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MICRO AND SMALL ENTERPRISE DEVELOPMENT IN BOLIVIA
SEEKING OPPORTUNITIES

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ABSTRACT

During the last three decades, there has been a growing interest in the role of Micro and Small Enterprises (MSEs) as engines of economic development and pro-poor growth. In Bolivia, MSEs are the main source of employment but have alarmingly low levels of productivity. Therefore, the purpose of this study was to seek for an explanation of the relevance of MSEs' growth in the Bolivian context as well as to understand the different factors affecting its performance. In order to conduct the analysis, a mixed methods approach primarily based on quantitative data analysis was used.

On the basis of the analysis, it was concluded that MSEs' growth has a direct impact on employment levels in Bolivia and MSEs are thus an important tool in the fight against unemployment. Results also showed that Bolivian MSEs are characterized by a relatively low use of external financing, poor levels of expenditure on fixed assets, technology and quality, and an intensive use of unqualified labour as their main resource to achieve results, all of which negatively affects their productivity. Additionally, it was found that the environment is not conducive for business development and it constrains MSE's performance and growth.

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ABBREVIATIONS AND ACRONYMS

| | |
|-------|-------------------------------------|
| BEE | Business Enabling Environment |
| BPRS | Bolivian Poverty Reduction Strategy |
| EE | Enabling Environment |
| ES | Enterprise Survey |
| IC | Investment Climate |
| IFC | International Finance Corporation |
| ILO | International Labour Organization |
| MSEs | Micro and Small Enterprises |
| MSMEs | Micro, Small and Medium Enterprises |
| R&D | Research and Development |
| SMEs | Small and Medium Enterprises |
| WB | The World Bank |

1. INTRODUCTION

During the last three decades, there has been a growing interest in the role of Micro and Small Enterprises (MSEs) as engines of economic development and pro-poor growth. MSEs have been recognized as a major source of employment and income in many developing countries (Mead & Liedholm, 1998). Thus, their role in poverty reduction and equitable development through income generation seems to be certain. However, the same cannot be said regarding their contribution to economic development. Jeppesen (2005) explains that most MSEs are only survival enterprises, which make a relatively low contribution to the total production output.

In Bolivia, MSEs constituted by up to twenty workers account for the vast majority of enterprises and provide approximately eighty-eight percent of all jobs (Delgadillo, 2001), which turns this segment into the main source of employment in a context of high poverty rates and unemployment. However, MSEs have very low productivity levels when compared to bigger companies: while micro enterprises produce 26% of the GDP, large companies are accountable for more than 65% of it (Fretes-Cibils et al., 2006).

The alarming positive relation between size of enterprise and productivity levels has raised the question of whether Bolivia's efforts should be placed in promotion of MSEs at all. Considering the limited resources the country has, some authors suggested that Bolivia's strategy should be focused on development of Small and Medium Enterprises (SMEs) instead, since they have higher chances of contributing to private sector competitiveness (Nisttahusz, 2002; Zevallos & Velazco, 2003).

Given that productivity growth is thought to be a necessary pre-condition that a country must meet in order to achieve economic growth and poverty alleviation (Bastos & Nasir, 2004; The World Bank, 2007), it seems crucial to analyze what the current role and importance of MSEs in Bolivia are and which factors are affecting their productivity.

1.1. Research Purpose and Research Questions

Based on the existing controversies about the role of MSEs and on the alarming statistics showing their low productivity levels, the intention of this study is to seek for a

theoretically sound and empirically validated explanation of the relevance of MSEs' growth in the Bolivian context as well as to understand the different factors affecting its performance.

The main questions in this study are therefore as follows:

- Why does MSEs' growth matter?
- What determines or affects MSEs' growth in Bolivia?
 - How do endogenous factors of productivity affect MSEs' performance in Bolivia?
 - Is there any correlation between an enabling environment and a better performance of MSEs?

Understanding the first question is necessary to contribute to the ongoing international and local policy debate about MSEs, as it provides elements to better judge whether this sector should be encouraged or not. If, as suspected, this sector should indeed be promoted, the second question will allow identifying the issues that need to be addressed. It is expected that the study results will add to an increased understanding of the main constraints facing MSEs and serve to formulate policy recommendations regarding where reform efforts should be targeted to have the greatest impact on MSEs' productivity and performance.

1.2. Disposition

This Chapter is followed by a presentation of the Analytical Framework (Chapter 2), including a literature overview on MSEs' relevance, empirical background information about the Bolivian case, the analytical model that guides the data analysis, the hypotheses that will be tested and the description of the main concepts that will be used throughout the study. The third chapter refers to the used Methodology, comprising the research design and strategy, the epistemological and ontological position, the methods used for data collection and data analysis, the limitations encountered by the study and some ethical considerations. This will be followed by the presentation of the Data Analysis and Findings related to the proposed research questions (Chapter 4), after which a Discussion comparing

the study results with previous studies will be included (Chapter 5). Finally, Chapter 6 provides the main Conclusions derived from the analysis.

2. ANALYTICAL FRAMEWORK

The current section will present an overview of the research topic and the frame that will be used to conduct the analysis. Firstly, theories and existing studies regarding MSEs' development will be presented. This will be followed by empirical background information about MSEs in the Bolivian context. A third part will present the analytical model that will be applied to address the research problem. Consequently, based on the previous information, hypotheses will be introduced. Finally, an explanation of the main concepts that will be used throughout the study will be included.

2.1. Literature Review: MSEs' Relevance

Since the 1970s, there is a growing trend to investigate the potential of MSEs as an engine for growth coming from academia, policy-makers, and members of the development field (McPherson, 1996). As Vandenberg (2009) points out, MSEs contribute in a substantial way to employment in both developed and developing countries, accounting, together with medium size enterprises, for over 90% of enterprises in all countries.

When it comes to developing countries, MSEs are considered a major source of employment and income, with empirical data and official statistics showing that workers formally employed in the MSE sector range from one quarter to one third, respectively, of the entire employed population (Mead & Liedholm, 1998; Vandenberg, 2009). Additionally, it was found that in many countries one out of three of the new economically active population enters the labour force by working in micro and small enterprises (Mead & Liedholm, 1998). Besides, it must be considered that low income countries have very large informal economies mainly comprised of micro-business, so the actual employment provided by MSEs is in fact much higher, turning MSEs into a dominating feature of the developing world (Vandenberg, 2009).

Some authors also claim that in developing countries, most of which are characterized by unemployment and inequality, small enterprises have the potential to alleviate poverty through employment generation and are considered as engines of economic growth (Özar et al., 2008). However, even though these firms constitute the largest group in the private

sector in terms of employment, they only deliver one third of the production output and only a small number of MSEs can actually contribute to economic development (Jeppesen, 2005). Empirical evidence suggests that although there is a relation between small enterprises' activities and growth, causality cannot be established and it cannot be claimed that MSEs' development lead to growth, and even further, economic growth would not necessarily conduct to poverty alleviation (Agbeibor, 2006).

The great majority of MSEs are one-person enterprises, developing on the local market and with a survival *modus operandi* (Jeppesen, 2005). Yet these "survival-type MSEs" can have an important role in helping poor people, fostering equitable development and acting as a poverty alleviation tool (Jeppesen, 2005; Mead & Liedholm, 1998). As Mead & Leadholm (1998) explain, different groups of MSEs have different roles regarding poverty alleviation and growth.

When stating that MSEs can act as a poverty alleviation tool, it must be mentioned that two factors determine the concept of pro-poor growth: growth should have a high rate and it should provide opportunities for the poor to increase their incomes (OECD, 2004). Thus, to achieve pro-poor growth, increases in MSEs' productivity must occur in the sectors where the poor work or where they can participate, so that they can benefit from growth. Therefore, both pace and quality of growth must be taken into account, as well as its distribution effects, in order to qualify growth as pro-poor (OECD, 2004).

Nevertheless, importance of small enterprises goes beyond the previously mentioned economic reasons, including political and social aspects as well. Liedholm & Mead (1999) discuss that small and medium enterprises have the potential to contribute in a number of ways to the development process, such as by improving household income and welfare, enhancing empowerment of the individual, promoting social change, political stability and democracy, and affecting distributional and developmental objectives, among others. This is aligned to the findings of Parrilli et al. (2009), who states there is a positive relation between an economic system based on dynamic SMEs and democratization processes in society, which is explained by the fact that people assume more responsibilities, value their own skills and create networks of interaction, thus promoting social cohesion. Despite the

fact that both authors' findings were based in the SMEs context, it is logical to believe that this would also apply to MSEs, considering empowerment and social change as consequences of higher employment rates and a more active participation in society through the development of productive activities.

As it can be observed, there is a multiple and complex set of reasons that explain why supporting MSEs matters. However, it can also be simplified and narrowed down to the basics: they account for the largest share of employment by far (ILO, 2007). Taking into account developing countries have critical issues of unemployment, the single fact that MSEs are the largest employment providers is enough to focus attention on MSEs' dynamics of functioning.

Empirical studies prove that though the ratio of small firm creation is higher than that of bigger companies, they also have a shorter life since they are more vulnerable (Audretsch et al., 2009). Mead and Liedholm (1998) studied the dynamics of MSEs' life cycle and found some studies suggesting that closure rates in some countries can be higher than 20% per year. Therefore, this sector is particularly instable. Several authors agree that MSEs' development seems to be hindered by exogenous and endogenous constraints (Harvie & Lee, 2002; Kirby & Watson, 2003; Brown et al., 2005; Fogel et al., 2006), which affect their ability to compete in the markets and to grow or even survive.

Consequently, countries should do their best to limit MSEs' closures and layoffs (Vandenberg, 2009). This could be done by promoting new business start, countering the forces that cause existing enterprises to fail or improving performance of existing ones (Mead & Liedholm, 1998). However, in spite of the drastic importance informal MSEs have in most developing countries, there is limited direct help for them (Vandenberg, 2009). Özar et al. (2008) explain that policies to enhance enterprise performance are usually focused on SMEs and, especially in emerging countries, forget to consider the specificities of MSEs, which are less institutionalized and have different needs. Thus, the specific needs of the sector call for specific policies (Jeppesen, 2005).

2.2. Empirical Background: The Bolivian Scenario

Bolivia is a landlocked lower-middle income country located in Latin America and characterized by high levels of poverty and unemployment¹. Poverty rates in urban areas of Bolivia are as high as 52%, meaning that more than half of the urban population lives under the poverty line (Jemio & Choque, 2006). Bolivia's productive activity is centralized in three major cities which gather two thirds of all the enterprises in the country² and its economy is based on production of primary goods with low added value and almost no diversification (Zevallos & Velazco, 2003).

As a result, Bolivia compares poorly to other countries in the region and usually ranks very low in international competitiveness surveys. Advantages of Bolivian national production are limited because it relies on raw inputs and cheap unqualified labour force (Borda & Ramirez, 2006), while most of its industry has low levels of capital investment and use obsolete technologies (Zevallos & Velazco, 2003).

Figure 1. Bolivia's Map



Since the eighties, the Bolivian economy Source: CIA, 2010

went under major transformations due to the introduction of structural reform programs (Jemio & Choque, 2006), and went from being a state-dominated economy to a liberal one, through the privatization of former state owned enterprises. As a result of this process, public employment decreased from 26% to 12% of urban labour force in less than 15 years, causing a reallocation of public labour into the private sphere (Jemio, 2000). MSE's embraced most of the released labour, whether as entrepreneurs or as employees. Thus,

¹ According to CIA (2010) estimated unemployment in 2009 was 8,5%. However, it must be noticed that many workers are underemployed and many are not remunerated, thus real unemployment rates are much higher than what official statistics show.

² The three major cities in Bolivia are La Paz-El Alto, Cochabamba and Santa Cruz

nowadays MSEs employing up to 20 workers constitute the vast majority of all enterprises in Bolivia, as Figure 2 shows.

Figure 2. Number of Enterprises per Size of Enterprise



Source: Own Elaboration, based on INE (1992)

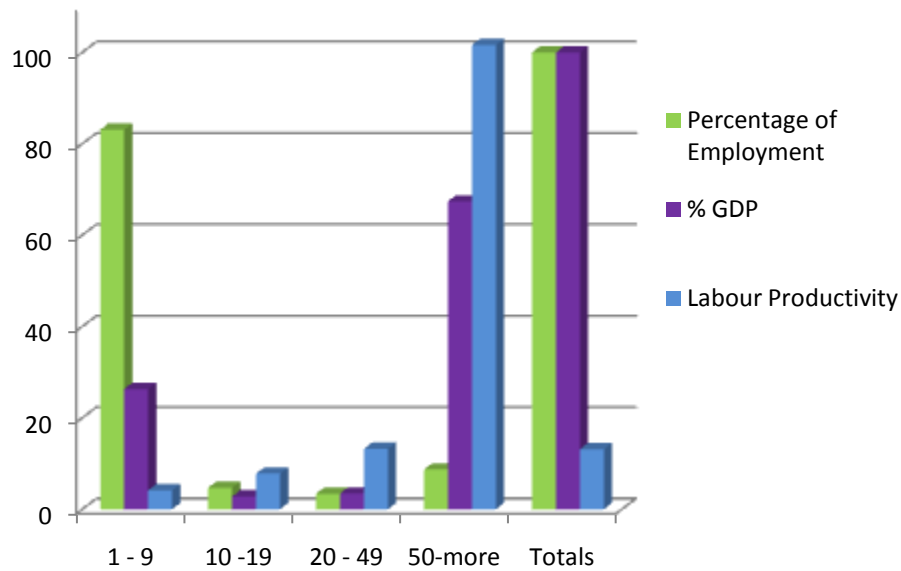
It can be seen by looking at the pyramid that microenterprises constituted by up to nine workers provide eighty-three percent of the jobs, which turns this segment, together with small enterprises, into the main sources of employment in the country. However, as it can be seen in Table 1 and Figure 3, their labour productivity is very low when compared to big companies: while micro enterprises account for 26% of the GDP, large companies produce more than 65% of it (Fretes-Cibils et al., 2006). Besides, there is an alarming positive relation between size of enterprise and productivity levels, which makes it imperative to investigate productivity levels of MSEs (Nisttahusz, 2002) and even question if they should be promoted at all. Moreover, sectors where the major part of employment is gathered and the poor are employed, such as MSEs, were “those with the lowest growth rates of GDP, labour productivity and real incomes” (Jemio & Choque, 2006:3).

