepreneur had received from the agency. The impact of the intervention on the entrepreneurial competences of the entrepreneur is positive and significant for those entrepreneurs with high-school education or less (β = .657), and it is not significant for those with under graduate and graduate education.

On the other hand, receiving training impacts positively and significantly on the entrepreneurial competences of the entrepreneur (β = .505); receiving training and developing consultancy projects improves even more that positive impact (β = .572), but; only developing consultancy projects, without receiving any training, has no impact (β = .072) on the entrepreneurial competences of entrepreneurs.

Finally, gender and previous entrepreneurial training had no relationship between the influence of theEDA and entrepreneurial competences, nor between the latter and performance.

V.5. Discussion

Entrepreneurial perspectives postulate the possibility of enhancing entrepreneurial competences through the intervention of EDAs as a means to alleviate poverty and inequality in emerging economies. However, developing entrepreneurial competences at the base of the pyramid appears to be problematic. The question is whether EDAs really impact significantly on performance and entrepreneurial competences of BOBOPs. Evidence from this research suggests that the answer is yes.

The Resource Based View theory explains that differences on performance among firms derive from the development of sustained competitive advantages based on heterogeneous and immobile resources. However, entrepreneurs are limited in their ability to manipulate all the attributes and characteristics of their firms, making some firm resources imperfectly imitable and thus potentially sources of sustained competitive advantage (Barney, 1991). This limitation in the ability of BOBOPs to manipulate their attributes (including entrepreneurial competences) can be overcome by the intervention of EDAs.

As a complementary approach, the Resource-Advantage Theory of Competition (RATC) explains that, in market-based economies, innovative firms and

individuals are automatically rewarded because such innovation is often a source of sustainable comparative advantage that enable them to offer products and services with value for some market segments (Hunt & Morgan, 1995). This research offers support for this statement by identifying two main dimensions of entrepreneurial attitudes that impact positively and significantly on performance: market-product innovation, and market orientation.

Market-product innovation is related to a constant and drastic change in lines of products and services, whereas market orientation is related to a quickly response to the actions of competitors, a constant measurement of satisfaction of clients, and the identification of specific clients to whom offer products and services derived from a new competitive advantage. Thus, a market-based attitude is determinant in the success of BOBOPs, and EDAs can help BOBOPs enhance that attitude.

Although contextual factors did not present direct effects on entrepreneurial competences or performance, they showed moderating effects on the relationship between the influence of the EDA and entrepreneurial competences and between the latter and performance. Apparently, when facing unfavorable contexts, entrepreneurial competences are especially important to improve performance, and consequently, entrepreneurs in the BOP appear to be more receptive to the transfer of learning of EDAs.

Finally, the model and methodology proposed in this research allow us to assess the impact of EDAs on entrepreneurial competences and performance of

BOBOPs, in emerging economies. They can be used to evaluate the efficacy of specific programs oriented to the enhancing of entrepreneurial competences at the base of the pyramid, in emerging economies. The great amount of resources applied to this kind of initiatives justifies the effort required to measure the impact of such programs. The model and methodology presented in this research can help importantly in this purpose: the objective of the research has been accomplished.

V.6. Summary

As expected, the initial model required respecification in order to fit the data and keep unidimensionality of measures. The entrepreneurial competences latent variable resulted in a second-order factor behind market innovation and market orientation. The other dimensions of entrepreneurial orientation (risk taking and proactiveness in decision making) could not be retained in the measurement model without violating unidimensionality. The same happened with all network resource capital variables, three dimensions of performance (growth, longevity and other performance measures) and one of contextual factors (economic activity index). After respecification of the initial model, a good fit was achieved in both the measurement and structural submodels. Market-product innovation and market orientation, two entrepreneurial competences widely studied in developed economies and recognized as key factors in the success of business are also important for BOBOPs in emerging economies.

Chapter VI

CONCLUSIONS

VI.1. Introduction

The objectives of the research were achieved. Although only two hypotheses were not rejected by the data, findings support the main proposition of the research: EDAs impact positively and significantly on performance and entrepreneurial competences of BOBOPs. Also, an empirical model and a methodology designed for testing such impacts were developed.

VI.2. Conclusions

Through the estimation of an empirical model, it was found that the influence of EDAs impacts positively and significantly the entrepreneurial competences of BOBOPs, specifically market orientation and market innovation. Besides, improving entrepreneurial competences impacts positively and significantly on the performance of BOBOPs. A direct effect of the influence of the EDA on the performance of entrepreneurs was not found. That is to say, there is a mediating effect of entrepreneurial competences, particularly, market innovation and market orientation, on the relationship between the influence of the EDA and performance.

Moderating effects of contextual factors were found on the relationship between the influence of the EDA and entrepreneurial competences, as well as on the

relationship between entrepreneurial competences and performance. A greater impact was found on both relationships when contextual factor were less favorable. Moderating effects of years of schooling on the relationship between the influence of the EDA and entrepreneurial competences were also found. The impact of the intervention resulted positive and significant for those entrepreneurs with high-school education or less, but not significant for those with under graduate and graduate education.

Unexpectedly, there was no support for including network resource capital as a component in the entrepreneurial competences construct. This condition deserves further research. In the same way, no direct impacts of contextual factors on entrepreneurial competences and performance were found.

In terms of RBV theory and RATC, the contribution of this research to the theory of management is that the development of entrepreneurial attitudes (such as market innovation and market orientation) allows business organizations at the base of the pyramid to develop competitive advantages to better compete in the marketplace, in emerging economies, and improve performance, both in financial and wellbeing terms. These entrepreneurial attitudes are especially important under unfavorable contextual conditions. A significant improvement of entrepreneurial competences of BOBOPs can be achieved through the intervention of EDAs.

Market-product innovation and market orientation, two entrepreneurial competences widely studied in developed economies and recognized as key factors in the success of business are also important for BOBOPs in emerging economies.

VI.3. Implications

Enhancing entrepreneurial competences in BOBOP impacts positively and significantly in their performance, in terms of both financial and wellbeing outcomes. These entrepreneurial competences, specifically, market orientation and market innovation, can be effectively improved through the intervention of entrepreneurial development agencies. The effect of this intervention is particularly important for less educated entrepreneurs, and for those entrepreneurs under unfavorable contextual conditions.

The lack of a direct impact of the influence of the EDA on performance implies that those activities not related to the enhancing of referred entrepreneurial orientations do not impact, actually, on performance, and might be reoriented.

The main contribution of this research is to offer a model and a methodology to assess the impact of EDAs on performance of business organizations at the base of the pyramid, in emerging economies. This methodology might allow researchers, practitioners and policy makers to evaluate the impact of particular training activities that aim to improve the performance of such businesses through the enhancing of entrepreneurial competences. The findings of this research emphasize the importance

of training in market innovation and market orientation as a means to significantly improve performance of BOBOPs. The efforts applied to this kind of support will contribute significantly to the financial and wellbeing outcomes of small businesses.

Improving entrepreneurial competences at the BOP can reduce the risks of creating new dependencies when exogenous development models are introduced in low income segments. Detonating a process of social inclusion is a key issue in reducing and eradicating poverty and inequality in emerging economies, and improving entrepreneurial competences can contribute significantly in that goal.

VI.4. Limitations

A limitation of the research is that only entrepreneurs participating in the Social Incubators System of the ITESM were included in the sample. Besides, due to the fact that data were collected with the support of the operating staff in each Social Incubator, resources were not available to implement a strategy to address non-response bias. Finally, common method bias was found in the final sample.

VI.5. Further Research

Overcoming the limitations of this research, further studies might include entrepreneurs participating in different types of entrepreneurial development agencies, from public, private or social sectors; include a strategy for non-response bias addressing; use different methods for different factors in order to avoid common

method bias, and; include measures of entrepreneurial techniques. Besides, a panel study could give a more deep insight of the evolution of entrepreneurial competences and the impacts of entrepreneurial development agencies on performance.

Finally, the role of network resources capital in entrepreneurial competences and performance can be more deeply studied. It would be interesting to test for effects of family support on performance and several relationships among relevant variables in enhancing performance of entrepreneurs at the BOP.