Table 1. GDP, Employment and Productivity by Size of Enterprise

| Size of Ent. | GDP in Bs | GDP % | Employment | Employment % | Labour Productivity |
|--------------|------------|--------|------------|--------------|---------------------|
| 1-9 E. | 12.404.498 | 26,32 | 2.983.503 | 83,1 | 4,16 |
| 10-19 E. | 1.330.717 | 2,82 | 170.291 | 4,7 | 7,81 |
| 20-49 E. | 1.630.215 | 3,46 | 122.976 | 3,4 | 13,26 |
| 50-more E. | 31.759.937 | 67,39 | 312.450 | 8,7 | 101,65 |
| Totals | 47.125.367 | 100,00 | 3.589.221 | 100,00 | 13,13 |

Source: Own Elaboration, based on Delgadillo (2001)

Figure 3. Contributions to Employment, GDP and Productivity by Size of Enterprise



Source: Own Elaboration, based on Delgadillo (2001)

According to Borda & Ramirez (2006) productivity of big enterprises is 24 times higher than that of MSEs, which they attribute to qualified human labour, increased use of technology and better market access opportunities, including access to external markets. Several authors strongly suggest that instead of supporting MSEs, national efforts should be placed on the Small and Medium Enterprises' sector (SMEs). This position has originated in the idea that SMEs have bigger chances of achieving a more equitable income distribution, promoting productive investment and ultimately supporting a development strategy based on private sector competitiveness (Nisttahusz, 2002). Zevallos & Velazco (2003) clearly state that MSEs are not a sustainable strategy for development and they only recognize the role of MSEs as employment generators and survival options for many citizens. Moreover, Andersen & Muriel (2007) reflect that it might not be the best strategy to build the national economy upon micro and small businesses characterized by informality and low productivity.

Within the MSEs' sector, a difference must be made between productive enterprises with growth potential and subsistence enterprises. The bulk of MSEs in Bolivia are comprised of the second type, which are labour intensive establishments (Jemio & Choque, 2006), and thus become an important tool in the fight against unemployment. Therefore, Borda & Ramirez (2006) propose to consider MSEs as part of the poverty reduction strategy instead

of expecting them to become originators of productive development and economic growth engines. In fact, since most urban informal workers are employed in low productivity MSEs and are usually poor (Ibid.), productive development of Micro, Small and Medium-Sized Enterprises (MSMEs) is one of the priorities of the Bolivian Poverty Reduction Strategy (BPRS).

Different studies have been developed to address the low levels of productivity of Bolivian MSEs. The World Bank (2009) focused its analysis on the high informality rates observed in MSEs and its effects, concluding that since informal MSEs operate outside the law, they cannot get favourable credit terms or take advantage of institutions that support and facilitate enterprise development, thus limiting their productivity and profitability. Zevallos & Velazco (2003) go one step further, and attribute the high levels of informality to the Bolivian institutional instability, explaining that shifting policies ranging from left to right create ever-changing institutional restrictions which affect investment decisions and planning. Similar findings were presented by Andersen & Muriel (2007) in their study about gender effects on productivity, explaining that the current institutional setup in Bolivia does not provide incentives for a firm to grow, and this is partly attributed to the tax-system, which becomes extremely demanding as soon as an enterprise reaches a certain size. Finally, Jemio & Choque (2006) provide a different perspective and attribute low levels of productivity to the small size of firms, which prevents division of labour and specialization, and to low levels of available capital, suggesting that MSEs can only achieve output growth through an increase in workforce inputs. Considering that MSEs are labour intensive, they also state that lack of training and a poor educational system are greatly constraining productivity increases both at enterprise level and at a national scale.

However, none of these studies provides a comprehensive and holistic analysis of the role of both internal and external factors on productivity, and the different factors are only partially analyzed under the light of their specific topic, be it gender, formality or any other. Considering there is a multiplicity of different factors influencing productivity levels of MSEs and acting as constraints for their development, it is interesting to evaluate them and find out which the most crucial ones are and how the relations among them are.

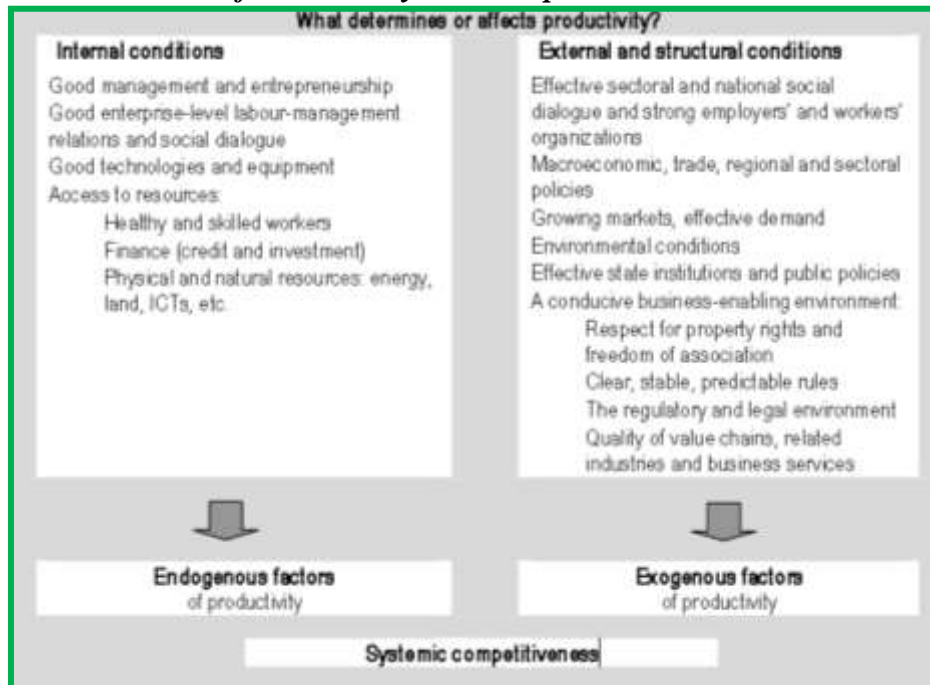
Thus, an analysis of these factors will be conducted based on an inclusive analytical framework that takes into consideration the role of each of the factors on MSEs' productivity and growth.

2.3. Analytical Model

In order to study the research topic and to address the selected research questions, a suitable analytical tool will be built based on a model developed by ILO about what determines or affects productivity in enterprises. During 2007, ILO published a report aimed at analyzing how the contribution of enterprises to productive and equitable economic and employment growth could be strengthened. It analyzed several concepts related to what makes an enterprise sustainable and it concluded that competitiveness relies on productivity, and that sustainable enterprises are those which are competitive (thus productive) and function in a competitive environment.

ILO (2007) explains that the concept of competitiveness is too broad and complex, which makes it difficult to measure. Competitiveness is usually approached by referencing a wide range of factors and they can be categorized as either endogenous factors or exogenous factors. The first ones are those that are internal to the enterprise and are under its control, such as labour or capital productivity; the second ones are those that are external to the enterprise and that are outside the enterprise's area of influence, such as the Business Enabling Environment (BEE) and macroeconomic, political, legal and social circumstances (Ibid.). The Systemic Competitiveness model can be found in Figure 4, which is presented below:

Figure 4. Determinants of Productivity and Competitiveness



Source: ILO, 2007

2.4. Hypotheses

Based on the research questions, the previously discussed literature and the analytical model that will be used, the study will test the following hypotheses against empirical quantitative data:

Table 2. Research Question and Hypotheses

| Research Question | Hypothesis |
|--|--|
| Why does MSEs' growth matter? | H1: Bolivian MSEs' growth is positively correlated to a higher demand for labour. |
| What determines or affects MSEs growth in Bolivia? - How do endogenous factors of productivity affect MSEs' performance? | Financial Capital - H2: Bolivian MSEs use alternative sources of external financing instead of commercial banks. |
| | Physical Capital - H3: Higher investments in physical capital are positively correlated to higher labour productivity. |
| | Human Capital - H4a: Education levels of workforce are positively correlated to labour productivity. Human Capital - H4b: Manager's experience is positively correlated to labour productivity. |
| | Technology and Quality - H5: Most Bolivian MSEs have low levels of investment in research & development, technology |

| | |
|--|--|
| | and quality. |
| | Raw Materials and Supply Chain - H6: There is a positive correlation between an MSE's amount of sales and the size of its suppliers (smaller MSEs buy materials from small companies or intermediaries). |
| What determines or affects MSEs growth in Bolivia? - Is there any correlation between an enabling environment and a better performance of MSEs? | H7: There is a positive correlation between MSEs exposed to an enabling environment and their performance. |

2.5. Conceptualization

Since words can have different meanings, it is important to unify the connotation of the concepts that will be used along the study. These concepts have been influenced by both literature review and the analytical framework previously explained.

✓ **MSEs:** As it is shown in table 3, the Bolivian legislation states that an MSEs is any enterprise that employs less than 20 workers, sells less than 4,500 minimum legal salaries annually, and has productive assets for less than 1,800 minimum legal salaries. However, as far as the purposes of this study go, only the parameters referring to number of employees will be considered when categorizing enterprises into micro and small.

Table 3. MSE Legal Categorization

| Criteria | Microenterprise | Small Enterprise |
|--|---------------------------|---------------------------|
| Number of Employees | 1 to 10 | 11 to 20 |
| Annual sales expressed as Minimum Legal Salaries | Smaller or equal to 1,350 | Smaller or equal to 4,500 |
| Productive assets expressed as Minimum Legal Salaries | Smaller or equal to 350 | Smaller or equal to 1,800 |

Source: Own Elaboration, based on Resolución Ministerial No. 325/01

✓ **MSEs' Growth:** This is defined as the phases of development through which an enterprise may pass during its life-cycle (McMahon, 1995). Traditional theories originating in the field of economics believed these phases are sequential, while more recent theories state that enterprises do not necessary pass through all the stages in a certain order (McMahon, 1998). Growth of MSEs can be measured in different ways, such as growth in sales, increase in number of workers or increments in profits. According to McPherson (1996:261) "growth in terms of sales or profits might be preferable to a labour-based measure from an accuracy standpoint", given that measurement is not an obstacle and data

is available. Hence, this study will use amounts of sales per year to measure a firm's growth rates.

✓ ***MSEs' Productivity:*** Productivity can be defined as the relation between outputs (or what is produced) and inputs (or what resources are needed to produce). Thus, productivity gains are the increase in production exceeding the increase in the utilized production factors, which could be labour hours worked or capital units spent (The World Bank, 2009). Additionally, two types of Productivity were identified by Aguilar & Elizondo (2009): the first one is based on low production costs achieved by minor investments in technology and use of unskilled personnel. The second one relies on highly qualified labour and investments in technology, based on specialization. The difference between the two groups is its effects (or lack of them) on employment and on productive efficiency.

✓ ***Labour Productivity:*** This is typically measured as a ratio of output per labour-hour, an input. This study will use the concept of Revenue per Employee instead of Labour Productivity, since it will not measure ratio of production per labour-hour, but the ratio of sales per employee. Yet when analysis and discussions take place, the terms labour productivity and revenue per employee will be used indistinctly.

✓ ***MSEs' Competitiveness:*** According to ILO (2007:58), "virtually everything matters for competitiveness". Porter (1991) argues that competitiveness is measured through productivity and thus, productivity determines competitiveness, which is aligned to the selected analytical model developed by ILO (2007). More recent studies state that productivity is just one of the components of competitiveness (Feuvrier & Götzfried, 2001) and others discuss that competitiveness may be based on low cost or on high specialization and productivity (Aguilar and Elizondo, 2009). This study does not intend to analyze enterprise competitiveness, thus based on ILO's analytical framework (see Figure 4), competitiveness will be considered as a direct result of productivity.

✓ ***MSEs' Performance:*** Performance indicates how well an enterprise is doing and it embodies a combination of different factors such as growth, productivity and competitiveness. Throughout the study, the concept of MSEs' performance will be used to assess the effects of endogenous and exogenous factors.

✓ ***Endogenous and Exogenous Factors of Productivity:*** This concept was previously explained when the Analytical Model was introduced. Complementary, it should be added that other authors refer to internal and external factors or conditions instead of endogenous and exogenous factors of productivity. Nonetheless, the idea holding the model is the same one: both types of factors or conditions are affecting a firm's performance and should be equally considered (Subramanian et al., 2005).

✓ ***Endogenous Factors*** are categorized in physical capital, human capital, financial capital, technology and quality, and raw materials and supply chain.

✓ ***Exogenous Factors*** will be grouped into different categories in order to facilitate the analysis, though the study will focus on the role of the enabling environment as a whole element instead of analyzing its individual components.

✓ ***Enabling environment:*** According to ILO, "the business-enabling environment is a broad concept which covers a range of factors, external to the enterprise, that affect enterprise formation and growth" (2007:x). Other authors refer to the investment climate instead of the external environment (Subramanian, 2005), which is defined as "the many location-specific factors that shape the opportunities and incentives for firms to invest productively, create jobs and expand" (ILO, 2007:26). For the purposes of this study, enabling environment and investment climate will be considered as synonyms and the enabling environment shall encompass the following:

✓ **Laws and regulations:** "Government laws and regulations define property rights and the rules for exchanging them; they also set the rules for market entry and exit and in support of competition" (Smallbone & Welter, 2001:259). Put in different words, laws and regulations set the formal field play in which enterprises develop, involving aspects related to property, licensing, registration, contracts, taxes, etc. ILO (2007) elucidates that enterprises rely on adequate regulatory frameworks for different purposes, such as ensuring fair competition, improving the way markets work through contract enforcement and protection of intellectual property rights, and last but not least, ensuring market sustainability through efficient fuel and energy use regulations, among others.

✓ **Policies:** Policies define how enabling an environment is for enterprise growth because they usually affect demand conditions (ILO, 2007). Some of the key policy

areas are macroeconomic policies regarding fiscal and monetary issues, educational policies that affect labour qualifications, sector level policies concerning investment and industrial promotion, geographical or regional policies for enterprise development, trade and regional integration policies and market access policies.

✓ **Institutional Framework:** Institutions provide the structure in which enterprises act, offering incentives and setting constraints that could enhance or hinder firms' strategy regarding proactive behaviour, risk-taking and innovation (Roxas et al., 2008; North, 1992). To the ends of the study, the concept of institutions will have a narrow meaning and it will refer to government agencies and other official entities with which enterprises must interact in order to conduct operations.

✓ **Macroeconomic and Political Conditions:** The political and economic context in which MSEs operate influences their results. When the economy is going through recession or stagnant cycles, it might be unrealistic to expect MSEs to expand and when the economy is thriving, it is likely that MSEs will benefit from that general prosperity (Mead & Liedholm, 1998). Likewise, in a context characterized by political instability, conducting business is more challenging than it would be in a context of certainty and predictability.

✓ **Markets and Competition:** MSEs develop in a given market and under specific competition practices, thus practices of competitors and the market's dynamics are affecting the business environment and need to be taken into account.

✓ **Infrastructure:** This factor has a determinant role in the opportunities and costs that all firms have by allowing firms to connect with markets (ILO, 2007). Infrastructure encompasses the physical existence of roads, power lines, water systems, etc., as well as the quality and efficiency of the provision and maintenance of public services (WB-IFC, 2006).

Based on the concepts previously explained, the adapted analytical framework that will be used in the study is presented below (See Figure 5).