VI.6. Summary

Results gave evidence of a positive and significant impact of entrepreneurial development agencies on performance at the base of the pyramid, through the mediating effect of entrepreneurial competences, particularly, market orientation and market innovation. Contextual factors, specifically, environmental hostility and infrastructure availability, showed a moderating effect on the relationship between the influence of entrepreneurial development agencies and entrepreneurial competences, and between entrepreneurial competences and performance. Those relationships resulted better under less favorable contexts. Improving entrepreneurial competences can help detonate a process of social inclusion in low income segments that contribute to reduce and eradicate poverty and inequality.

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GLOSSARY

Business Organizations at the Base of the Pyramid (BOBOPs). They are enterprises owned by one or more entrepreneurs belonging to the BOP. They are usually small businesses, with few employees and sales; commonly transact in an informal economy; frequently rely solely on entrepreneur-family workforce, and; face serious limits to grow up. The term BOBOP is based on the concept of *bottom of the pyramid*, proposed by Prahalad and Hart (2002), who saw people in low income segments as potential consumers for multinational corporations. Rather, the term BOBOPs in this research refers to people in low income segments acting as entrepreneurs.

Contextual Factors. They are those environmental circumstances that facilitate or difficult the operations of BOBOPs.

Economic Activity Index. It is the volume of market transactions that occur in the particular municipality and industry of the entrepreneur.

Entrepreneurial Competences. They are those capacities upon which competitive advantages can be built in order to successfully compete in the market, make profits and grow steadily

Entrepreneurial Development Agencies (EDAs). They are individuals or institutions, from the private or the public sector, that aim to help *business organizations at the base of the pyramid* (BOBOPs) improve entrepreneurial competences in order to enhance performance.

Entrepreneurial Orientation. It is the willingness of the firm to take business-related risks, to favor change and innovation in order to obtain a competitive advantage, and to compete aggressively with other firms.

Environmental Hostility. It is the degree of risk and stress perceived by the entrepreneur in the competitive environment.

Family and Social Support. It is the sum of network resources derived from family and acquaintances that help the entrepreneur in daily operations and offer assistance in financial, legal or technical matters.

Financial Performance. It is the financial outcome of BOBOPs, measured as the satisfaction or dissatisfaction that entrepreneur expresses about several financial performance criteria.

Government Support. It is the sum of network resources derived from the relationships of the entrepreneur with governmental offices.

Growth. It is the number of full-time and part-time jobs created in the last year. Full-time jobs are those in which people spend 6 hours a day or more, while part-time jobs are those in which people spend less than 6 hours a day.

Influence of the EDA. It is the adequacy of the intervention of the EDA in the BOBOP.

Infrastructure availability. It is the extent to which the entrepreneur perceives the infrastructure facilitates his business operations.

Institutional Support. It is the sum of network resources derived from the relationships of the entrepreneur with non-governmental institutions, different from the Social Incubators of ITESM.

Learner Readiness. It is the extent to which individuals are prepared to enter and participate in training.

Longevity. It is the number of years in continuous operation since the establishment of the enterprise.

Market Innovation. It is the capacity of the firm to develop a higher than average number of new products or new markets.

Market Orientation. It is the disposition of the firm to deliver higher value to its costumers continuously. It entails the commitment to continuous information gathering and coordination of customers' needs, competitors' capabilities and the provisions of other significant market agents and authorities.

Negative Personal Outcomes. It is the extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes.

Network Resource Capital. It is the sum of actual and potential resources embedded within, available through, and derived from a network of relationships. It includes supporting networks in government, institutional, family and social environments, as well as those derived from strategic alliances, and reputation.

Other Performance Measures. It is a first-order factor that takes into account other dimensions of performance of BOBOPs, such as distinction between the familiar and the business cash flow, and respect for people and environment.

Perceived Content Validity. It is the extent to which trainees judge training content to accurately reflect job requirements.

Performance. It is the business outcome of BOBOPs.

Positive Personal Outcomes. It is the extent to which applying training on the job leads to outcomes that are positive for the individual.

Proactiveness in Decision Making. It is the organizational pursuit of favorable business opportunities and an aggressive behavior directed at rival firms.

Reputation. It is the sum of network resources derived from recognition and collaborative relationships with innovation purposes.

Risk Taking. It is the willingness of entrepreneurs to engage in calculated business-related risks.

Strategic Alliances. It is the sum of network resources derived from alliances with commercial and technological purposes.

Wellbeing. It is the degree of satisfaction the entrepreneur manifests on several aspects of his/her life, such as having access to health and education, being free to take decisions and actions, and the possibility of helping others.

Appendix A. Support Letter from the Social Incubators System of ITESM

TECNOLÓGICO DE MONTERREY

Monterrey, NL., a 5 de Noviembre de 2008

Ing. René Díaz Pichardo
Estudiante del Doctorado en Filosofía en Administración
EGADE – TEC de Monterrey, Campus Monterrey

Estimado René,

Con base en la reunión que sostuvimos en días pasados referente al desarrollo de tu disertación doctoral con el tema: "Aliviando la pobreza a través de perspectivas empresariales: impacto de las agencias de desarrollo empresarial en el desempeño de las empresas en la base de la pirámide", me es grato confirmarte nuestro interés en colaborar en dicha investigación, dando las facilidades necesarias para recabar los datos pertinentes entre las empresas participantes en las Incubadoras Sociales del ITESM, a nivel nacional, con el fin de estudiar las relaciones que propones en tu trabajo de disertación doctoral. Queda entendido que los datos recabados y la información proporcionada se manejará en forma estrictamente confidencial y, de solicitarse así, se utilizará un pseudónimo para referirse a la institución.

En conformidad con los reglamentos aplicables, se extiende la presente para los fines a que haya lugar.

Atentamente

Mtro. Jairo Abraham Ruiz Nava
Director de Incubadoras Sociales y CCA
Vicerrectoría de Desarrollo Social

Campus Monterre
Eugenio Garza Sada 250
64849, Monterrey, N.L., Méxic
Tel: 52/81 8358 200

Appendix B. Preliminary Survey Instrument

Datos Generales

Nombre de la empresa _____

Nombre del empresario _____

Sexo _____ Edad _____

Escolaridad _____

¿Ha participado en otros medios de desarrollo de capacidades empresariales, distinto de la Incubadora Social? Sí ( ) No ( ) ¿Cuál? _____

Calle y número _____

Municipio _____

Estado _____

Giro de la empresa _____

Principales líneas de negocio _____

_____

Antigüedad de la empresa _____

Número de personas dedicadas a la empresa de tiempo completo _____

Número de personas dedicadas a la empresa de tiempo parcial _____

¿En qué periodo(s) recibió capacitación en la Incubadora Social? _____

_____

¿Qué lo motivó a acercarse a la Incubadora Social? _____

_____

Ventas totales de la empresa en los últimos 12 meses _____

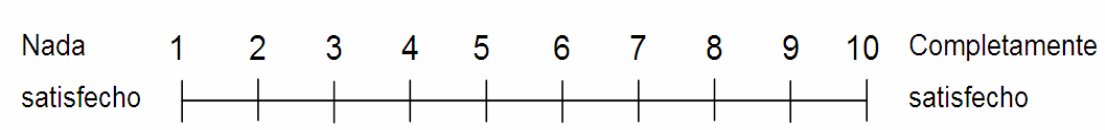
Margen bruto estimado _____ %

¿Cuántos años lleva como empresario? _____

¿Cuántos años tiene de experiencia en su negocio? _____

Bienestar (BOPEWB)

Utilizando una escala del 1 al 10, donde 1 es nada satisfecho y 10 es completamente satisfecho, conteste qué tan satisfecho está en cada uno de los siguientes aspectos:



1.____ Pensando en su propia vida y circunstancias, ¿Qué tan satisfecho está con su vida, como un todo?
2.____ ¿Qué tan satisfecho está con su nivel de vida?
3.____ ¿… con su salud?
4.____ ¿… con sus logros?
5.____ ¿… con sus relaciones personales?
6.____ ¿… con su propia seguridad?
7.____ ¿… sintiéndose parte de su comunidad?
8.____ ¿… con su seguridad futura?
9.____ ¿… con su vida espiritual y su religión?

Desempeño (BOBOPP)

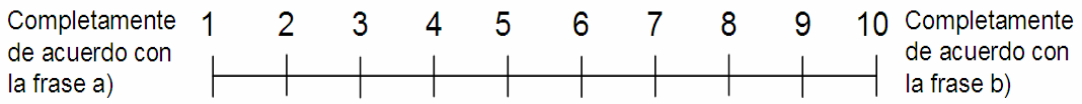
Qué tan satisfecho está con el desempeño de su empresa en cada uno de los siguientes factores:

10.____ Nivel de ventas
11.____ Crecimiento en ventas
12.____ Flujo de caja
13.____ Rendimiento sobre el capital de los inversionistas
14.____ Margen bruto
15.____ Utilidad neta
16.____ Utilidad/Ventas
17.____ Rendimiento sobre la inversión
18.____ Habilidad para hacer crecer el negocio a partir de las utilidades

Competencias empresariales (BOBOEC)

Orientación empresarial

Utilizando la escala del 1 al 10, donde 1 implica un completo acuerdo con la frase a) y 10 un completo acuerdo con la frase b), señale la opción de su preferencia.



19.____ En general, en mi empresa, favorecemos…

a) Comercializar productos y/o servicios que han sido previamente probados y aceptados por el mercado.
b) Comercializar productos y/o servicios nuevos, derivados de la investigación y desarrollo, del liderazgo tecnológico y de la innovación.

20.____ ¿Cuántas nuevas líneas de producto y/o servicio ha comercializado su empresa en los últimos tres años?

a) Ninguna.
b) Muchas.

21.____ ¿Cómo han sido los cambios en las líneas de producto y/o servicios en su empresa, en los últimos tres años?

a) Menores.
b) Drásticos.

22.____ Frente a los competidores, mi empresa…

a) Normalmente, responde a las iniciativas de los competidores.
b) Suele tomar la iniciativa.

23.____ Frente a los competidores, mi empresa…

a) Rara vez es la primera en introducir nuevos productos y/o servicios, técnicas administrativas o sistemas productivos.
b) Muy frecuentemente, es la primera en introducir nuevos productos y/o servicios, técnicas administrativas o sistemas productivos.

24.____ Frente a los competidores, mi empresa…

a) Suele evitar el enfrentamiento, bajo la filosofía de "vivir y dejar vivir".
b) Normalmente, busca "destruir a los competidores".

25.____ En general, en mi empresa…

a) Buscamos minimizar los riesgos, obteniendo rendimientos aceptables.
b) Realizamos proyectos de alto riesgo, con probabilidades de muy altos rendimientos.

26.____ En mi empresa creemos que…

a) Dada la naturaleza del entorno, lo mejor es explorar las oportunidades con cautela, poco a poco.
b) Dada la naturaleza del entorno, es necesario tomar acciones intrépidas para alcanzar los objetivos de la empresa.

Contexto (CF)

Escala de hostilidad ambiental

27.____ El ambiente en que opera mi empresa es…

a) Muy seguro, con pocas amenazas al bienestar y permanencia de mi empresa.
b) Muy riesgoso, un paso en falso puede hacer que mi empresa desaparezca.

28.____ El ambiente en que opera mi empresa es…

a) Rico en inversión y oportunidades de venta.
b) Muy estresante, hostil y duro. Es difícil mantenerse a flote.

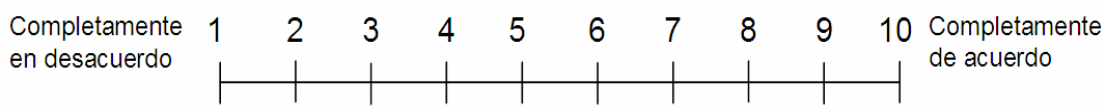
29.____ Mi empresa opera en un ambiente…

a) Fácil de controlar y de manipular a favor de mi empresa; donde hay poca competencia y pocos obstáculos.
b) Donde las iniciativas de mi empresa impactan muy poco, en comparación con las tremendas fuerzas de la competencia, la política o la tecnología.

Competencias empresariales (BOBOEC)

Orientación al mercado

Usando la escala del 1 al 10, donde 1 implica estar completamente en desacuerdo con la frase y 10 completamente de acuerdo, seleccione la respuesta que mejor describa a su empresa.



30.____ La gente de ventas en nuestra empresa comparte entre sí información sobre los competidores.
31.____ Nuestros objetivos de negocio se fundamentan en la satisfacción de nuestros clientes.
32.____ En nuestra empresa, respondemos rápidamente a las acciones de nuestros competidores.
33.____ Medimos y monitoreamos de cerca el nivel de servicio con que satisfacemos las necesidades de nuestros clientes.
34.____ Los principales directivos de nuestra empresa, de todas las áreas, visitan regularmente a nuestros clientes.
35.____ La información sobre nuestros clientes fluye libremente a través de toda la empresa.
36.____ Nuestras ventajas competitivas se basan en entender las necesidades de nuestros clientes.
37.____ Nuestra estrategia de negocio se fundamenta en el objetivo de incrementar el valor que damos a nuestros clientes.
38.____ Medimos frecuentemente la satisfacción de nuestros clientes.
39.____ Ponemos mucha atención al servicio post venta.
40.____ Los directivos discutimos regularmente sobre las fuerzas y debilidades de nuestros competidores.
41.____ En nuestra empresa, entendemos cómo cada empleado contribuye a crear valor para nuestros clientes.
42.____ Cuando vemos una oportunidad para desarrollar una ventaja competitiva, pensamos en clientes concretos a quien ofrecer nuestros productos y/o servicios.
43.____ Compartimos recursos con otras unidades de negocio de la misma empresa.

Influencia de la Agencia de Desarrollo Empresarial (IEDA)

Usando la misma escala del 1 al 10, pensando específicamente en el apoyo recibido por la Incubadora, ¿Qué tan de acuerdo está con las siguientes frases?

Disposición a aprender

44.____ Antes de la intervención de la Incubadora, me quedaba claro cómo esta intervención impactaría en el desempeño de mi empresa.
45.____ Antes de la intervención de la Incubadora, entendía bien cómo afectaría en el desarrollo de mi trabajo en la empresa.
46.____ Antes de la intervención de la Incubadora, tenía expectativas claras sobre los resultados de esta intervención.
47.____ Los resultados esperados de la intervención de la Incubadora estuvieron claros desde el principio.

Percepción de Resultados Positivos

48.____ Si aplicó exitosamente lo que he aprendido durante la intervención de la Incubadora, aumentarán los ingresos de mi empresa.
49.____ Quienes colaboran en mi empresa recibirán más ingresos cuando apliquen los aprendizajes logrados con la intervención de la Incubadora.
50.____ Si no aplico en mi empresa los aprendizajes logrados con la intervención de la Incubadora, difícilmente aumentarán los ingresos de mi empresa.

Percepción de Resultados Negativos

51.____ En mi empresa, se penaliza de alguna forma el no utilizar los aprendizajes obtenidos a través de la intervención de la Incubadora.
52.____ Si no utilizo las nuevas técnicas aprendidas con el apoyo de la Incubadora, habrá consecuencias negativas para mi empresa.
53.____ Cuando en mi empresa no aplicamos los aprendizajes obtenidos con el apoyo de la Incubadora, se notan las consecuencias negativas.

Percepción de Validez de Contenido

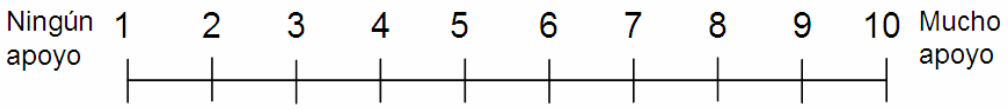
54.____ Los métodos utilizados por la Incubadora se asemejan mucho a la forma como hacemos las cosas en mi empresa.
55.____ La intervención de la Incubadora se basa en la realidad que enfrenta mi empresa.
56.____ Lo que aprendo en la Incubadora es lo que mi empresa requiere en este momento.
57.____ Las situaciones propuestas durante el aprendizaje en la Incubadora son muy similares a las que se dan en la vida real en mi empresa.