Figure 5. Analytical Tool



Source: Own Elaboration

3. METHODOLOGY

This section will explain the chosen research design for the study, followed by a brief description of the ontological and epistemological position that was taken. Subsequently, the selected research methods will be presented and discussed in detail, as well as the techniques used to analyze the data. Afterwards, the used methodology and methods will be critically assessed regarding reliability and validity, and the encountered limitations will be presented. Finally, ethical considerations that were taken into account throughout the study will be explained.

3.1. Research Design

The study can be categorized as applied research, since it seeks to understand the nature and sources of a social problem -MSEs growth in Bolivia- in order to contribute to theories that could be used to design problem solving programs and interventions in a future (Mikkelsen, 2005).

In view of the nature of my research purpose, I will utilize a deductive approach. Based on what is currently known about Micro and Small Enterprise Growth, several hypotheses were built under the frame of the “productivity and competitiveness” analytical model developed by ILO (2007). These hypotheses will be subjected to empirical scrutiny (Bryman, 2004) through the statistical analysis of a quantitative dataset on Bolivian MSEs. Subsequently, the empirical findings will be analyzed and discussed under the light of qualitative data obtained from previous research and studies. This is supported by the belief that ideas must be tested rigorously before they can be considered knowledge (Ibid.).

The research strategy employed in the present study is primarily quantitative, which is used when the goal is to identify general patterns and relationships through the testing of correlations between variables (Ragin, 1994). Likewise, Mikkelsen (2005) elucidates that quantitative analysis is characterized by measurement of objective facts with a focus on variables. She also explains that quantitative analysis considers many cases and subjects of study and uses statistical analysis. Besides, the researcher does not have a close relation with the objects of study and must be detached in order to provide value-free findings

(Mikkelsen, 2005). All these features apply to the current study so it could be categorized as quantitative. However, since some qualitative analysis is done to complement the quantitative core of the study, it could be argued that a mixed methods approach with a strong quantitative focus is applicable to the current study. As Bryman (2008:588) explains “quantitative and qualitative research are employed in relation to each other so that qualitative research is used to analyze quantitative research and vice versa”. Therefore, it will be considered that the research strategy is a mix methods approach that heavily relies on quantitative analysis.

The research design is based on a survey research, which is defined by Bryman (2004:41) as follows:

“Survey research comprises a cross-sectional design in relation to which data are collected predominantly by questionnaire or by structured interview on more than one case (usually quite a lot more than one) and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables (usually many more than two), which are then examined to detect patterns of association”

A case study was also considered as a research design due to the nature of the research problem; a case study focuses on few cases in depth and uses qualitative methods such as interviews and focus groups in order to explain that particular problem (Gomm, 2000; Bryman, 2004). On the other side, cross-sectional survey investigates a large number of cases to understand patterns of association between variables. Many cases need to be studied in order to achieve empirical generalization of results, which is one of the concerns of cross-sectional survey (Bryman, 2004). Considering that the current study investigates correlation between different variables within a large number of enterprises and quantitative methods will be mainly used to assess these relations, a survey research design is therefore considered more suitable than a case study design.

3.2. Ontology and Epistemology

The study uses a postpositive approach, which claims that causes might influence the outcomes. Besides, the postpositive approach relies on the scientific method, which requires proving theories by specifying narrow hypotheses in order to support or refute the

theory (Creswell, 2003). The current study is concerned with facts, thus it will search for visible objects and the analysis does not include normative or moral questions. This position is aligned to the empirical-analytical epistemological position, which is based on scientifically measurable facts (Scheyvens & Storey, 2003). Since the aim of the study is to understand MSEs growth and to identify the constraints that MSEs face, empirical objects such as use of physical capital and access to financial markets will be studied, which fits empiricism.

3.3. Choice of Research Methods

The Methods that are to be used during the different stages of the study depend upon the purpose and content of the research (Kvale, 1996). So in line with the research purpose, strategy and design, three research methods have been used: Field Observations, Document Review and the Entrepreneurship Survey (ES). The main research method has been the quantitative analysis of the ES, which has been complemented by field observations and documentation reviews.

➤ Field Observations

Field observations took place in Bolivia from September 2009 until January 2010. Observations were limited to commercial and service MSEs located in La Paz and El Alto and there was no systematized procedure to carry out this task. The main purpose was to pre-assess the issues related to Bolivian MSEs in order to choose the focus of the study. During observations, the author was in the customer “role”, so the gathered information was basically an outsider’s perception that served to frame the study’s problem and purpose. Field observations were not consciously used during data analysis phase, though it must be recognized that on a subconscious level, field observations might have influenced the interpretation of the research’s findings.

➤ Documentation review

Documentation review is essential to understand the context of the research problem and to identify the existing theories about MSEs’ growth in Bolivia. Considering the study is deductive and hypothesis needed to be built, it was crucial to be fully aware of the existing

studies as to avoid duplicating a previous research. Additionally, documentation review is useful to ensure that the findings will fit into the current preoccupations regarding the chosen topic and will hopefully be useful in policy making.

Among documentation review, several studies developed about MSEs in Bolivia were consulted; most of them focused on informality issues and fewer had other areas of focus, such as gender issues. However, none of them held a multifocal approach. Local regulations regarding MSEs were also reviewed, such as the “Resolución Ministerial 325/01”, which establishes MSEs’ characteristics, as well as policies designed to promote MSEs’ development, such as the “Integral Policy Framework for MSE’s development”, which is a joint work of different public, private and international cooperation institutions.

➤ **Enterprise Survey (ES)**

Information regarding enterprises in Bolivia was collected during 2006, when 613 firms based in La Paz, Cochabamba and Santa Cruz (the three main cities in Bolivia) from the manufacture, service and commercial sectors were surveyed by an independent agency on request of the World Bank. The survey includes 356 variables, both qualitative and quantitative, which guarantees a broad coverage of the different aspects related to MSEs’ growth. A brief overview of the main characteristics of the ES’s methodology is presented, which is based on information provided by the World Bank (2006, 2007, 2009):

- **Sampling procedure:** In order to determine which enterprises would be surveyed, the stratified random sample technique was used. This method divides population into levels of stratification; in the considered survey these were industry, establishment size, and region. The advantage of this particular method is that it ensures all sub-groups are equally represented in the sample (Nichols, 1991).
- **Sample Size:** Even though there is no clear consensus about the amount of enterprises in Bolivia, it is estimated that approximately 117.857 enterprises exist (INE, 1992). In order to determine the size that the sample should have to be representative of the target population, four factors need to be considered: the population size, the estimated response distribution,

the desired confidence level and the accepted margin of error. Considering that: the response distribution would be 50%, meaning that for each question there are the same possibilities for a yes or a no, the confidence level is 95% and the risk of error is 5%, meaning that there is a 95% certainty that the statistical results are true, and that the target population is 117.857, the recommended sample size is 383 enterprises³. Thus, considering the survey included 613 enterprises, the results derived from it can be considered as representative of the target population and can be generalized to it.

- **Questionnaire Implementation:** The surveys were implemented following a two stage procedure. First a screener questionnaire was done over the phone to determine eligibility and to arrange appointments; secondly a face-to-face interview was conducted with the person in charge of the establishment.
- **Questionnaire Quality Assurance:** In order to ensure correct application of the questionnaire, an explanation of each question was developed and strict instructions were provided as to how the interviewer should proceed. Additionally, the questionnaire was screened to find out if questions were properly worded and understood and the necessary adjustments were introduced. Besides, all interviewers were properly trained and a complex control system based on four different levels of quality checks was utilized.

➤ **Discussion on choice of research methods**

The decision to primarily rely on secondary data, which is the ES, was taken after carefully evaluating the pros and cons of doing so. Even though it must be acknowledged that when using secondary data sources no control over the data collection process is held, benefits from using an existing data based include the possibility to access a comprehensive and representative sample, high-quality data which went through many control phases and mechanisms and cost and time efficiency, among others (Bryman, 2004).

In order to overcome potential bias in information, triangulation methods have been applied. The weaknesses of one method can be compensated by compiling the same

³ <http://www.raosoft.com/samplesize.html>

information with another method or series of methods, so triangulation of qualitative and quantitative methods is key to obtain reliability and neutralize biases (Mikkelsen, 2005). Thus, multiple sources of evidence are considered across the different sections of the study, in a back and forward process.

3.4. Data analysis technique

How the data is analyzed varies according to the study purpose and the character of the data. Since the study aims at understanding patterns of correlation between different variables, statistical analysis will be the core of the research. Thus, in this section some statistical concepts that will be applied throughout the analysis are presented.

- **Data Delimitation:** The ES includes micro, small, medium and big enterprises but for the purposes of the present study, only Micro and Small Enterprises with a maximum of twenty full time employees will be taken into account. Additionally, respondents who provided information that did not seem truthful to the interviewers were also removed. Finally, MSEs who claimed to be part of a larger establishment were extracted from the database because their characteristics might have been different than those of independent MSEs.
- **Variables:** In order to test the hypotheses, the concepts used have to be turned into measurable variables (Bryman 2008). Therefore, concepts have been operationalized in different variables, which are presented in Annex 1.
- **Dependent and Independent Variables:** Independent variables, also called predictors, are those that (probably) influence or affect the outcomes of other variables, while dependent variables are those that are considered as outcomes or results of the independent variables. Whether a variable is dependent or independent depends on the specific relation that is being studied. When results from the statistical analysis are presented, the status of each variable will be clearly indicated.
- **Types of variables:** Variables can be categorical and numerical. Numerical or quantitative variables have a ratio scale where distances between values are identical across the range. Categorical variables can be ordinal or nominal, depending on whether their

categories can be ranked or not, respectively. Different types of variables determine the statistical tools that can be used for their analysis. In order to find details about the types of variables used, see Annex 1.

- **Types of analysis:** Several methods will be used to conduct the analysis, such as descriptive statistics for univariate analysis and comparison of means, crosstabs and ordinary least squares regression regressions for bivariate analysis. For each of these methods, different measures of association and tests of significance will be applied to ensure data quality. The most relevant results will be presented in the Data Analysis and Findings section, while the rest of the results will be presented in Annexes.

- **Index:** In order to analyze the “enabling environment” as an exogenous factor affecting MSEs, an Index will be built. Indexes are useful when there are several categorical variables measuring the same thing and the researcher needs to perform a regression (which requires variables on interval scale). Thus, the different categorical variables can be combined to create a new interval variable as long as they fulfil certain requirements, such as being coded the same way, in the same direction and with missing values defined.

- **Statistical significance:** This concept allows the researcher to estimate how confident one can be that the observed relation between two or more variables is true and is not due to chance. In order to assess the statistical significance of a relation, tests of significance will be used. The P-value is the value that indicates the level of significance and it is a common convention among social researchers to consider a relation significant if the P-value is of less than 5%. This means that there is less than 5 percent risk that the relationship is due to chance.

3.5. Reliability and validity

Reliability and validity are the criteria employed for assessing the quality of social research (Bryman, 2004). Reliability refers to how data is measured and to the degree of consistency and stability of data. Validity, on the other side, is concerned with what is measured, and assesses the level of correlation between what is intended to be investigated and what is actually investigated. Put in other words, validity evaluates the level of correspondence

between the theoretical definition of a certain concept and the translation of it into something empirically measurable.

The study will consider correlations between variables very carefully in order to ensure reliability. It can be said that low correlation between variables means that the measure is unstable and the results must be carefully interpreted (Bryman, 2004). Thus, the study seeks to find high levels of correlation between variables in order to ensure that its findings are reliable.

Cross-sectional research is usually characterized by weak internal validity and strong external validity. Internal validity measures how confident one can be that certain independent variables are responsible for effects in the dependent variables. Since cross-sectional survey only produces associations rather than findings from which causal inferences can be made, establishing causal relations is difficult. However, since the study uses other qualitative information such as literature review and theories, internal validity can be strengthened.

On the other side, external validity is concerned with whether the results of the study could be generalized, which is generally the case when random methods of sampling are used. The current study uses stratified random sampling and its external validity is thus strong, meaning that the results obtained from the sample can be generalized to the entire target population. Finally, the study is also replicable, since all the procedures used across the study will be clearly shown.

3.6. Limitations

Many different limitations were found when carrying out the quantitative part of the study and actions were taken to mitigate these weaknesses, which are presented below:

Table 4. Limitations: Risks and Mitigating factors and actions

| Concept | Risk | Mitigating factors and actions |
|--------------------|--|---|
| Data source | The analysis is mostly based on secondary data and the author had no control over the database survey process. | There was a very strict methodology design for the survey and quality controls were carried out at different stages of the process. Strong attention was paid to the comparison of findings from data analysis with previous |

| | | |
|--|---|---|
| | | studies in order to find important discrepancies or incoherencies, which will be presented in the Discussion Section. As a general rule, in case of doubt further research is advised. |
| Operationalization⁴ of variables | In spite of the fact that the used dataset gives a complete view of the MSEs scenario, there were limitations regarding the use of variables that did not entirely adjust to the defined concepts. | When there were cases in which variables did not entirely represent the concept, clear notes were made about this. Additionally, when it was suitable, different variables were measured to fully represent a concept. |
| Missing data | No responses were present in almost all the answers and might have affected overall results. | This is a common feature of all surveys and those cases with responses such as missing data, not known or not applicable were left outside the analysis. In cases where important effects were observed, this was clearly pointed out and results were analyzed considering this restriction. |
| Causality | When performing bi-variate analysis, it is possible to say something about the significance of the correlation and the direction. However, nothing can be said about causality (which variable causes the variation, independent vs. dependent variable). | In order to overcome causality limitations, theories explaining the proposed causal relations and common sense have been equally used. |
| Timing | Some of the variables are measured for the last fiscal year while others are for the last 3 fiscal years. This is an issue when the independent variable is for a single year and the dependent refers to the 3 previous years. | In such cases, it was assumed that the values assigned to the last fiscal year have been constant over the last three fiscal years, and that both types of variables can be related. However, in such cases, a deep critical assessment was applied to the causality between variables and this was openly commented. |
| Subjective Perceptions | An issue that might be perceived as a major problem by one respondent may be a smaller problem that it is for another respondent who rated it as a minor problem. | Whenever possible, questions that were measured in a quantitative way were chosen over questions measured based on perceptions. However, considering data availability, questions based on perceptions were sometimes used. In order to assess their objective weight, comparison with other quantitative variables was done and later on, results were assessed framed in existing literature and studies. |

⁴ Operationalization is the process of defining ambiguous or fuzzy concepts so as to turn it measurable in form of variables.

3.7. Ethical considerations

Since the study is exclusively based on secondary data, left aside the random observations that took place in the field for “context” purposes, there was no direct relation with the objects being studied. However, ethical considerations go beyond the obvious aspects a researcher should deal with, such as informed consent. Therefore the effects and side-effects of the research are assessed from a 3 angled ethical dimension considering the research’s objects, other researchers and society in general.

As it was stated at the beginning of the study, the research seeks to contribute to the current discussion about MSEs’ dynamics and how to improve their performance. Hence, both Bolivian MSEs and Society can benefit from an increased knowledge of the situation and no negative effects can be foreseen at this point. Additionally, the study was developed using the highest ethical standards and all existing research that was consulted has been adequately acknowledged.