Competencias empresariales (BOBOEC)

Recursos de redes

Capital político (soporte del Gobierno)

Usando una escala del 1 al 10, donde 1 es ningún apoyo y 10 es mucho apoyo, ¿Qué tanto apoyo ha recibido del Gobierno en las siguientes áreas?



58.____ Beneficios fiscales.
59.____ Capacitación técnica.
60.____ Capacitación gerencial.
61.____ Servicios de información.
62.____ Servicios de recursos humanos.

Capital social (alianzas)

Ahora, indique el número que corresponda, según la pregunta.

63.____ ¿Con cuántas empresas su empresa ha establecido alianzas estratégicas para fines comerciales, en los últimos cinco años?
64.____ ¿Con cuántas empresas su empresa ha establecido alianzas estratégicas para desarrollo tecnológico, en los últimos cinco años?

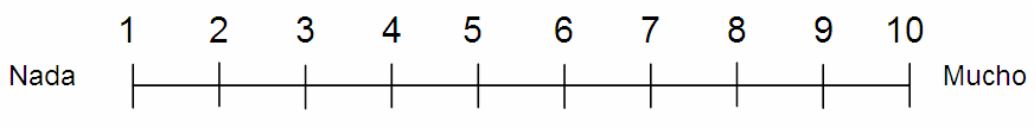
Reputación (reconocimientos y premios)

65.____ ¿En cuántos programas de colaboración con fines de investigación, desarrollo e intercambio tecnológico, con universidades e instituciones de investigación, ha participado su empresa?
66.____ ¿Cuántos contratos y patrocinios gubernamentales ha obtenido su empresa, con fines de investigación?
67.____ ¿Cuántos reconocimientos a la innovación ha obtenido su empresa?

Contexto (CF)

Infraestructura

Utilizando una escala del 1 al 10, donde 1 es nada y 10 es mucho, conteste ¿En qué medida considera que, en su comunidad, los siguientes factores facilitan la operación de la empresa?



68.____ Acceso a carreteras y transporte.
69.____ Servicios básicos, como electricidad, drenaje y agua potable.
70.____ Tecnologías de información y comunicaciones.
71.____ Servicios financieros.
72.____ Servicios de salud.
73.____ Escuelas.

Desempeño (BOBOPP)

Crecimiento

74.____ ¿Cuántos empleos de tiempo completo ha creado su empresa en los últimos 12 meses?

Longevidad

75.____ ¿Cuántos años lleva operando su empresa, ininterrumpidamente, desde su creación?

Appendix C. Consultants Guide

Encuesta de Impactos en el Desempeño Empresarial

Guía para el Asesor

Presentación

Esta guía busca orientar el trabajo del asesor en su labor de motivar y orientar a los emprendedores que se encuentran en el proceso de incubación dentro del Sistema de Incubadoras Sociales del ITESM, a nivel nacional, en su participación en la Encuesta de Impactos en el Desempeño Empresarial.

Objetivo de la encuesta

A través de esta encuesta se recabarán los datos necesarios para identificar los factores que contribuyen de manera significativa en el desarrollo de competencias empresariales en los segmentos de bajos ingresos. El reconocimiento de estos factores será de gran utilidad en el perfeccionamiento de modelos de desarrollo con enfoque empresarial en países emergentes.

A quién se dirige la encuesta

La encuesta se dirige a todos aquellos empresarios participantes en el proceso de incubación, en cualquiera de las Incubadoras Sociales del ITESM, en todo el país. Quedan excluidos de esta encuesta aquellos empresarios que se encuentran en los procesos de pre-incubación y post-incubación, así como aquellos empresarios que, estando en el proceso de incubación, no han concluido todavía, a la fecha de la encuesta, algún curso de capacitación o proyecto de asesoría.

Aplicación de la encuesta

La encuesta se contesta en línea, a través de la liga siguiente:

http://www.surveymonkey.com/s.aspx?sm=JItvysMnGPGgh_2fO14WMiPA_3d_3d

Con este propósito, en cada Incubadora Social del ITESM, se dispondrá de una o más computadoras, con ratón y acceso a Internet, donde el empresario podrá acudir a contestar la encuesta, con la asistencia de un asesor. El tiempo promedio estimado para completar la encuesta es de 30 minutos.

Para aquellos empresarios familiarizados con el uso de la computadora, se espera que la encuesta sea prácticamente auto-aplicada. En este caso, la participación del asesor se limitará a la resolución de dudas que puedan surgir durante el llenado de la encuesta.

Aquellos empresarios no familiarizados con el uso de la computadora o aquéllos que no sepan o no puedan leer, podrán contestar la encuesta a través del asesor, quien irá llenando el formato correspondiente, con base en las respuestas del empresario. Es muy importante, en este caso, que el asesor no sesgue las respuestas del empresario, haciendo sugerencias o juicios sobre sus respuestas.

Para el cumplimiento de los objetivos de la encuesta, es muy importante que todos los reactivos sean contestados. Para continuar y terminar la encuesta, es necesario contestar todos los reactivos marcados con *. Si alguno de estos reactivos es dejado en blanco o se escriben letras sobre un campo que sólo acepta dígitos, el sistema no permite avanzar a la página siguiente hasta que se corrija el problema. En cada caso, aparecerá un mensaje de error sobre la pregunta que presenta el problema.

Al terminar cada página, es necesario dar clic en el botón “Página Siguiente” para continuar con la siguiente sección de la encuesta, hasta llegar a la última página y dar clic en “Fin de la Encuesta”. Al terminar de contestar la encuesta, el sistema guarda los datos automáticamente y abre una nueva encuesta.

Descripción de la encuesta

La encuesta se compone de 9 páginas. Las primeras 3 páginas se dedican a Datos Generales, mientras que las restantes se enfocan en el impacto de la intervención de la Incubadora Social en el desempeño de la empresa y en la medición de factores externos. En la parte superior de cada página se muestra el porcentaje de avance total en la encuesta.

Preparación de la encuesta

A fin de orientar apropiadamente a los empresarios, el asesor debe leer la encuesta previamente y resolver cualquier duda que, piense, pudiera surgir durante la aplicación de la misma.

De igual forma, el asesor deberá asegurarse de que existan las condiciones necesarias para que cada empresario complete la encuesta exitosamente. Debe haber una computadora disponible, con ratón y acceso a Internet por cada empresario que acuda a llenar la encuesta. El asesor deberá estar disponible para resolver cualquier problema o duda durante el tiempo que se lleve la encuesta.

Dudas y sugerencias

Para cualquier aclaración, duda o sugerencia relacionada con la Encuesta de Impactos en el Desempeño Empresarial, favor de escribir a René Díaz Pichardo, a la siguiente dirección de correo electrónico: renediazp@hotmail.com

¡Muchas gracias por tu colaboración!

Appendix D. Final Survey Instrument

Sistema de Incubadoras Sociales del Instituto Tecnológico y de Estudios Superiores de Monterrey

(logotipo del Tec al margen)

Este cuestionario tiene como propósito evaluar el impacto de las Incubadoras Sociales en el desempeño de las empresas beneficiarias, a fin de identificar áreas de oportunidad para la mejora de nuestros servicios.

Asegúrese de contestar TODOS Y CADA UNO de los reactivos, a fin de poder pasar a la sección siguiente y terminar la encuesta.

Escriba lo que se le pide en el espacio o haga clic sobre el botón correspondiente para seleccionar su respuesta. No hay respuestas correctas ni incorrectas, sólo conteste lo que usted piensa, con sinceridad.

Agradecemos profundamente su participación.

Datos Generales

Nombre de la Incubadora Social _____

Nombre completo del asesor que le asiste en el llenado de la encuesta, nombre(s) y apellidos. Si no le asiste ningún asesor, escriba NINGUNO.

_____

Nombre del emprendedor o emprendedora _____

Género: Hombre ( ) Mujer ( )

Edad (años cumplidos a la fecha) _____

Años de escolaridad (años terminados) _____ Años como empresario _____

¿Su escolaridad incluyó capacitación empresarial? Sí ( ) No ( )

Años de experiencia en su negocio actual _____

Nombre de su empresa _____

Calle, número y colonia de su empresa _____

Municipio _____

Estado _____

Giro de su empresa _____

Principales líneas de negocio _____

_____

¿Cuántas horas al la semana dedica usted a su empresa? _____

Número de personas dedicadas a su empresa de tiempo completo (6 horas diarias o más) _____

Número de personas dedicadas a su empresa de tiempo parcial (menos de 6 horas diarias) y/o eventual _____

Ventas anuales de la empresa _____

Margen bruto estimado como porcentaje de su venta total (el margen bruto es el precio de venta de sus productos y/o servicios menos su costo) _____ %

¿Qué le motivó a acercarse a la Incubadora Social? _____

_____

¿Quiénes en su empresa han tomado cursos en la Incubadora Social? _____

_____

¿Cuántos cursos de capacitación ha completado usted o personal de su empresa en la Incubadora Social? _____

¿Qué cursos tomaron? _____

¿Hace cuánto tiempo terminó usted o personal de su empresa el último curso en la Incubadora Social? _____

¿Cuántos proyectos de asesoría ha completado su empresa en la Incubadora Social? _____

¿Quiénes en su empresa han participado en las actividades de asesoría de la Incubadora Social?

_____

¿Cuáles fueron los objetivos de esta asesoría?

_____

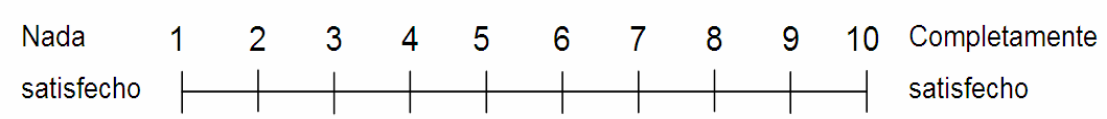
¿Hace cuánto tiempo se terminó el último proyecto de asesoría completado en la Incubadora Social? _____

¿Ha participado en otros medios de desarrollo de competencias empresariales, distintos de la Incubadora Social? Sí ( ) No ( )

¿Hace cuánto tiempo? _____ años y _____ meses.

Bienestar (BOBOP Performance)

Instrucciones para las preguntas 1 a 21: Utilizando una escala del 1 al 10, donde 10 quiere decir que usted está completamente satisfecho(a) y 1 que usted está nada satisfecho(a), seleccione el número correspondiente a su nivel de satisfacción, en cada uno de los siguientes aspectos:



¿Qué tan satisfecho(a) está con… ?

1.____ su vida, como un todo?
2.____ su nivel de vida?
3.____ su salud?
4.____ sus logros?
5.____ sus relaciones personales?
6.____ su propia seguridad?
7.____ sentirse parte de su comunidad?
8.____ su seguridad futura?
9.____ su vida espiritual y su religión?
10.____ el tiempo que puede dedicar a su familia?
11.____ el tiempo que puede dedicar a sus pasatiempos e intereses personales?
12.____ su calidad de vida?

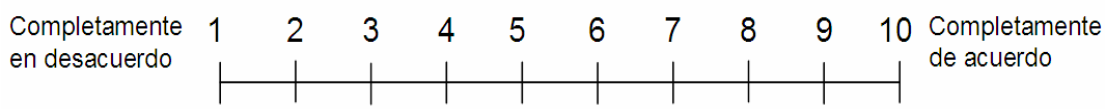
Desempeño (BOBOP Performance)

Qué tan satisfecho(a) está con el desempeño de su empresa en cada uno de los siguientes factores:

13.____ Nivel de ventas.
14.____ Crecimiento en ventas.
15.____ Flujo de caja (es decir, la cantidad de dinero que pasa por sus manos).
16.____ Rendimiento sobre el capital de los inversionistas (es decir, el provecho que obtiene por su inversión como dueño del negocio).
17.____ Margen bruto (es decir, el precio de venta de sus productos y/o servicios menos su costo).
18.____ Utilidad neta (es decir, lo que le queda después de pagar todos sus costos, gastos e impuestos).
19.____ Utilidad neta con relación a Ventas (es decir, cuántos centavos le quedan por cada peso que vende, después de restar todos sus costos, gastos e impuestos).
20.____ Rendimiento sobre la inversión (es decir, el provecho que obtiene de la inversión total en su negocio).
21.____ Capacidad para hacer crecer su negocio, reinvirtiendo las utilidades del mismo negocio.

Competencias empresariales (BOBOEC)

Instrucciones para las preguntas 22 a 65: Usando la escala del 1 al 10, donde 10 quiere decir que usted está completamente de acuerdo con la frase y 1 quiere decir que usted está en total desacuerdo con la frase, escriba en cada línea el número que corresponda.



¿Qué tan de acuerdo está usted con cada una de las siguientes frases?

Orientación empresarial

22.____ En general, en nuestra empresa, preferimos comercializar productos y/o servicios nuevos, derivados de la investigación y desarrollo, del liderazgo tecnológico y la innovación.
23.____ En los últimos 3 años, nuestra empresa ha comercializado muchas nuevas líneas de productos y/o servicios.

24.____ En los últimos 3 años, en nuestra empresa, los cambios en las líneas de producto y/o servicios han sido drásticos.
25.____ Frente a los competidores, nuestra empresa casi siempre toma la iniciativa.
26.____ Frente a los competidores, nuestra empresa, frecuentemente, es la primera en introducir nuevos productos y/o servicios, nuevas técnicas administrativas o nuevos sistemas productivos.
27.____ En nuestra empresa, normalmente, buscamos "destruir" a la competencia.
28.____ En general, en nuestra empresa, preferimos proyectos de alto riesgo con probabilidades de muy altos rendimientos, que inversiones seguras con rendimientos moderados.
29.____ En nuestra empresa creemos que, dada la naturaleza del entorno, es necesario tomar acciones intrépidas, para alcanzar los objetivos de la empresa.

Contexto (CF)

Hostilidad ambiental

30.____ El ambiente en que opera nuestra empresa es muy riesgoso; un paso en falso puede hacer que la empresa desaparezca.
31.____ El ambiente en que opera mi empresa es muy estresante, hostil y duro; es difícil mantenerse a flote.
32.____ La empresa opera en un ambiente donde nuestras iniciativas impactan muy poco, en comparación con las tremendas fuerzas de la competencia, la política o la tecnología.

Desempeño (BOBOP Performance)

33.____ En nuestra empresa, tenemos un control adecuado de nuestras operaciones.
34.____ En nuestra empresa, separamos el dinero de la empresa del de la familia.
35.____ Las operaciones de nuestra empresa no dañan el medio ambiente.
36.____ La continuidad de nuestra empresa está asegurada.
37.____ En nuestra empresa, se trata con justicia y equidad a todos los trabajadores.

Competencias empresariales (BOBOEC)

Orientación al mercado

38.____ La gente de ventas en nuestra empresa comparte entre sí información sobre los competidores.
39.____ En nuestra empresa, respondemos rápidamente a las acciones de nuestros competidores.
40.____ Los directivos discutimos regularmente sobre las fuerzas y debilidades de nuestros competidores.
41.____ Nuestros objetivos de negocio se fundamentan en la satisfacción de nuestros clientes.
42.____ Medimos y monitoreamos de cerca el nivel de servicio al cliente.
43.____ Los principales directivos de nuestra empresa, de todas las áreas, visitamos regularmente a nuestros clientes.
44.____ En nuestra empresa, compartimos libremente la información sobre nuestros clientes.
45.____ Para nosotros, es fundamental entender las necesidades de nuestros clientes.
46.____ Para nosotros, es fundamental incrementar el valor que damos a nuestros clientes.
47.____ Medimos frecuentemente la satisfacción de nuestros clientes.
48.____ Ponemos mucha atención al servicio al cliente.
49.____ En nuestra empresa, entendemos cómo cada empleado contribuye a crear valor para nuestros clientes.
50.____ Cuando vemos una oportunidad para desarrollar una ventaja competitiva, pensamos en clientes concretos a quien ofrecer nuestros productos y/o servicios.
51.____ Los recursos se comparten entre las diferentes áreas de la empresa.