A distinct feature of mixed methods research is the use of diverse types of data at different stages of the study. The present study has substantial amount of qualitative data prior and after the quantitative analysis is done, in order to frame the research questions and hypothesis and to compare and discuss the results of the study with existing findings in the literature, respectively. Hence, it is important to be clear regarding what was found by the present study, what other studies have said before, and what the authors’ opinions are. Special consideration was given to the presentation of data and findings, clearly separating the analysis and presentation of empirical findings, narration of previous research and studies, and personal judgments.

Finally, it is important to recognize that statistical analysis can be very easily managed to orient results in a convenient way. Thus, data was treated in a very cautious way when recoding variables or re-grouping them. Besides, all results are presented in annexes, including non-significant correlations, thus there is a full disclosure of the procedures that were carried out during the study.

4. DATA ANALYSIS AND FINDINGS

This section includes the analysis that was conducted with the quantitative empirical data and presents its main findings. The section is divided into the two research questions proposed by the study, one addressing the importance of MSEs' growth and development and the other one related to the obstacles MSEs face to achieve growth in Bolivia. Due to space constraints, only the most relevant results will be included here, yet a detailed presentation of the analysis can be found in Annexes.

4.1. First Question: Why does MSEs' growth matter?

According to literature review, MSEs in Bolivia account for roughly 29% of the PBI and 85% of the employment (Delgadillo, 2001), being the major source of employment in the country. Hence, many authors agree their development is important as a tool to reduce unemployment and poverty rates in a country where 52% of the urban population lives under poverty lines (Jemio & Choque, 2006).

Thus, it is necessary to analyze if growth in MSEs is actually correlated to an increase in the demand for labour, because as enterprises grow they might choose to invest more in physical capital and technology, thus it may be the case that MSEs' growth would not have such a strong impact on employment.

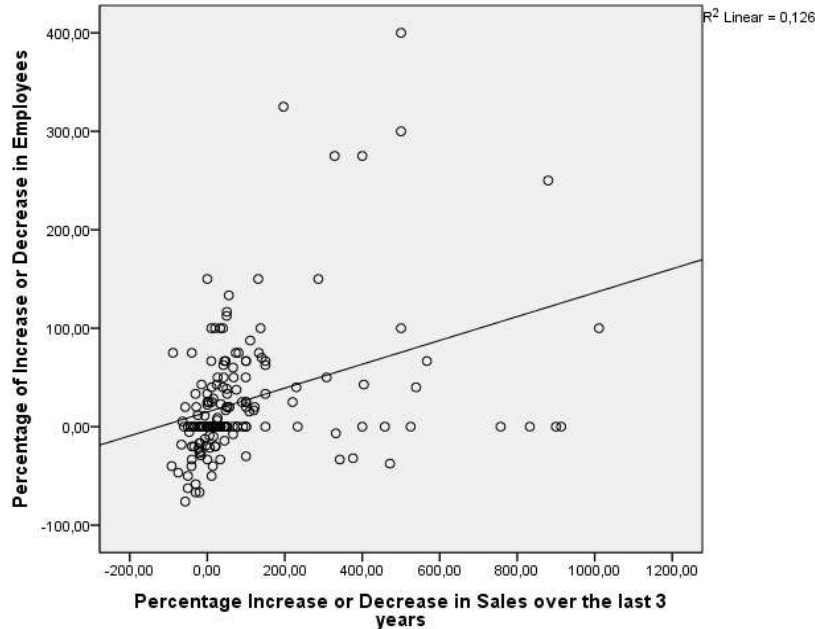
H1: Bolivian MSEs' growth is positively correlated to a higher demand for labour

In order to test the hypothesis, a correlation analysis and a bivariate linear regression using the ordinary least squares method were done between the percentages of variation in sales over the last three fiscal years and the percentages of variation in the number of employees per establishment. Despite the fact that it is recommended to use hours of labour instead of number of employees since it provides more useful information, the selected dataset did not include information referring to number of labour hours employed, hence the amount of employees will be used instead.

Results show a significant correlation between the two variables: those establishments which benefited from higher increases in their levels of sales also increased their labour

force or number of employees in a bigger percentage than those who had lower levels of increase in their annual sales (see Figure 6).

Figure 6. Correlation between Variation in Sales and Variation in Employees



As it can be observed, the R² value is 12,6%, which means that 12% of the changes in the percentage of increase or decrease in the amount of employees can be attributed to changes in the percentage of increase or decrease in the amount of sales⁵. This means that 88% of the variations in the number of employees cannot be explained by variations in sales, and thus other variables are influencing the dependent variable. However, as far as our purpose goes, it is enough to confirm that MSEs' growth is correlated to employment levels in a significant and positive way.

The equation representing the relation is presented in Figure 7, and put in other words, if sales had grown 100% over the last 3 fiscal years, the increase in the percentage of total amount of employees would have been 14,99 (constant) plus 12,1. In total, the amount of employees would have increased by 17%:

⁵ Correlation is significant with a P-value of 0,000 (details in Annex 2). Even though bivariate correlations do not say anything about causality, it is logical to assume that the amount of employees an enterprise will hire will depend, among other things, on their sales.

Figure 7. Formula of correlation between Sales and Employment:



A second part of the analysis involved testing whether variations in sales are also correlated to variations in investment on physical capital. The same method was applied, but unfortunately no significant correlations were found between the two variables (results presented in Annex 2).

➤ **Some thoughts about MSEs' Growth**

Empirical findings show the hypothesis is true and there is indeed a positive correlation between increases in sales and number of employees. Additionally, analysis also shows a lack of correlation between increases in sales and investment in physical capital. Therefore, it can be concluded that as MSEs grow and need more resources, they will favour expenditures in human capital instead of investments in physical capital. This feature enables to characterize MSEs in Bolivia as labour intensive.

4.2.Second Question: What determines or affects MSEs' growth in Bolivia?

It was previously shown that MSEs' growth affects employment, thus it is relevant to understand the dynamics of factors affecting MSEs' growth. In the present sub-section, an assessment will be conducted to understand how the different variables are related to MSEs' performance. The analysis will be split into two sub-questions, one regarding the endogenous factors and a second one related to the exogenous ones.

4.2.1.How do endogenous factors of productivity affect MSEs' performance in Bolivia?

➤ **Financial Capital**

Bolivian MSEs seem to be well integrated into the financial system, according to the survey most of the establishments have a savings or checking account (87%) and almost half of them have a line of credit or loan from a financial institution at the moment (49%). Moreover, when enterprises which did not apply for a credit during the previous fiscal year were asked about the reason for this, the main answer was that they did not need a loan (more than 55%), while the rest of the answers were distributed among high interest rates, difficult procedures and tight collateral requirements, among others. It is worth mentioning that there was significant correlation between perceptions about “access to finance as an obstacle to the current operations of the establishment” and the given reasons for not applying for a loan or credit (Results shown in Annex 3), pointing out that those who saw access to finance as an obstacle did not applied for external funding, while those who did not perceive this as a constrain were the ones who had applied for a loan during the last fiscal year. Considering the current scenario, it is interesting to analyze the sources of external financing for MSEs.

H2: Bolivian MSEs use alternative sources of external financing instead of commercial banks

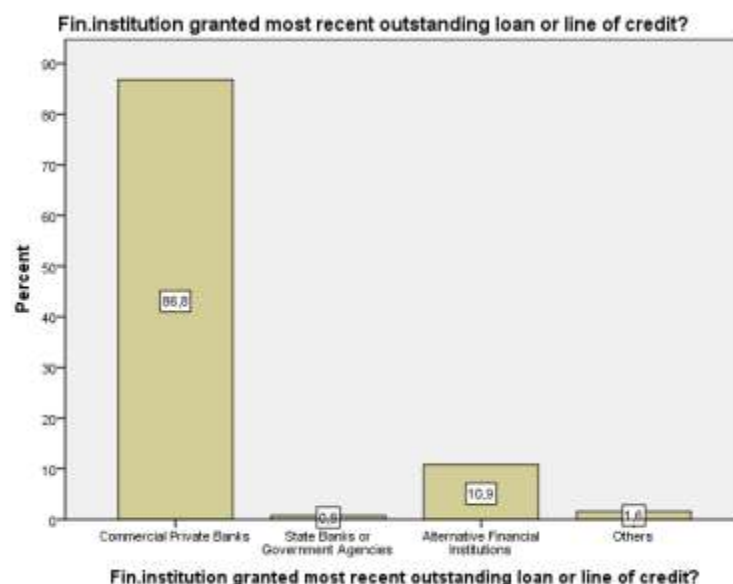
Surprisingly, results based on descriptive statistics show that the vast majority of the companies that had a line of credit or loan had obtained it from a commercial bank, while less than 1% were funded by State or Governmental Banks and 11% was financed by non commercial financial institutions (see Figure 8). Therefore, the proposed hypothesis is false.

It would have been interesting to develop further research regarding the reasons for having such a high percentage of funding from commercial banks and not the rest of the options, especially considering that incredibly extremely high collaterals had been required by banks in order to provide a credit or loan (mean value of 182%⁶ in relation to the loan value or line of credit). However, limitations in the database prevented further analysis regarding these issues so this will be addressed according to literature review.

⁶ Median and Mode were both 200% of the total value of loan or credit (See Annex 3).

To sum up, it must be kept in mind that even though access to finance was mainly identified as a “moderate” constrain by the respondents, 1 out of 2 MSEs are not accessing any funding from a financial institution.

Figure 8. Source of external Funding



➤ Physical Capital

In order to assess the levels of Physical Capital of MSEs, respondents were asked if they had purchased any fixed assets during the last fiscal year, to which half replied affirmatively. However, when they were asked to tell the amount they had spent on acquisitions of machinery, equipment or vehicles during that period more than 60% of the respondents claimed that there were no acquisitions⁷ and 15% of the establishments had invested less than 5% of their total annual sales. Figures are even more drastic if purchases of land and buildings are analyzed: 95% of the respondents stated they had not invested anything on those assets.

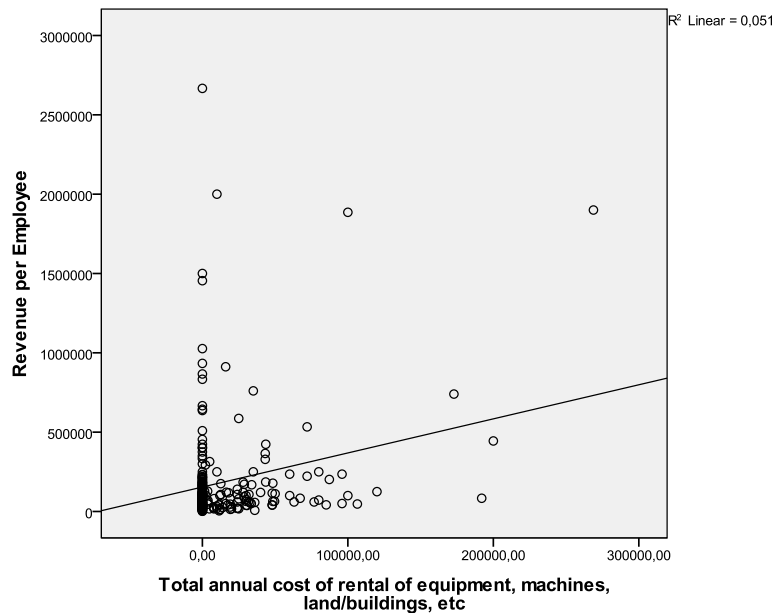
⁷ Please note that missing values explain the apparent contradiction among the percentages in investment. 50% invested in fixed asset, 60% did not invest in Machinery, Equipment or Vehicles and 95% did not invest in land or Building (a potential maximum of 45% could have invested in fixed assets during that period). Detailed information in Annex 4.

Nevertheless, a second option must be considered: leasing or renting physical capital. Since MSEs operate at a low scale and have small demand levels (The World Bank, 2009), buying machines and equipment might be too costly and renting may be more suitable. Interestingly, almost half of the respondents spent money on renting machinery, land and equipment. Considering the current scenario, the following hypothesis will be tested:

H3: Higher investments in physical capital are positively correlated to higher labour productivity

Several regression analyses were made and although no correlations were found for purchases of fixed assets and higher labour productivity, a significant relation was confirmed when considering rental of physical capital, with results showing that those enterprises that had larger expenditures on rental of land/buildings, equipment and machinery benefited from higher levels of revenue per employee (see Figure 8). Put in other words, renting physical capital explains 5% of improvements in workers performance. This percentage is weak and shows that there are other variables influencing revenues per employee, however, it must be acknowledged that access to physical capital is one of them (more information in Annex 4). Thus, the hypothesis is considered as true (though the correlation is very weak).

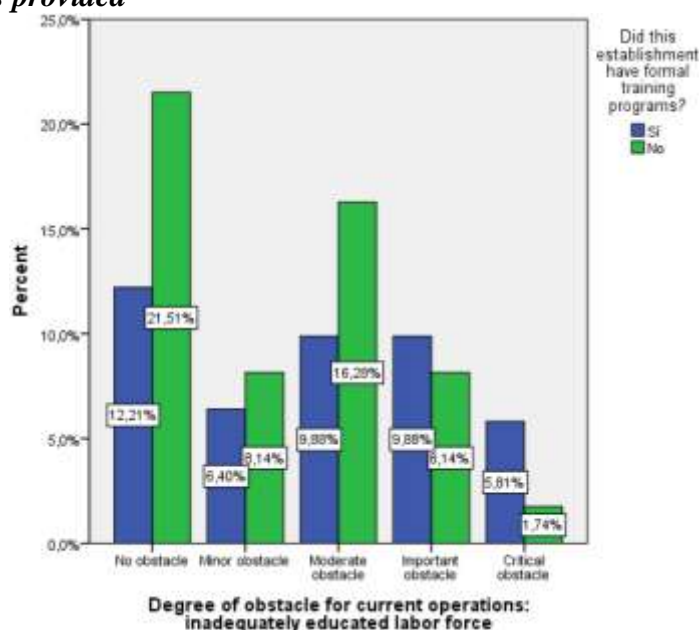
Figure 9. Correlation between expenditures on Physical Capital and Revenue per Employee



➤ Human Capital

Labour costs represented an average of 21% of the total annual sales according to the respondents⁸. Hence, access to human capital is perhaps the most critical aspect to be considered. More than half of the establishments identified inadequately educated labour force as an obstacle for their current operations, out of which a bit less than half claimed it was an important or a very important obstacle. Interestingly, a correlation was found between the level of obstacle of inadequately educated labour that was perceived by the respondents and the formal training programs provided by the establishments. Put in other words, those who did not perceive lack of education of labour force as an obstacle offered less training opportunities, while those who saw this as a critical factor developed formal training programs during the last fiscal year⁹. Figure 10 presents the findings in a clear way.