Influencia de la Agencia de Desarrollo Empresarial (IEDA)

Usando la misma escala del 1 al 10, pensando específicamente en el apoyo recibido por la Incubadora, ¿Qué tan de acuerdo está con las siguientes frases?

Presteza a aprender

52.____ Antes de la intervención de la Incubadora, me quedaba claro cómo esta intervención impactaría en el desempeño de mi empresa.
53.____ Antes de la intervención de la Incubadora, entendía bien cómo afectaría en el desarrollo de mi trabajo en la empresa.
54.____ Antes de la intervención de la Incubadora, tenía expectativas claras sobre los resultados de esta intervención.
55.____ Los resultados esperados de la intervención de la Incubadora estuvieron claros desde el principio.

Resultados Positivos

56.____ Si aplicamos lo que hemos aprendido durante la intervención de la Incubadora, aumentarán los ingresos de nuestra empresa.
57.____ Quienes colaboramos en nuestra empresa recibiremos más ingresos cuando apliquemos los aprendizajes logrados con la intervención de la Incubadora.
58.____ Si no aplicamos en nuestra empresa los aprendizajes logrados con la intervención de la Incubadora, difícilmente aumentarán los ingresos de nuestra empresa.

Resultados Negativos

59.____ En nuestra empresa, se penaliza de alguna forma (por ejemplo, con una llamada de atención) el no utilizar los aprendizajes obtenidos a través de la intervención de la Incubadora.
60.____ Si no utilizamos las nuevas técnicas aprendidas con el apoyo de la Incubadora, habrá consecuencias negativas para nuestra empresa.
61.____ Cuando en nuestra empresa no aplicamos los aprendizajes obtenidos con el apoyo de la Incubadora, se notan las consecuencias negativas.

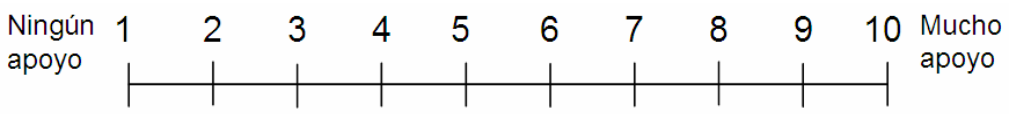
Percepción de Validez de Contenido

62.____ Los métodos utilizados por la Incubadora se adaptan a la manera de hacer las cosas en nuestra empresa.
63.____ La intervención de la Incubadora se basa en la realidad que enfrenta nuestra empresa.
64.____ Lo que aprendo en la Incubadora es lo que nuestra empresa requiere en este momento.
65.____ Las situaciones propuestas durante el aprendizaje en la Incubadora son muy similares a las que se dan en la vida real en mi empresa.

Competencias empresariales (BOBOEC)

Recursos de redes

Instrucciones para las preguntas 66 a 93: Usando una escala del 1 al 10, donde 10 quiere decir que su empresa a recibido mucho apoyo y 1 que no ha recibido ningún apoyo, escriba en cada línea el número que corresponda, en cada uno de los siguientes aspectos:



Soporte del Gobierno

¿Qué tanto apoyo ha recibido su empresa del Gobierno en las siguientes áreas, en los últimos tres años?

66.____ Ventas.
67.____ Compras.
68.____ Servicios financieros (ahorro, crédito, seguros, etc.).
69.____ Beneficios fiscales.
70.____ Capacitación técnica.
71.____ Capacitación gerencial.
72.____ Servicios de información.
73.____ Servicios de contratación de personal.
74.____ Asistencia legal.

Soporte Institucional

¿Qué tanto apoyo ha recibido de instituciones no gubernamentales (distintas de las Incubadoras Sociales del Tec de Monterrey) en las siguientes áreas, en los últimos tres años?

75.____ Ventas.
76.____ Compras
77.____ Servicios financieros (ahorro, crédito, seguros, etc.).
78.____ Asesoría fiscal.
79.____ Capacitación técnica.
80.____ Capacitación gerencial.
81.____ Servicios de información.
82.____ Servicios de contratación de personal.
83.____ Asistencia legal.

Soporte Familiar y Social

¿Qué tanto apoyo ha recibido su empresa de parte de familiares, amigos y conocidos, en cada uno de los siguientes aspectos, en los últimos tres años?

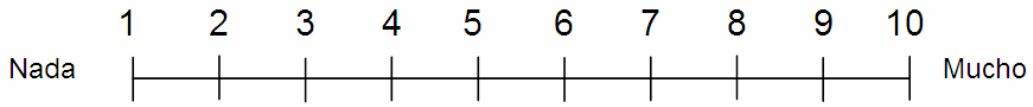
84.____ En las actividades cotidianas de su empresa.

85.____ Ventas.
86.____ Compras
87.____ Préstamos o aportaciones en dinero y/o en especie.
88.____ Asesoría fiscal.
89.____ Capacitación técnica.
90.____ Capacitación gerencial.
91.____ Servicios de información.
92.____ Servicios de contratación de personal.
93.____ Asistencia legal.

Contexto (CF)

Infraestructura

Instrucciones para las preguntas 94 a 101: Utilizando una escala del 1 al 10, donde 1 es nada y 10 es mucho, escriba en cada línea el número que corresponda en cada uno de los siguientes aspectos:



¿En qué medida considera que, en su comunidad, los siguientes factores facilitan la operación de su empresa?

94.____ Acceso a carreteras y transporte.
95.____ Servicios básicos, como electricidad, drenaje y agua potable.
96.____ Tecnologías de información y telecomunicaciones (telefonía, Internet, etc.)
97.____ Servicios financieros (ahorro, crédito, seguros, etc.)
98.____ Servicios de salud.
99.____ Servicios educativos.
100.____ Seguridad.
101.____ Respeto por las leyes e impartición de justicia.

Competencias empresariales (BOBOEC)

Instrucciones para las preguntas 102 a 109: Finalmente, escriba en cada línea el número que corresponda, según la pregunta.

En los últimos tres años, ¿Con cuántas empresas su empresa ha establecido alianzas estratégicas para…

Alianzas estratégicas

102.____ fines comerciales?
103.____ desarrollo tecnológico?

Pensando en su empresa, en los últimos tres años, seleccione el número que corresponda en cada caso.

Reputación (reconocimientos y premios)

104.____ Número de programas de colaboración con fines de investigación, desarrollo e intercambio tecnológico, con universidades e instituciones de investigación en que ha participado su empresa.
105.____ Número de contratos y/o patrocinios gubernamentales que ha obtenido su empresa, con fines de investigación.
106.____ Número de reconocimientos a la innovación (formales o informales) que ha obtenido su empresa.

Desempeño (BOBOP Performance)

¿Cuántos empleos ha creado o perdido su empresa en los últimos 12 meses?

Crecimiento

107.____ De tiempo completo (6 horas diarias o más).
108.____ De tiempo parcial (menos de 6 horas diarias o eventual)

Longevidad

109.____ ¿Cuántos años (completos) lleva funcionando su empresa, ininterrumpidamente, desde su creación?

¡Muchas gracias por su colaboración!

Appendix E. Descriptive Statistics for all Observed Variables

Item	N	Range	Min.	Max.	Mean	Std. Dev.	Variance	Skewness	Kurtosis
1	109	7	3	10	8.61	1.33	1.76	- 1.39	3.18
2	109	9	1	10	7.95	1.76	3.10	- 1.37	3.18
3	109	8	2	10	8.56	1.49	2.21	- 1.49	2.98
4	109	9	1	10	8.13	1.64	2.69	- 1.46	3.23
5	109	8	2	10	8.78	1.47	2.15	- 2.06	5.78
6	109	9	1	10	8.63	1.61	2.60	- 2.09	6.21
7	109	7	3	10	9.02	1.22	1.48	- 1.95	5.62
8	109	8	2	10	8.27	1.69	2.86	- 1.44	2.30
9	109	7	3	10	8.92	1.50	2.26	- 1.85	3.79
10	109	7	3	10	8.33	1.40	1.96	- 1.02	1.54
11	109	9	1	10	7.33	2.00	3.98	- 1.00	0.92
12	109	9	1	10	8.28	1.63	2.66	- 1.64	3.73
13	109	9	1	10	6.11	2.25	5.04	- 0.88	0.03
14	109	9	1	10	6.37	2.28	5.20	- 0.96	0.11
15	109	9	1	10	6.23	2.34	5.49	- 0.73	- 0.06
16	109	9	1	10	6.53	2.39	5.73	- 0.84	0.15
17	109	9	1	10	6.70	2.23	4.95	- 1.17	1.02
18	109	9	1	10	6.18	2.44	5.95	- 0.85	- 0.10
19	109	9	1	10	6.42	2.37	5.62	- 0.95	0.19
20	109	9	1	10	6.69	2.34	5.46	- 0.97	0.38
21	109	9	1	10	7.27	2.38	5.66	- 1.02	0.49
22	109	9	1	10	7.99	2.35	5.51	- 1.35	1.17
23	109	9	1	10	6.43	3.10	9.62	- 0.66	- 0.85
24	109	9	1	10	5.32	3.15	9.92	- 0.14	- 1.40
25	109	9	1	10	7.39	2.51	6.31	- 1.06	0.43
26	109	9	1	10	6.93	2.76	7.62	- 0.80	- 0.27
27	109	9	1	10	6.29	2.66	7.06	- 0.43	- 0.63
28	109	9	1	10	4.40	3.14	9.84	0.43	- 1.18
29	109	9	1	10	7.96	2.45	5.98	- 1.49	1.64
30	109	9	1	10	4.85	3.14	9.83	0.13	- 1.47
31	109	9	1	10	4.37	3.23	10.46	0.40	- 1.35
32	109	9	1	10	6.41	2.92	8.50	- 0.74	- 0.64
33	109	8	2	10	8.08	1.83	3.35	- 1.28	2.08
34	109	9	1	10	7.50	2.68	7.20	- 1.05	0.16
35	109	9	1	10	8.77	2.26	5.09	- 2.49	5.67
36	109	9	1	10	7.08	2.50	6.24	- 1.04	0.33
37	109	4	6	10	9.47	0.95	0.90	- 1.86	2.91
38	109	9	1	10	6.86	3.16	10.01	- 0.77	- 0.76
39	109	9	1	10	7.84	2.18	4.76	- 1.48	2.23
40	109	9	1	10	7.96	2.24	5.00	- 1.48	2.08
41	109	7	3	10	9.21	1.45	2.09	- 2.23	4.78
42	109	9	1	10	7.86	2.38	5.68	- 1.35	1.29

Item	N	Range	Min.	Max.	Mean	Std. Dev.	Variance	Skewness	Kurtosis
43	109	9	1	10	7.19	2.80	7.84	- 1.12	0.23
44	109	9	1	10	7.28	2.98	8.91	- 1.07	- 0.11
45	109	9	1	10	9.20	1.49	2.22	- 3.44	15.64
46	109	6	4	10	9.28	1.20	1.45	- 2.07	4.52
47	109	9	1	10	8.06	2.36	5.57	- 1.52	1.85
48	109	9	1	10	9.19	1.56	2.43	- 2.98	10.40
49	109	5	5	10	9.03	1.23	1.51	- 1.34	1.56
50	109	9	1	10	8.70	1.70	2.88	- 1.92	4.70
51	109	9	1	10	8.31	2.03	4.11	- 1.51	2.06
52	109	9	1	10	7.00	2.64	6.96	- 0.81	- 0.29
53	109	9	1	10	6.44	2.55	6.49	- 0.43	- 0.57
54	109	9	1	10	5.94	2.77	7.66	- 0.37	- 0.84
55	109	9	1	10	8.36	2.07	4.27	- 1.61	2.38
56	109	7	3	10	8.86	1.49	2.21	- 1.74	3.27
57	109	9	1	10	8.47	2.20	4.83	- 2.03	3.98
58	109	8	2	10	8.36	1.86	3.45	- 1.32	1.23
59	109	9	1	10	6.49	3.05	9.31	- 0.65	- 0.85
60	109	9	1	10	7.87	2.44	5.96	- 1.19	0.64
61	109	9	1	10	7.62	2.50	6.27	- 1.22	0.77
62	109	9	1	10	8.39	2.12	4.48	- 2.09	4.46
63	109	9	1	10	8.73	1.80	3.25	- 2.18	5.72
64	109	9	1	10	8.76	1.76	3.09	- 1.95	4.35
65	109	9	1	10	8.47	1.88	3.55	- 2.16	5.45
66	108	9	1	10	1.81	2.12	4.51	2.78	6.92
67	108	9	1	10	1.79	2.13	4.54	2.96	8.03
68	108	9	1	10	2.86	3.21	10.29	1.40	0.32
69	108	9	1	10	1.85	2.24	5.01	2.62	5.67
70	108	9	1	10	2.57	3.02	9.14	1.63	0.98
71	108	9	1	10	2.17	2.64	6.96	2.10	2.87
72	108	9	1	10	2.94	3.09	9.58	1.31	0.15
73	108	9	1	10	1.73	2.11	4.44	2.99	7.75
74	108	9	1	10	1.72	1.96	3.83	3.01	8.39
75	108	9	1	10	1.78	2.13	4.53	2.88	7.27
76	108	9	1	10	1.80	2.09	4.39	2.77	6.57
77	108	9	1	10	2.10	2.60	6.77	2.27	3.72
78	108	9	1	10	1.80	2.17	4.72	2.97	7.99
79	108	9	1	10	2.25	2.78	7.74	2.04	2.57
80	108	9	1	10	2.06	2.58	6.65	2.33	3.96
81	108	9	1	10	2.41	2.84	8.04	1.84	1.89
82	108	9	1	10	1.60	1.83	3.36	3.28	10.15
83	108	9	1	10	1.67	2.07	4.28	3.32	10.05
84	108	9	1	10	6.59	3.12	9.76	- 0.58	- 0.99
85	108	9	1	10	5.75	3.42	11.70	- 0.27	- 1.50
86	108	9	1	10	5.54	3.39	11.52	- 0.16	- 1.51

Item	N	Range	Min.	Max.	Mean	Std. Dev.	Variance	Skewness	Kurtosis
87	108	9	1	10	4.84	3.56	12.68	0.17	- 1.59
88	108	9	1	10	3.11	3.12	9.71	1.13	- 0.30
89	108	9	1	10	2.82	2.99	8.93	1.35	0.27
90	108	9	1	10	2.71	2.85	8.09	1.42	0.53
91	108	9	1	10	3.03	2.96	8.74	1.13	- 0.22
92	108	9	1	10	2.55	2.85	8.12	1.70	1.43
93	108	9	1	10	2.70	2.94	8.64	1.47	0.61
94	108	9	1	10	8.22	2.58	6.64	- 1.71	2.05
95	108	9	1	10	8.83	2.13	4.53	- 2.47	5.86
96	108	9	1	10	8.41	2.59	6.71	- 1.82	2.36
97	108	9	1	10	6.06	3.61	13.03	- 0.31	- 1.53
98	108	9	1	10	7.06	3.06	9.34	- 0.85	- 0.55
99	108	9	1	10	7.37	3.05	9.30	- 0.99	- 0.35
100	108	9	1	10	6.38	3.13	9.79	- 0.41	- 1.23
101	108	9	1	10	6.69	3.06	9.34	- 0.57	- 0.98
102	103	10	0	10	1.04	1.98	3.94	2.71	8.25
103	103	10	0	10	0.59	1.58	2.50	3.80	16.72
104	38	8	1	9	1.92	1.78	3.16	2.97	9.29
105	18	7	1	8	2.22	2.02	4.07	1.94	3.29
106	28	8	1	9	2.89	2.28	5.21	1.09	0.31
107	103	6	-3	3	0.91	2.77	7.67	- 0.60	- 1.62
108	103	6	-3	3	0.66	2.81	7.87	- 0.40	- 1.82
109	103	15	0	15	4.73	4.61	21.30	1.01	- 0.24