Figure 10. Relation between obstacle of inadequately educated labour force and formal training programs provided



Based on what was previously discussed, it is interesting to find out how educational levels of labour force are correlated to an increased labour productivity. Thus, the following hypothesis will be tested:

⁸ See Annex 5

⁹ P-value less than 5% and Cramer's V 0,23. More information in Annex 5.

H4a: Education levels of workforce are positively correlated to labour productivity

Since the levels of education is an ordinal variable and labour productivity is an interval variable, comparison of means was done using the appropriate tools. Results showed no significant correlations and are presented in Annex 5. Hence, the hypothesis is not true. It would be necessary to consider informal education levels and previous work experience as well. Since these variables were not available, a second hypothesis related to the manager's experience will be tested:

H4b: Manager's experience is positively correlated to labour productivity

Analysis have shown that top managers tend to have several years of working experience in their sector¹⁰, however, no correlations were found between experience of managers and MSEs' performance and thus the hypothesis is also considered false (See Annex 5).

➤ **Technology and Quality**

It is common to read that MSEs have a very low use of technologies and that the quality of its products is not aligned to any standards, which affects both their productivity and access to markets. However, it was still interesting to test if this was also true for Bolivian MSEs:

H5: Most Bolivian MSEs have very low levels of investment in R&D, technology and quality

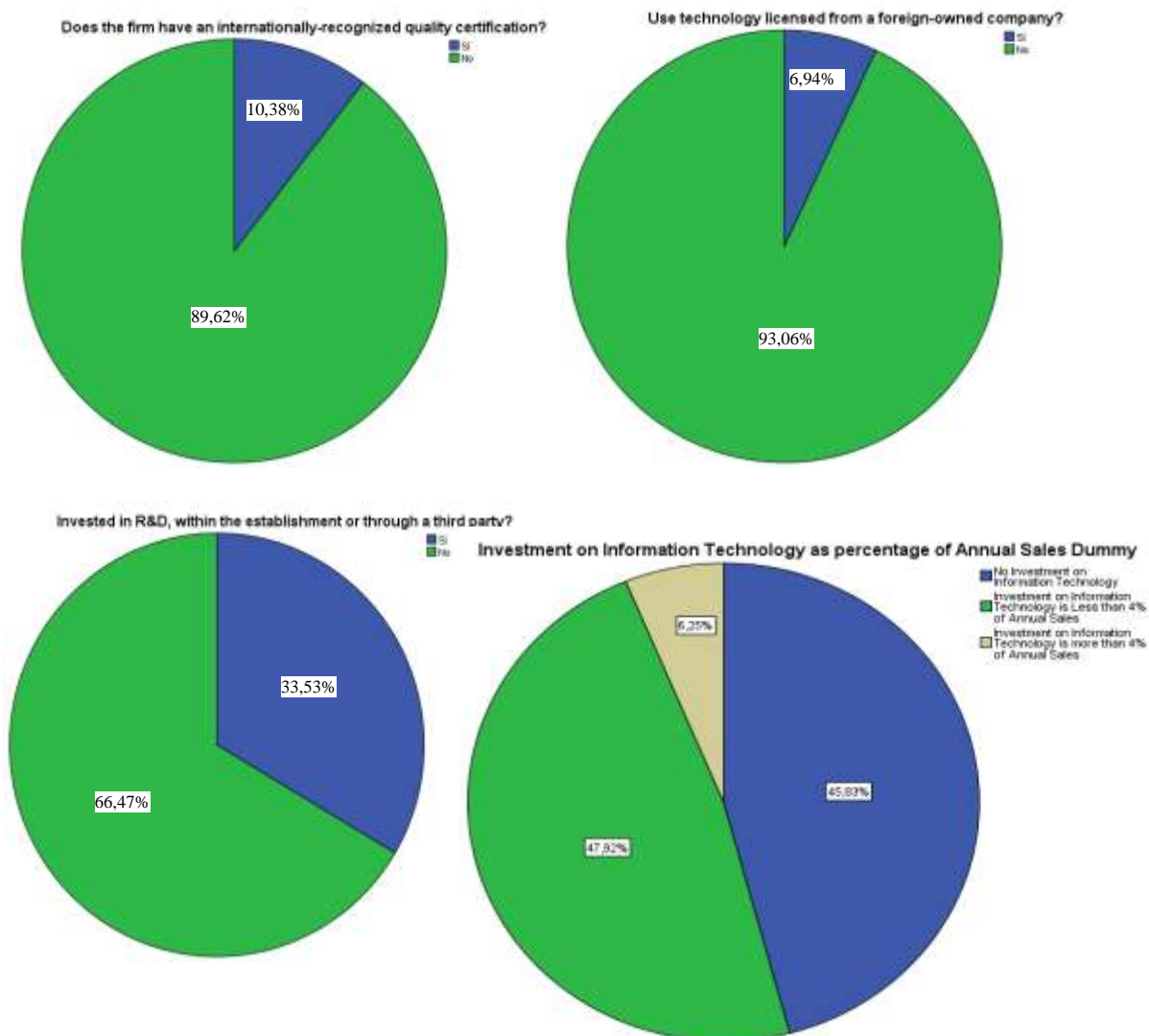
When assessing technology and quality levels, there are two main areas that need to be looked at, one is how much is the company investing in technology and the second one is whether the establishment has any international-recognized quality certification. Regarding the first topic, approximately one third of the establishments confirmed to have made investments in Research and Development (R&D) during the previous year, but only 6% of the respondents invested more than 4% of the annual sales on Information Technology. Besides, almost none of the interviewed establishments is using technology licensed from a foreign-owned company, which would be an indicator of broad access to high-tech. The second topic shows a similar picture: Only 10% of the establishments claimed to have a

¹⁰ Mean experience is 19 years (standard deviation is 11 years), Mode is 20 years and Median is 18 years (see Annex 5)

internationally recognized quality certification, which is nowadays a basic requirement for any MSEs wishing to improve its access to markets, be it by exporting its products or by increasing their participation in supply chains (See figure 11).

As it could be expected, correlations of significance were found between establishments who use technology licensed from a foreign-owned company and those who have an internationally recognised quality certification. Likewise, used of licensed technology was also associated to investment in R&D (Annex 6) . To sum up, even though there is a very small amount of MSEs that present a high-tech and quality profile, the great majority of MSEs are still making little use of top technologies and are characterized by a lack of adhesion to quality standards. Thus, the hypothesis is deemed true.

Figure 11. Quality Certification, R&D and foreign technologies



➤ **Raw material and Supply chain**

Purchases of raw materials and intermediate products used in production account for an average expenditure of 40% of total sales¹¹, which makes this factor the biggest cost for MSEs. In average, 45% of inputs and supplies are bought from small companies -a bit less than a quarter buys 100% from small enterprises and an equal amount does not buy anything from them-, 47% of MSEs' inputs are of domestic origin and 42% from foreign origin, but there are strong variations between the values given by the different respondents¹².

Considering the scenario, the following hypothesis will be tested:

H6: There is a positive correlation between an MSE's amount of sales and the size of its suppliers (smaller MSEs buy materials from smaller companies or intermediaries).

A significant positive correlation was found between amount of sales and tendency to purchase from smaller companies, meaning that MSEs with lower amounts of annual sales buy a bigger percentage of its supplies from small companies or intermediaries, which proves the hypothesis true (Details in Annex 7). However, the regression model only explains 4% of the relation and other variables must be influencing the decision to buy from smaller companies or intermediaries. This will be further assessed in the Discussion section.

➤ **Some thoughts about the endogenous factors of productivity**

From the previous analysis, it can be concluded that the five factors present relevant degrees of constraints to MSEs' growth:

- Access to financial capital, which is perhaps the most critical factor since it allows investment in fixed assets and technology, is only a possibility for half of the enterprises. Conditions to obtain loans, including important collaterals, high interest rates and difficult procedures, are not appealing for MSEs. It was also found that almost all of those who had

¹¹ The Mean is 40%, median is 40% and mode is 50%. See annex 7.

¹² Standard Deviation is around 40%. See annex 7.

credits or loans had obtained them from commercial banks, which indicates that alternative sources of financing have a low impact on MSEs in Bolivia.

- Considering Bolivian MSEs are labour intensive, it is relevant to notice that more than half of the establishments identified that inadequately educated labour force was an obstacle for their current operations. A positive finding was that there was a significant correlation between those who perceived that workers' education needed to be improved with the formal training programs that were offered during the past fiscal year. In spite of this, results showed no correlation between labour productivity and formal education of workers or experience of manager.
- Surveyed MSEs were characterized by a low level of expenditure on fixed assets, technology and quality. Investments in physical capital were very poor over the last fiscal year, with more than half of the population not having invested anything at all on fixed assets. However, those MSEs which had larger expenditures on rental of land/buildings, equipment and machinery benefited from higher levels of revenues per employee. Though the correlation is rather weak, it shows the benefits associated with investment in physical capital.
- Almost none of the surveyed MSEs has a recognized quality certification or uses foreign licensed technology. Even further, only one third of the respondents had invested in Research and Development. On the other side, it was observed that there were a small percentage of MSEs which presented a high tech-high quality profile. Nonetheless, the vast majority of MSEs have low levels of investment in research & development, technology and quality.
- Lastly, interesting patterns were observed between the size of the enterprise and its propensity to buy inputs and raw material from small companies. Assuming that small suppliers are intermediates on the supply chain, it could be deducted that smaller MSEs need to rely upon intermediaries to get their supplies while bigger MSEs can more easily obtain their inputs from direct suppliers.

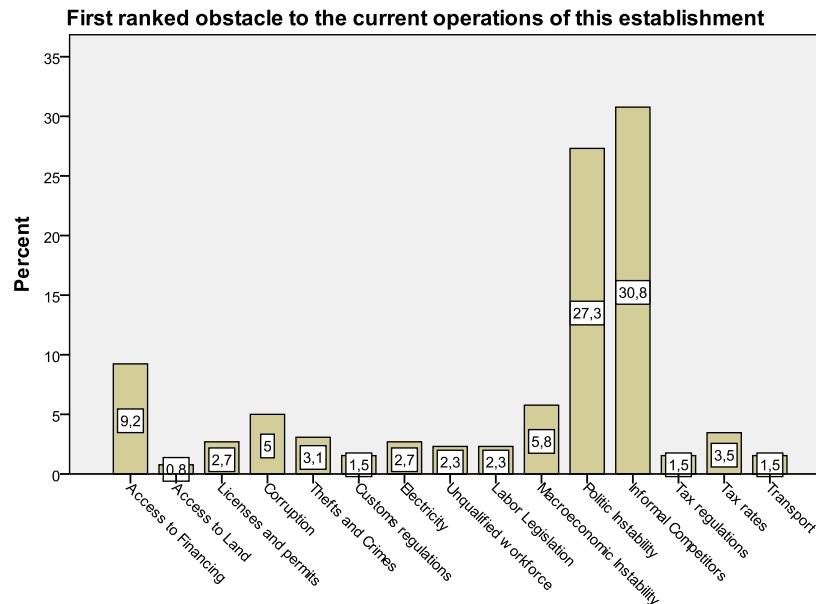
4.2.2. Is there any correlation between an enabling environment and a better performance of MSEs?

So far we have analyzed the endogenous factors affecting MSEs' performance, however in order to see the entire picture it is necessary to consider the external and structural conditions affecting productivity, in other words, those exogenous factors over which MSEs have no control but which still affect impact on their daily operations. Thus, the following hypothesis will be tested:

H7: There is a positive correlation between MSEs exposed to an enabling environment and their performance

During the survey, respondents were asked to identify the main obstacles to their current operations. More than half of the respondents found practices of informal competitors and political instability as the main constrain (see Figure 12), while other commonly identified obstacles were access to financing, macroeconomic instability and corruption.

Figure 12. Exogenous Factors affecting MSEs Operations

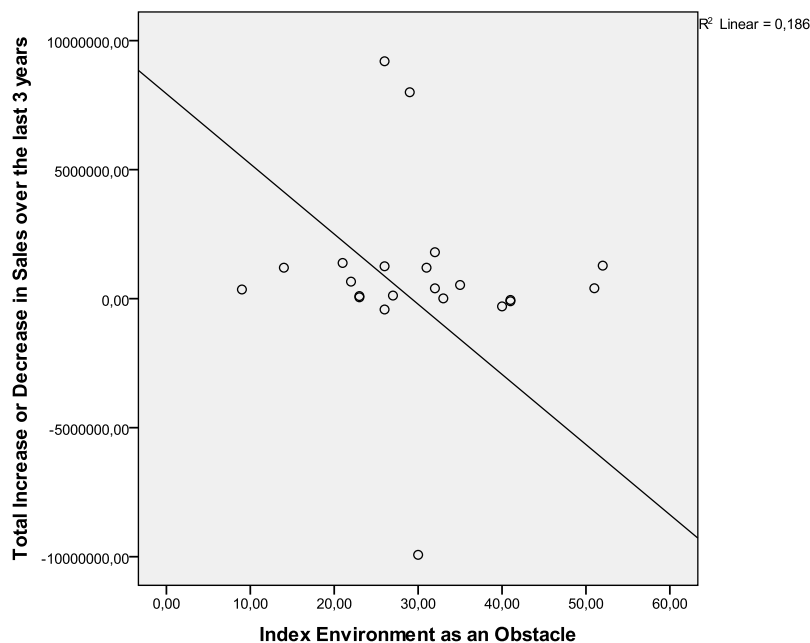


In order to test the hypothesis, an index was created to analyze how the enabling environment as a whole affects MSEs' performance and potential for growth. Fifteen variables measured in the exact same way, with values ranging from 0 to 4 according to the

obstacle level, were added up. Thus, the best enabling environment would have a value of 60 and the worst business conducive environment would have a value of 0. If the respondents did not provide an answer, the interviewers would assign this variable a -9 (missing data) or -7 (does not apply). If the respondent did not rank all of the fifteen variables, that case was left outside the index. As a result of this limitation, only 22 cases were considered in the regression and the index cannot be generalized to MSEs in Bolivia.

A strong correlation was found between establishments who perceived the external and structural conditions as an obstacle for their operations and the variation of the levels of sales that the MSE had experienced during the last three years. Unsurprisingly, establishments exposed to a more enabling environment were those who experienced higher levels of increase in their sales, while those exposed to a less enabling environment had a worst performance (see Figure 13)¹³. Thus, the hypothesis is true but it must be noticed that results cannot be generalized to the rest of the population.

Figure 13. Correlation between obstacles in the environment and MSEs' growth over the last three years



¹³ Detailed results of the correlation are presented in Annex 8

➤ **Some thoughts about the exogenous factors of productivity**

When all the obstacles in the environment are put together creating a variable representing the “Enabling Environment”, a significant correlation was found between the enabling environment and the sales performance over the last three years. However, considering that the index is based on the respondents’ subjective perceptions instead of objective data, it might be the case that those who had a worst performance had a bigger tendency to blame this on exogenous factors, while those who performed well did not perceive any obstacles to their operations in the environment. Thus, exclusively based on this regression, no conclusions can be reached about the role of the enabling environment on MSEs’ performance and findings will need to be carefully framed into existing studies and literature.