Appendix F. EQS Program for the Final Model

```
     1  /TITLE
     2  EQS program
     3  /SPECIFICATIONS
     4  DATA='c:\documents and settings\rené\mis
documentos\tec\doctoral dissertation\da
     5  tos\eqs 2010\datos completos 2010.ess';
     6  VARIABLES=110; CASES=109;
     7  METHOD=ML, ROBUST; ANALYSIS=COVARIANCE; MATRIX=RAW;
     8  DEL=8,13;
     9  /LABELS
    10  V1=V1; V2=V2; V3=V3; V4=V4; V5=V5;
    11  V6=V6; V7=V7; V8=V8; V9=V9; V10=V10;
    12  V11=V11; V12=V12; V13=V13; V14=V14; V15=V15;
    13  V16=V16; V17=V17; V18=V18; V19=V19; V20=V20;
    14  V21=V21; V22=V22; V23=V23; V24=V24; V25=V25;
    15  V26=V26; V27=V27; V28=V28; V29=V29; V30=V30;
    16  V31=V31; V32=V32; V33=V33; V34=V34; V35=V35;
    17  V36=V36; V37=V37; V38=V38; V39=V39; V40=V40;
    18  V41=V41; V42=V42; V43=V43; V44=V44; V45=V45;
    19  V46=V46; V47=V47; V48=V48; V49=V49; V50=V50;
    20  V51=V51; V52=V52; V53=V53; V54=V54; V55=V55;
    21  V56=V56; V57=V57; V58=V58; V59=V59; V60=V60;
    22  V61=V61; V62=V62; V63=V63; V64=V64; V65=V65;
    23  V66=V66; V67=V67; V68=V68; V69=V69; V70=V70;
    24  V71=V71; V72=V72; V73=V73; V74=V74; V75=V75;
    25  V76=V76; V77=V77; V78=V78; V79=V79; V80=V80;
    26  V81=V81; V82=V82; V83=V83; V84=V84; V85=V85;
    27  V86=V86; V87=V87; V88=V88; V89=V89; V90=V90;
    28  V91=V91; V92=V92; V93=V93; V94=V94; V95=V95;
    29  V96=V96; V97=V97; V98=V98; V99=V99; V100=V100;
    30  V101=V101; V102=V102; V103=V103; V104=V104; V105=V105;
    31  V106=V106; V107=V107; V108=V108; V109=V109; V110=V110;
    32  /EQUATIONS
    33  V23 =   1F6  +   1.000 E23  ;
    34  V24 =   *F6  +   1.000 E24  ;
    35  V39 = 1F15 +   1.000 E39  ;
    36  V47 = *F15 +   1.000 E47  ;
    37  V50 = *F15 +   1.000 E50  ;
    38  V69 = 1F9  +   1.000 E69  ;
    39  V72 = *F9  +   1.000 E72  ;
    40  V77 = 1F10 + E77;
    41  V78 = *F10 + E78;
    42  V80 = *F10 + E80;
    43  V84 = *F11 + E84;
    44  V85 = *F11 + E85;
    45  V88 = *F30 + E88;
    46  V90 = *F30 + E90;
    47  V91 = *F30 + E91;
    48  V102 = 1F12 + E102;
    49  V103 = *F12 + E103;
```

```
 50  V104 = *F13 + E104;
 51  V105 = *F13 + E105;
 52  F6 = *F24 +D6;
 53  F15 = *F24 + D15;
 54
 55  V1 = 1F2 + E1;
 56  V2 = *F2 + E2;
 57  V7 = *F2 + E7;
 58  V13 =   1F1 + E13;
 59  V17 =   *F1 + E17;
 60  V20 =   *F1 + E20;
 61  F1 = *F27 + D1;
 62  F2 = *F27 + D2;
 63
 64  V53 =   1F25 + E53;
 65  V54 =   *F25 + E54;
 66  V60 =   *F25 + E60;
 67  V64 =   *F25 + E64;
 68
 69  V30 = *F21 + E30;
 70  V31 = *F21 + E31;
 71  V94 = 1F22 +    1.000 E94  ;
 72  V98 = *F22 +    1.000 E98  ;
 73
 74  F27 = *F24 + *F25 + *F21 + *F22 + D27;
 75  F24 = *F25 + *F21 + *F22 + D24;
 76  /VARIANCES
 77  E23=  * ;
 78  E24=  * ;
 79  E39=  * ;
 80  E47=  * ;
 81  E50=  * ;
 82  E69=  * ;
 83  E72=  * ;
 84  E77 = *;
 85  E78 = *;
 86  E80 = *;
 87  E84 = *;
 88  E85 = *;
 89  E88 = *;
 90  E90 = *;
 91  E91 = *;
 92  E102 = *;
 93  E103 = *;
 94  E104 = *;
 95  E105 = *;
 96  D6=  *;
 97  F9=  *;
 98  F10 = 1;
 99  F11 = 1;
100  F12 = 1;
101  F13 = 1;
```

```
102  D15=  *;
103  D24 = 1;
104  F30 = 1;
105
106  E1 = *;
107  E2 = *;
108  E7 = *;
109  E13 = *;
110  E17 = *;
111  E20 = *;
112  D1 = *;
113  D2 = *;
114  D27 = 1;
115
116  E53 = *;
117  E54 = *;
118  E60 = *;
119  E64 = *;
120  F25 = 1;
121
122  E30 = *;
123  E31 = *;
124  E94=  * ;
125  E98 = *;
126  F21 = 1;
127  F22 = 1;
128
129  /COVARIANCES
130  F9,F11 = *;
131  F9,F30 = *;
132  F30,F11 = *;
133  F12,F9 = *;
134  F12,F11 = *;
135  F12,F30 = *;
136
137  F21,F22 = *;
138
139  F21,F9 = *;
140  F21,F11 = *;
141  F21,F12 = *;
142  F21,F22 = *;
143  F21,F25 = *;
144  F21,F30 = *;
145
146  F22,F9 = *;
147  F22,F11 = *;
148  F22,F12 = *;
149  F22,F25 = *;
150  F22,F30 = *;
151
152  F25,F9 = *;
153  F25,F11 = *;
```

```
154  F25,F12 = *;
155  F25,F21 = *;
156  F25,F22 = *;
157  F25,F30 = *;
158
159  F10,F9 = *;
160  F10,F11 = *;
161  F10,F12 = *;
162  F10,F13 = *;
163  F10,F21 = *;
164  F10,F22 = *;
165  F10,F30 = *;
166
167  F13,F9 = *;
168  F13,F11 = *;
169  F13,F12 = *;
170  F13,F21 = *;
171  F13,F22 = *;
172  F13,F30 = *;
173
174  E13,E47 = *;
175  E53,E60 = *;
176  E7,E24 = *;
177  E7,E30 = *;
178  E54,E53 = *;
179  /CONSTRAINTS
180  /TECHNICAL
181  ITR=80;
182  /PRINT
183  FIT=ALL;
184  TABLE=EQUATION;
185  /LMTEST;
186  SET=PEE,GVF;
187  /END
```

Biographical Sketch

René Díaz-Pichardo was born in 1970, in Fresnillo, Zacatecas, in Mexico. He was the third child of Ma. Antonia Pichardo-Ortiz, and Francisco Díaz-Camacho. René's family moved to Mexico City, where he grew up and obtained a bachelor degree in Industrial Engineering, in the National Polytechnic Institute, in 1992.

In 1995, he married María Isabel Alba Rodríguez to share their lives and establish a family. They, currently, have five children: three boys and two girls.

After several years in the financial sector, René entered IPADE Business School, where he obtained the Master Degree in Business Administration, in 1998. The following years, he worked as a consultant in management and marketing for several companies in many sectors, such as banking, food industry, tourism, and non-for-profit organizations. In some companies, he also acted as a member of the board or steering committee.

In 2005, René and his family moved to Monterrey, Nuevo León, to enter the PhD Program in Administration at Tecnológico de Monterrey, Campus Monterrey. During his doctoral studies, he worked as a researcher at the EGADE Business Accelerator, presented several papers in international academic congresses in Asia, Europe, and the United States, and published several articles in conference proceedings and divulgation journals.

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