If factors are analyzed separately, strong consensus among the respondents can be observed regarding the major constrains for their operations: practices of informal competitors and political instability are the major obstacles for MSEs’ operations, followed by access to finances, macroeconomic instability and corruption.

4.3. Results Summary

So far, hypotheses have been tested against empirical data and the findings have been presented for each of the hypotheses. In the next section, those findings will be discussed in a critical way, considering the existing research and studies. So before moving on to the discussion, a brief summary of the analysis’ results is included in Table 5.

Table 5. Hypotheses and Results

| Hypothesis | Results |
|--|------------------------------|
| H1: Bolivian MSEs’ growth is positively correlated to a higher demand for labour. | Supported. |
| Financial Capital - H2: Bolivian MSEs use alternative sources of external financing instead of commercial banks. | Not Supported. |
| Physical Capital - H3: Higher investments in physical capital are positively correlated to higher labour productivity. | Supported. Weak Correlation. |
| Human Capital - H4a: Education levels of workforce are positively correlated to labour productivity. | Not Supported. |

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| | |
|--|------------------------------|
| Human Capital – H4b: Manager’s experience is positively correlated to labour productivity. | Not Supported. |
| Technology and Quality - H5: Most Bolivian MSEs have low levels of investment in research & development, technology and quality. | Supported. |
| Raw Materials and Supply Chain - H6: There is a positive correlation between an MSE’s amount of sales and the size of its suppliers (smaller MSEs buy materials from small companies or intermediaries). | Supported. Weak Correlation. |
| H7: There is a positive correlation between MSEs exposed to an enabling environment and their performance. | Limitedly supported. |

5. DISCUSSION

In this section, the findings obtained from the data analysis will be critically discussed under the light of existing literature and previous studies. First it will discuss the importance of MSEs in the Bolivian context and then it will address the factors affecting MSEs' growth.

➤ **Why does MSEs' growth matter?**

When assessing the existing literature on MSEs' development, major controversies were found both in the international and national arena regarding the role of MSEs for economic growth and poverty reduction. While some claimed that MSEs brought little benefits for the overall development of a country and suggested that efforts should be placed in SMEs instead (Zevallos & Velazco, 2003; Nisttahusz, 2002), others sustained that MSEs were important tools for poverty reduction and equitable development (Jeppesen, 2005; Borda & Ramirez, 2006; Mead & Liedholm, 1998).

Framed on those critics, this study has analyzed empirical data collected from two hundred and sixty one Micro and Small Enterprises in Bolivia in order to find out if there was indeed any correlation between the growth of MSEs and the amounts of labour they used. In order to do this, a linear bivariate regression was done and results showed that when an MSE had experienced growth in the last three fiscal years (expressed as percentage of increase of annual sales over the last three years), this had been correlated by an increase in the total number of employees over the same period. Even though this relation was significant, its strength was only moderate. Therefore, other variables are related to variations in employment besides the amount of sales, which is logical considering the effects that factors such as labour legislation, production capacity and many other factors have regarding the decision to hire or fire any employee.

Considering that the sample is representative of the entire population, results can be extended to the national MSE's sector. Therefore, it is possible to claim that MSEs' growth has a direct impact on employment levels. Since MSEs are one of the sectors where the poor are employed (Jemio & Choque, 2006), it could also be suggested that MSEs are indeed a

tool for pro-poor growth, following ILOs reflections. However, based on the study findings, nothing can be said about the quality of labour provided by MSEs. Jemio & Choque (2006) suggest that most workers employed in MSEs are actually not remunerated. Consequently, it would be hasty to make conclusions about the role of MSEs in equitable pro-poor growth since the study findings are limited to having proved the effects of MSEs' growth in employment levels.

Nonetheless, considering that MSEs account for most of the enterprises in Bolivia (INE, 1992) and they provide most of the employment (Delgadillo, 2001), it is particularly important to understand the dynamics of MSEs and the factors that are affecting its growth and performance. Consequently, a discussion on the determinants of MSEs' growth in Bolivia, according to the study findings and the existing literature, will follow.

➤ **What determines or affects MSEs' growth in Bolivia?**

Taking into account the major relevance of Bolivian MSEs as sources of employment and income, the different factors affecting their performance were analyzed. In order to carry out this task, an analytical framework was built on the bases of ILO's model of systemic competitiveness (2007). Some of the variables included in the model were regrouped in order to facilitate the data analysis and to align it with the available information in the database. According to the model, two sets of variables affect MSEs' productivity and competitiveness, endogenous and exogenous factors. The classification of a factor as internal or external depended on whether the establishment has or could have some degree of control over them. Thus, the analysis was conducted assessing the two types of factors. In order to contextualize the findings and answer the main research question, discussions will follow regarding the analysis' findings for each type of factor.

✓ **How do endogenous factors of productivity affect MSEs' performance in Bolivia?**

Based on the findings, it can be stated that Bolivian MSEs are characterized by a relatively low use of external financing, low levels of expenditure on fixed assets, technology and

quality, and an intensive use of unqualified labour as their main resource to achieve results, all of which explains their low levels of productivity.

Access to financial capital, which is perhaps the most critical factor since it allows investment in fixed assets and technology, is only a possibility for half of the enterprises. Although the surveyed establishments which had not applied for a credit during the previous year stated that they did not need one, this should be understood in a context of discouraging extremely high collaterals, high interest rates and bureaucracy procedures (Nisttahusz, 2007). Andersen & Muriel (2007) support this by saying that access to finances by itself is not the problem, since there is a very active micro-credit industry in Bolivia, yet its terms are so unattractive that enterprises avoid them. They also explain that Bolivian banks offer better terms, but micro-entrepreneurs have difficulties complying with the requirements, especially regarding proof of steady income and collaterals. These findings are aligned to Vandenberg (2009), who explains that tight credit is one of the major pressures faced by MSEs.

Data analysis also showed that the vast majority of MSEs who had a line of credit or loan had obtained it from commercial banks. Unfortunately, limitations in the dataset did not allow conducting further research on the reasons for using commercial banks instead of alternative sources of financing. Lending NGOs are an alternative to commercial banks, which provide loans to establishments which would not be able to access the financing market due to lack of collaterals and credit history (Al-Madhoun & Analoui, 2003).

Considering that half of the surveyed establishment are not using any loans or credits from financial institutions, it would be interesting to investigate and maybe promote alternative sources of financing, such as non commercial banks and state-owned banks specialized in MSEs, which might offer enterprises better conditions for accessing a loan or credit, such as decreasing the required collaterals and interest rates.

However, although existing research on the direct constrains that MSEs in developing countries face repeatedly highlights financial issues as a high priority, it is clear that finance cannot be taken as the only factor hindering development of MSEs (ILO, 2007). In Bolivian case, human labour could be considered as the most critical endogenous factor, since MSEs

are labour intensive and findings from data analysis show that a high percentage of establishments identified unqualified labour as an obstacle for their current operations.

According to ILO, “Human talent is the single most important productive factor in today’s economy” (ILO, 2007:4), specially taking into account that labour inputs account for more than 65% of the total inputs in enterprises from developing countries (McKinsey, 2002). The good news are that in Bolivia there is plenty of labour, though it is poorly qualified and unspecialized (Nisttahusz, 2007). Based upon these statements, a hypothesis correlating formal educational levels of workforce to labour productivity was tested with no significant results. However, other variables should be considered when assessing labour force quality, such as the years of previous experience and non-formal educational programs. Limitations in the dataset prevented this analysis, so document review was taken into account.

Previous studies developed in Bolivia claim that low educational levels observed in labour force have hindered increases in productivity and income, and attribute this issue to the lack of complementary educational programs focusing on adult education and technical training (Jemio & Choque, 2006). Since it is proved that that a higher level of labor productivity (output per employee) results in increased wages (OECD, 2004), it is worth to place more efforts in training workforce.

On the other side, enterprise management skills are also a relevant factor to be considered. MSEs in Bolivia are conducted based on intuition and experience, lacking use of professional techniques and management tools (Nisttahusz, 2007). Analysis was made to test the relation between the experience managers had running similar business and the performance of MSEs, yet no significant correlations were found. In spite of this, relevant previous studies provide evidence that managers’ experience does significantly affect MSEs’ growth: (i) Parker (1995) reported that Kenyan entrepreneurs who had previous experience of at least seven years had higher probabilities of growing their establishment faster than those without experience; (ii) Bates (1990) found that educational level of the establishment owner is positively related to small firm longevity (McPherson, 1996); (iii) McPherson (1992) showed that entrepreneurs who had received some vocational training expanded their MSEs faster than those without such training. On the other side, studies

conducted by Mean & Liedholm (1998) found no correlation between entrepreneurs who had completed primary school and MSE's expansion. Considering the findings of the current study and previous studies, it seems like managers' formal education, training and experience must be related in some way to MSEs' performance, and thus it seems necessary to carry out further study on the characteristics of Bolivian MSEs' managers and their effects on MSEs' growth.

So labour is indeed a critical factor affecting MSEs' performance and growth, but other factors still need to be addressed. Nisttahusz (2007) states that obsolete technology of machines and equipment are other factors negatively affecting Bolivian MSEs productivity. Additionally, a study developed in Bangladesh also found that "firms with R&D activities and quality certifications have higher levels of total factor productivity" (Fernandez, 2006:1). Moreover, OECD (2004) claims that productivity can be raised by innovation and the introduction of new technology. In fact, multiple authors suggest that improvements in technology are the cause of growth in enterprises (Abraão, 2001; Meyer-Stamer and Waltring, 2002; Yong, 2003; Aguilar & Elizondo, 2009).

Findings of the study show that despite the fact that a positive significant correlation was found between establishments which had rented machines, equipment or other types of physical capital and levels in labour productivity (expressed as revenues per employee), Bolivian MSEs' expenditures in fixed assets, research and development, high-tech and quality were all extremely low among the respondents.

A last endogenous factor that needs to be analyzed is purchases of raw materials and intermediate products used in production, which account for an average expenditure of 40% of total sales, being by far the biggest operative cost for MSEs. According to Nisttahusz Antequera (2002), provision of raw materials and supplies to Bolivian MSEs is not done at convenient prices and with adequate quality.

Access to raw material and supply chain tends to be difficult for MSEs due to their low scale of operations and atomization (The World Bank, 2009). MSEs must use intermediaries to obtain the supplies and raw material they need, which increases their production costs and thus affects their levels of competitiveness. The present study found

interesting patterns between the size of the enterprise and its propensity to buy inputs and raw material from small companies, which indicates that bigger sized MSEs might have better access to the supply chain, avoiding intermediaries when buying supplies.

To sum up, it is difficult to establish an order of importance in which factors should be prioritized when analyzing MSEs' growth, since they all impact their performance in a different way. It could be said that qualified and trained labour is the key component in any productive enterprise, but it must be accompanied by adequate financial resources that will enable enterprises to access technologies that will improve their productivity levels. Besides, access to affordable, timely and good quality raw materials will also impact MSEs performance. Aguilar & Elizondo (2009) sustain that public policy should focus on three factors to increase SMEs productivity, which are training programs, credit access and technological updating. Hence, constraints related to endogenous factors of productivity need to be addressed in a joint and complementary manner together with exogenous factors, which leads us to the second question.

✓ Is there any correlation between an enabling environment and a better performance of MSEs?

“All enterprises are part of society; they shape and are shaped by the communities in which they operate” (ILO, 2007:v). Consequently, exogenous factors affect MSEs' performance and it is important to study the relation.

According to the present study, there was a strong correlation between the perceptions of respondents about the environment as an obstacle for their operations and the performance of the enterprise measured as increase or decrease in levels of sales over the previous three fiscal years. However, important limitations were found when performing the data analysis and results must hence be carefully framed in existing literature and previous studies.

Literature explains that a good business enabling environment, which is characterized by open and predictable markets, non-corrupt governments, stable political institutions and a trusted legal system, among many others, will enable entrepreneurs to grow their business (ILO, 2007). Additionally, OECD (2004) suggests that environments where institutions and

policies reduce the cost of doing business are those that provide incentives for investment and lead pro-poor growth.

Nonetheless, when the enabling environment is analyzed, it is necessary to keep in mind that the MSME sector is highly varied; small enterprises have unequal resources and capacities, thus policies and interventions will have different effects according to their heterogeneity (Audretsch et al., 2009; ILO, 2007). Formal establishments working within the legal frameworks can more easily benefit from changes in the policy environment regarding access to formal credit institutions, special tax regulations and social security programs, while informal are more likely to benefit from policies aimed at improving infrastructure (Vandenberg, 2009).

Regardless of the different characteristics among MSEs, previous studies have demonstrated that the institutional framework including political, social and economic conditions affects chances of success of MSMEs (Amin & Thrift, 1995; Nkya, 2003; Aidis, 2005). Other studies developed on different economies of Eastern Europe and Central Asia found that productivity differences among countries could be explained by differences in the investment climate, which encompasses the policy, institutional and regulatory environment in which businesses must operate. Basically, a positive investment climate decreases the cost of doing business and provides more certainty regarding investments (Bastos & Nasir, 2004). Moreover, Roxas et al. (2008) explain that environmental conditions shape the strategic choices enterprises take, influencing the scale of operation, allocation of resources and overall operational performance.

According to the present study, the major constraints or obstacles perceived in the environment by MSEs were Competition Practices and Political Instability.

Bolivia is known for its fragile economy and its political and social instability. Governments have unclear rules and are conditioned by social and political pressures that hinder good governance (Borda & Ramirez, 2006). Moreover, political and economic instability in developing countries characterized by shifting policies and strategies hinders investment planning and generates recurrent crises (Zevallos & Velazco, 2003).

Zevallos & Velazco (2003) also attribute disloyal competition practices to the weak institutions, at least partly. Competitive pressure is defined by Bastos & Nasir (2004) as “the most critical factor in the investment climate”, since it accounts for more variations in productivity levels than other constraints such as infrastructure. The World Bank provides a very detailed explanation on why competition practices are such a fierce obstacle:

“There are no formal barriers to entry or formal regulations for many sectors, meaning almost anybody can set up shop and compete. In addition, the lack of property rights allows the competition to copy products at no risk. Hence, competition is on price, quality, innovation, location, and services. As a consequence, profits are driven to a minimum, and those who cannot compete quickly go out of business.” (The World Bank, 2009:59).

Nisttsahusz (2002) has a similar view, adding that workers tend to become the competence after having learnt how the business works while they were employees, since entry barriers are poor in some sectors. This affects competition negatively, because it is not the sort of healthy competition that encourages innovation but the sort that pushes enterprises to bankruptcy.

So could we say that the exogenous factors of productivity, meaning the enabling environment, are more critical for MSEs development than the endogenous factors? ILO plays with this notion during its study, stating that “it appears that, irrespective of levels of development, business environment factors as a group are a greater determinant of differences in competitiveness across countries than are enterprise-level factors.” (ILO, 2007:67). However, later on the study clarifies that a good enabling environment by itself is not sufficient to create wealth, since it only provides the opportunity to do so. And claims that the power to create wealth remains with enterprises and the people who “who own, manage and work in them.” (ILO, 2007:56). So based on the data analysis that was previously conducted and document review, it is concluded that both endogenous and exogenous factors are determinants of MSEs’ growth in Bolivia.

6. CONCLUSIONS

The aim of the study was to seek for a theoretically sound and empirically validated explanation of the relevance of MSEs' growth in the Bolivian context as well as to understand the different factors affecting their performance. Based on existing literature and studies, and framed under the Systemic Competitiveness model, several hypotheses were developed and tested. In order to do so, a mixed methods approach with a primarily quantitative element was used. The results of the statistical analysis were then combined with document review in order to contextualize and complement the findings.

The study concludes that MSE's growth has a direct impact on employment levels in Bolivia, indicating that as MSE's increase their sales, they need more workforce. Bolivian MSEs are labour intensive as opposed to capital intensive, which makes them an important tool in the fight against unemployment. However, based on the study findings, nothing could be said about the quality of labour provided by MSEs and it would be hasty to make conclusions about the role of MSEs in equitable pro-poor growth.

Results also showed that Bolivian MSEs are characterized by a relatively low use of external financing, low levels of expenditure on fixed assets, technology and quality, and an intensive use of unqualified labour as their main resource to achieve results, all of which negatively affects their productivity. Additionally, the environment is not conducive for business development. Political Instability, Competition Practices and Access to Finances were identified as the main obstacles for MSEs' operations and a correlation was found between the enabling environment and MSEs' performance. However, these results could not be generalized due to limitations in the amount of valid responses.

Considering that some analysis could not be performed due to lack of information in the dataset, it would be interesting to complement this study with further research based on qualitative methods such as focus groups, in order to obtain deeper explanations regarding MSEs' financial choices, better understand the relation between informal education and labour productivity and gather more information about the enabling environment's impact on MSE's performance in order to generalize the results.

However, despite the encountered limitations, it was possible to answer both research questions. To sum up, MSE's growth does matter because it generates employment and thus, it should be adequately promoted. In order to do so, both internal and external factors constraining MSE's development must be equally and jointly addressed with appropriate policies and strategies.

Word Count: 14.845

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Annex 1 – Questions and variables used¹⁴

Table 6. Questions used and type of variables

| Code | Question | Answer | Type of Variable |
|------|--|---|------------------|
| d2 | In fiscal year [insert last complete fiscal year], what were the total annual sales of this establishment? | Number | Numerical |
| l1 | How many permanent, full-time employees did this establishment employ fiscal year [insert last complete fiscal year]? | Number | Numerical |
| n3 | In fiscal year [insert from last complete fiscal year three years back], three complete fiscal year's ago, what was total annual sales for this establishment? | Number | Numerical |
| l2 | How many permanent, full-time employees did this establishment employ three fiscal years ago year [insert complete fiscal year 3 ago]? | Number | Numerical |
| k30 | Is access to financing, which includes availability and cost (interest rates, fees and collateral requirements), No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment? | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| k6 | Now let's talk about the establishment's current position. At this time, does this establishment have a checking and/or saving account? | Yes-No | Nominal |
| k8 | At this time, does this establishment have a line of credit or loan from a financial institution? | Yes-No | Nominal |
| k9 | Referring to this a line of credit or loan what type of financial institution granted this loan? | 1- Private commercial Banks 2- State-owned banks and/or government agency 3- Non-bank financial institutions 4- Others | Nominal |
| k13 | Referring only to this most recent line of credit or loan, did the financing require collateral? | Yes-No | Nominal |
| k15 | Referring only to this most recent line of credit or loan, what was the approximate value of the collateral required as a percentage of the loan value or the value of the line of credit? | Number | Numerical |
| k17 | If in fiscal year [insert last complete fiscal year], this establishment did not apply for line of credit or loan, what was the main reason? | 1- No need for a loan 2- Complex application procedures 3- Interest rates are not favourable 4- Collateral requirements are unattainable 5- Size of loan and maturity are insufficient 6- Did not think it would be approved 7- Other | Nominal |
| K4 | In fiscal year [insert last complete fiscal year], did this establishment purchase fixed assets, such as machinery, vehicles, equipment, land or buildings? | Yes -No | Nominal |
| n5a | In fiscal year [insert last complete fiscal year], what was the total annual expenditure for purchases of Machinery, vehicles and equipment (new and/or used) | Number | Numerical |
| n5b | In fiscal year [insert last complete fiscal year], what was the total annual expenditure for purchases of Land and buildings | Number | Numerical |
| n2d | For fiscal year [insert last complete fiscal year], please provide the following information about this | Number | Numerical |

¹⁴ All variables had missing values defined, which were -9 for no answer, -8 for not known and -7 for not applicable.

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| | | | |
|------|---|--|-----------|
| | establishment: Total annual cost of rental of land/buildings, equipment, furniture. | | |
| b7 | How many years of experience working in this sector does the top manager have? | Number | Numerical |
| l9 | What is the average educational attainment of a typical production worker employed in this establishment? | 1- 0 to 3 years 2- 4 to 6 years 3- 7 to 12 years 4- 13 years and more | Ordinal |
| l10 | Over fiscal year [insert last complete fiscal year], did this establishment run formal training programs for its permanent, full-time employees? | Yes-No | Nominal |
| l30b | Are labour regulations No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment? Inadequately educated workforce | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| n2a | For fiscal year [insert last complete fiscal year], please provide the following information about this establishment: Total annual cost of labour (including wages, salaries, bonuses, social payments) | Number | Numerical |
| b8 | Does this establishment have an internationally-recognized quality certification? | Yes-No | Nominal |
| le8a | In fiscal year [insert last complete fiscal year], did this establishment spend on research and development activities, within the establishment or other companies contracted? | Yes-No | Nominal |
| n5c | In fiscal year [insert last complete fiscal year], what was the total annual expenditure for purchases of: Information technology (computers, telecommunications, software) | Number | Numerical |
| e6 | Does this establishment at present use technology licensed from a foreign-owned company? | Yes-No | Nominal |
| ld11 | In fiscal year [insert last complete fiscal year], what percent of this establishment's material inputs and supplies was purchased from small firms (less than 50 workers)? | Number | Numerical |
| d12a | In fiscal year [insert last complete fiscal year], as a proportion of all of the material inputs and/or supplies purchased that year, what percent of this establishment's material inputs and/or supplies were of domestic origin | Number | Numerical |
| d12b | In fiscal year [insert last complete fiscal year], as a proportion of all of the material inputs and/or supplies purchased that year, what percent of this establishment's material inputs and/or supplies were of domestic origin | Number | Numerical |
| n2e | For fiscal year [insert last complete fiscal year], please provide the following information about this establishment: total annual cost of raw materials and intermediate goods used in production | Number | Numerical |
| m1a | You have indicated that several obstacles affect the operation of this establishment. Here is a card with the obstacles I mentioned throughout the interview. Please tell me the three that you think are currently the biggest problem, beginning with the worst of all three. Most serious obstacle | Several Obstacles | Nominal |
| g30a | Please tell me if you think that access to land is No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment. Access to land | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| j30c | What is the level of obstacle of the next items to the functioning of this establishment? Business licensing and permits | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| i30 | Please tell me if you think that crime, theft and disorder is No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment. | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| j30a | What is the level of obstacle of the next items to the functioning of this establishment? Tax rates | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| l30a | Are labour regulations No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment? Labour regulations | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| d30b | The customs and trade regulations are No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment? | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |

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| | | | |
|------|---|---|---------|
| j30b | What is the level of obstacle of the next items to the functioning of this establishment? Tax administration | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| d30a | Is transportation, of goods, supplies, inputs and workers, No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment? | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| j30e | What is the level of obstacle of the next items to the functioning of this establishment? Political instability | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| j30d | What is the level of obstacle of the next items to the functioning of this establishment? Macroeconomic instability | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| j30f | What is the level of obstacle of the next items to the functioning of this establishment? Corruption | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| e30 | Do you think that the practices of competitors in the informal sector are No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment? | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |
| c30a | Is electricity No Obstacle, a Minor Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment?. | 0 (No obstacle) to 4 (Very severe obstacle) | Ordinal |

Table 7. New variables

| Code | Variable | How? | Type of Variable |
|-----------|---|---|------------------|
| ISP | Percentage of Increase or Decrease in Sales | $(d2 - n3) * 100 / n3$ | Numerical |
| IEP | Percentage of Increase or Decrease in Employees | $(l1 - l2) * 100 / l2$ | Numerical |
| EMSP | Expenditures in machines as percentage of sales | $n5a / d2 * 100$ | Numerical |
| ELSP | Expenditures in land as percentage of sales | $n5b / d2 * 100$ | Numerical |
| ERMLSP | Expenditure in rental as percentage of sales | $N2d / d2 * 100$ | Numerical |
| PLPLFY | Labour Productivity | $l1 / d2 * 100$ | Numerical |
| LAN | Labour cost as percentage of annual sales | $n2a / d2 * 100$ | Numerical |
| ITPS | Expenditure on information as percentage of annual sales | $n5c / d2 * 100$ | Numerical |
| ITPSDummy | Expenditure on information as percentage of annual sales dummy | ITPS recoded. 0%, <4% and >4% | Numerical |
| RMPS | Total annual cost of raw materials and intermediate goods used in production as % sales | $n2e / d2 * 100$ | Numerical |
| EO | Index 15 variables | $k30 + l30b + g30a + j30c + i30 + j30a + l30a + d30b + j30b + d30a + j30e + j30d + j30f + e30 + c30a$ | Numerical |
| IST | Total Increase or Decrease in Sales | $d2 - n3$ | Numerical |

Annex 2 – Analysis of MSEs’ growth relevance

1- Correlation between Sales and Labour

Model Summary

| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|------------|---|-------------------|----------|-------------------|----------------------------|
| dimension0 | 1 | ,356 ^a | ,126 | ,121 | 64,86638 |

a. Predictors: (Constant), Percentage Increase or Decrease in Sales over the last 3 years

ANOVA^b

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1 | Regression | 101127,510 | 1 | 101127,510 | 24,034 | ,000 ^a |
| | Residual | 698469,368 | 166 | 4207,647 | | |
| | Total | 799596,877 | 167 | | | |

a. Predictors: (Constant), Percentage Increase or Decrease in Sales over the last 3 years

b. Dependent Variable: Percentage of Increase or Decrease in Employees

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients |
|-------|--|-----------------------------|------------|---------------------------|
| | | B | Std. Error | Beta |
| 1 | (Constant) | 14,997 | 5,595 | |
| | Percentage Increase or Decrease in Sales over the last 3 years | ,121 | ,025 | ,356 |

a. Dependent Variable: Percentage of Increase or Decrease in Employees

2- Correlation between Sales and Investment in Physical Capital

| | | Annual expenditure on purchases of: Machinery, vehicles and equipment | Percentage Increase or Decrease in Sales over the last 3 years |
|---|---------------------|---|--|
| Annual expenditure on purchases of: Machinery, vehicles and equipment | Pearson Correlation | 1 | -,082 |
| | Sig. (2-tailed) | | ,291 |
| | N | 246 | 166 |
| Percentage Increase or Decrease in Sales over the last 3 years | Pearson Correlation | -,082 | 1 |
| | Sig. (2-tailed) | ,291 | |
| | N | 166 | 168 |

Annex 3 - Financial Capital Analysis

Does this establishment have a checking and/or saving account?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | Yes | 228 | 87,4 | 87,4 | 87,4 |
| | No | 33 | 12,6 | 12,6 | 100,0 |
| | Total | 261 | 100,0 | 100,0 | |

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Have a line of credit or loan from a financial institution?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|---------|-----------|---------|---------------|--------------------|
| Valid | Yes | 129 | 49,4 | 49,6 | 49,6 |
| | No | 131 | 50,2 | 50,4 | 100,0 |
| | Total | 260 | 99,6 | 100,0 | |
| Missing | No sabe | 1 | ,4 | | |
| Total | | 261 | 100,0 | | |

Fin.institution granted most recent outstanding loan or line of credit?

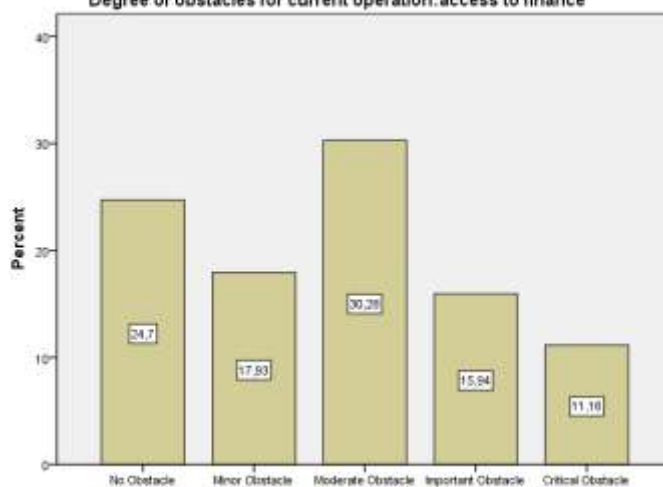
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid | Commercial Private Banks | 112 | 42,9 | 86,8 | 86,8 |
| | State Banks or Government Agencies | 1 | ,4 | ,8 | 87,6 |
| | Alternative Financial Institutions | 14 | 5,4 | 10,9 | 98,4 |
| | Others | 2 | ,8 | 1,6 | 100,0 |
| | Total | 129 | 49,4 | 100,0 | |
| Missing | System | 132 | 50,6 | | |
| Total | | 261 | 100,0 | | |

Statistics

Value of collateral as % of most recent outstanding loan?

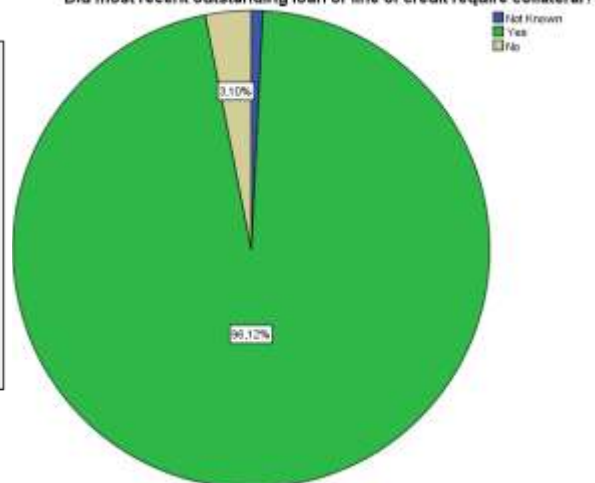
| | | |
|------------------------|---------|-----------|
| N | Valid | 124 |
| | Missing | 137 |
| Mean | | 182,68 |
| Median | | 200,00 |
| Mode | | 200 |
| Std. Deviation | | 138,849 |
| Variance | | 19279,066 |
| Skewness | | 1,726 |
| Std. Error of Skewness | | ,217 |
| Kurtosis | | 5,586 |
| Std. Error of Kurtosis | | ,431 |

Degree of obstacles for current operation:access to finance

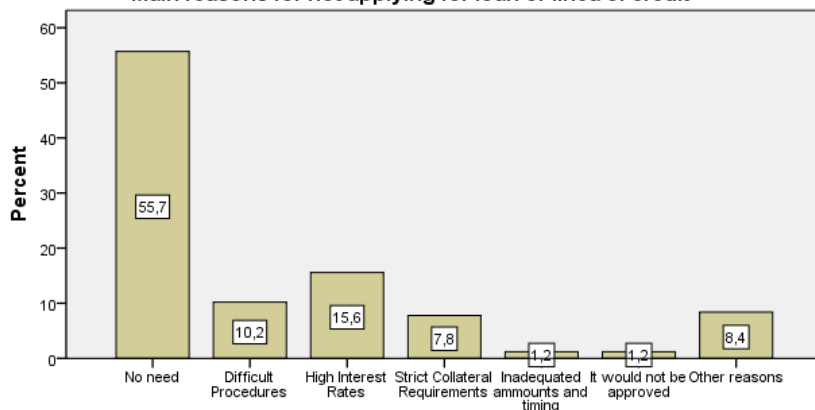


Degree of obstacles for current operation:access to finance

Did most recent outstanding loan or line of credit require collateral?



Main reasons for not applying for loan or linea of credit



Main reasons for not applying for loan or linea of credit

Micro and Small Enterprise Development in Bolivia, Seeking Opportunities

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Main reasons for not applying for loan or linea of credit * Degree of obstacles for current operation:access to finance

Crosstabulation

| | | | Total |
|---|----------------------------------|--|--------|
| Main reasons for not applying for loan or linea of credit | No need for a loan | Count | 85 |
| | | % within Degree of obstacles for current operation:access to finance | 54,1% |
| | Difficult procedures | Count | 17 |
| | | % within Degree of obstacles for current operation:access to finance | 10,8% |
| | High interest rates | Count | 26 |
| | | % within Degree of obstacles for current operation:access to finance | 16,6% |
| | Strict collateral requirements | Count | 13 |
| | | % within Degree of obstacles for current operation:access to finance | 8,3% |
| | Inadequate amounts and timelines | Count | 2 |
| | | % within Degree of obstacles for current operation:access to finance | 1,3% |
| | Thought it would not be approved | Count | 2 |
| | | % within Degree of obstacles for current operation:access to finance | 1,3% |
| | Other reasons | Count | 12 |
| | | % within Degree of obstacles for current operation:access to finance | 7,6% |
| Total | | Count | 157 |
| | | % within Degree of obstacles for current operation:access to finance | 100,0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) |
|---|---------------------|----|-----------------------|
| Pearson Chi-Square | 55,937 ^a | 24 | ,000 |
| Likelihood Ratio | 57,008 | 24 | ,000 |
| Linear-by-Linear Association | 14,365 | 1 | ,000 |
| N of Valid Cases | 157 | | |
| a. 27 cells (77,1%) have expected count less than 5. The minimum expected count is ,14. | | | |

Symmetric Measures

| | | Value | Approx. Sig. |
|--------------------|-----|-------|--------------|
| Nominal by Nominal | Phi | ,597 | ,000 |

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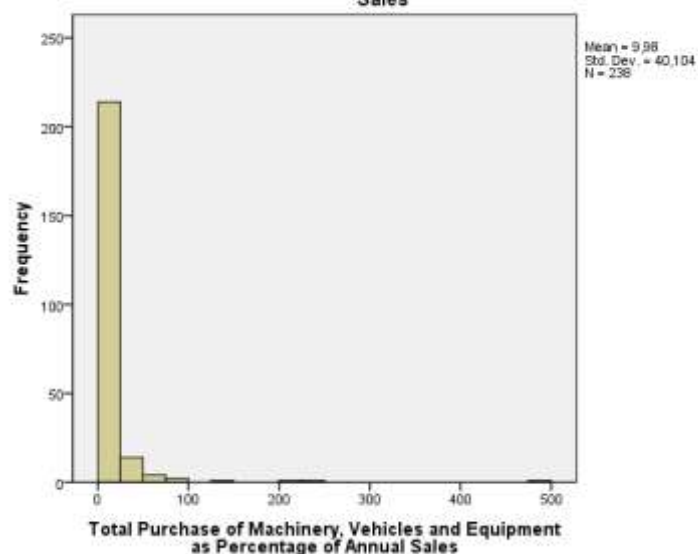
| | | | |
|------------------|------------|------|------|
| | Cramer's V | ,298 | ,000 |
| N of Valid Cases | | 157 | |

Annex 4 – Physical Capital Analysis

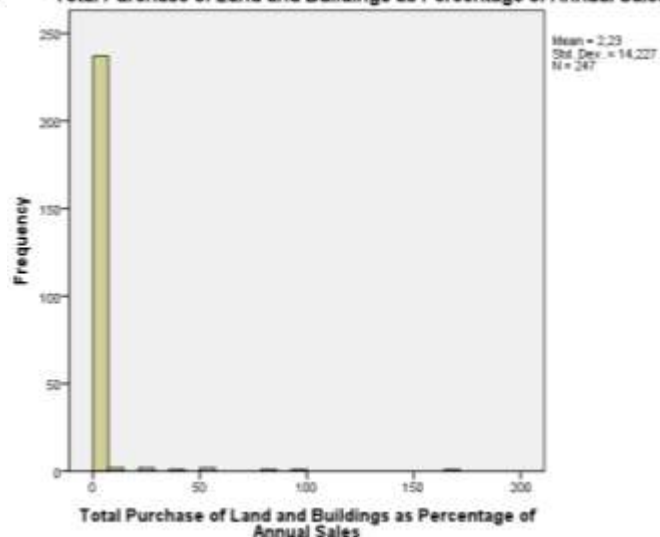
Did this establishment purchase fixed assets?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|-----------|-----------|---------|---------------|--------------------|
| Valid | Yes | 136 | 52,1 | 52,3 | 52,3 |
| | No | 124 | 47,5 | 47,7 | 100,0 |
| | Total | 260 | 99,6 | 100,0 | |
| Missing | Not Known | 1 | ,4 | | |
| Total | | 261 | 100,0 | | |

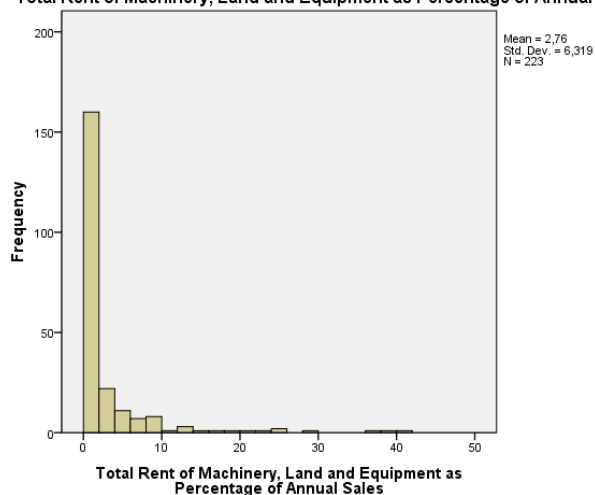
Total Purchase of Machinery, Vehicles and Equipment as Percentage of Annual Sales



Total Purchase of Land and Buildings as Percentage of Annual Sales



Total Rent of Machinery, Land and Equipment as Percentage of Annual Sales



Micro and Small Enterprise Development in Bolivia, Seeking Opportunities

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| | | Total annual cost of rental of land/buildings, equipment, furniture | Annual expenditure on purchases of: Machinery, vehicles and equipment | Annual expenditure on purchases of: Land and buildings |
|---------------------|---------------------|---|---|--|
| Labour Productivity | Pearson Correlation | ,225** | ,082 | -,057 |
| | Sig. (2-tailed) | ,001 | ,225 | ,392 |
| | N | 227 | 222 | 227 |

** . Correlation is significant at the 0.01 level (2-tailed).

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|------------|---|-------------------|-------------------|----------------------------|
| dimension0 | 1 | ,225 ^a | ,047 | 331797,778 |

a. Predictors: (Constant), Total annual cost of rental of land/buildings, equipment, furniture

ANOVA^b

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1 | Regression | 1,327E12 | 1 | 1,327E12 | 12,052 | ,001 ^a |
| | Residual | 2,477E13 | 225 | 1,101E11 | | |
| | Total | 2,610E13 | 226 | | | |

a. Predictors: (Constant), Total annual cost of rental of land/buildings, equipment, furniture

b. Dependent Variable: Labour Productivity

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients |
|-------|---|-----------------------------|------------|---------------------------|
| | | B | Std. Error | Beta |
| 1 | (Constant) | 154096,395 | 24533,733 | |
| | Total annual cost of rental of land/buildings, equipment, furniture | 2,148 | ,619 | ,225 |

a. Dependent Variable: Labour Productivity

Coefficients^a

| Model | | t | Sig. |
|-------|---|-------|------|
| 1 | (Constant) | 6,281 | ,000 |
| | Total annual cost of rental of land/buildings, equipment, furniture | 3,472 | ,001 |

a. Dependent Variable: Labour Productivity

Annex 5 – Human Capital Analysis

Statistics

Labour cost as percentage of annual sales

| | | |
|----------------|---------|--------|
| N | Valid | 211 |
| | Missing | 50 |
| Mean | | ,2117 |
| Median | | ,1690 |
| Mode | | ,20 |
| Std. Deviation | | ,22509 |
| Variance | | ,051 |

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By Cintia S. Vega

Did this establishment have formal training programs? * Degree of obstacle for current operations: inadequately educated labour

force Crosstabulation

| | | | Degree of obstacle for current operations: inadequately educated labour force | | | | | Total |
|---|-----|--|---|----------------|-------------------|--------------------|-------------------|--------|
| | | | No Obstacle | Minor Obstacle | Moderate Obstacle | Important Obstacle | Critical Obstacle | |
| Did this establishment have formal training programs? | Yes | Count | 21 | 11 | 17 | 17 | 10 | 76 |
| | | % within Degree of obstacle for current operations: inadequately educated labour force | 36,2% | 44,0% | 37,8% | 54,8% | 76,9% | 44,2% |
| | No | Count | 37 | 14 | 28 | 14 | 3 | 96 |
| | | % within Degree of obstacle for current operations: inadequately educated labour force | 63,8% | 56,0% | 62,2% | 45,2% | 23,1% | 55,8% |
| Total | | Count | 58 | 25 | 45 | 31 | 13 | 172 |
| | | % within Degree of obstacle for current operations: inadequately educated labour force | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|--------------------|----|-----------------------|
| Pearson Chi-Square | 9,323 ^a | 4 | ,054 |
| Likelihood Ratio | 9,485 | 4 | ,050 |
| Linear-by-Linear Association | 6,012 | 1 | ,014 |
| N of Valid Cases | 172 | | |

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 5,74.

Symmetric Measures

| | | Value | Approx. Sig. |
|--------------------|------------|-------|--------------|
| Nominal by Nominal | Phi | ,233 | ,054 |
| | Cramer's V | ,233 | ,054 |

Correlation between Labour Productivity and Education of Employees

Test of Homogeneity of Variances

| | Levene Statistic | df1 | df2 | Sig. |
|--|------------------|-----|-----|------|
| % of Increas/Decrease in Labour Productivity | 1,832 | 3 | 105 | ,146 |

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| | | | | |
|---------------------|-------|---|-----|------|
| Labour Productivity | 3,493 | 3 | 142 | .017 |
|---------------------|-------|---|-----|------|

ANOVA

| | | Sum of Squares | df | Mean Square |
|--|----------------|----------------|-----|-------------|
| % of Increas/Decrease in Labour Productivity | Between Groups | 37681,863 | 3 | 12560,621 |
| | Within Groups | 3604553,103 | 105 | 34329,077 |
| | Total | 3642234,966 | 108 | |
| Labour Productivity | Between Groups | 1,610E11 | 3 | 5,366E10 |
| | Within Groups | 4,878E12 | 142 | 3,435E10 |
| | Total | 5,038E12 | 145 | |

ANOVA

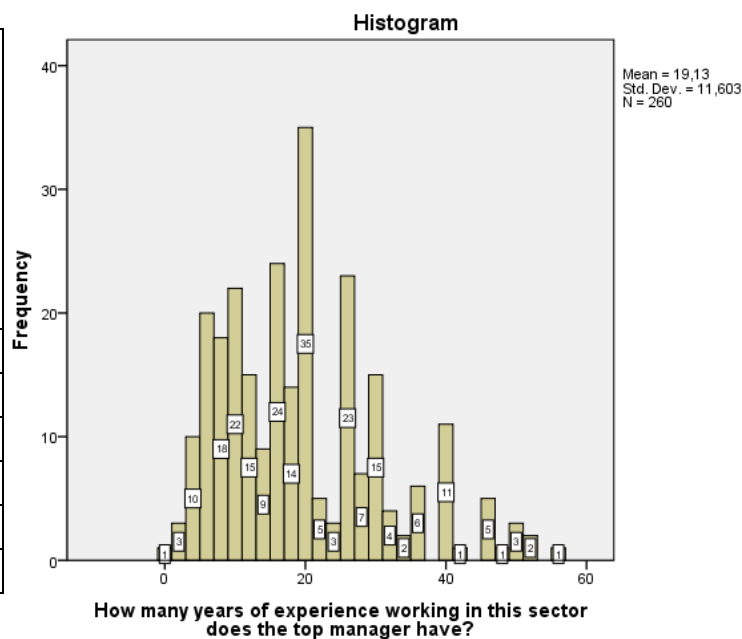
| | | F | Sig. |
|--|----------------|-------|------|
| % of Increas/Decrease in Labour Productivity | Between Groups | ,366 | .778 |
| | Within Groups | | |
| | Total | | |
| Labour Productivity | Between Groups | 1,562 | .201 |
| | Within Groups | | |
| | Total | | |

Robust Tests of Equality of Means

| | | Statistic ^a | df1 | df2 |
|--|----------------|------------------------|-----|--------|
| % of Increas/Decrease in Labour Productivity | Brown-Forsythe | ,330 | 3 | 36,640 |
| Labour Productivity | Brown-Forsythe | 1,266 | 3 | 31,212 |

a. Asymptotically F distributed.

| | | |
|--|---------------------|--|
| Lack of correlation between manager experience and labour productivity | | How many years of experience working in this sector does the top manager have? |
| % of Increas/Decrease in Labour Productivity | Pearson Correlation | ,142 |
| | Sig. (2-tailed) | .066 |
| | N | 168 |
| Labour Productivity | Pearson Correlation | -,013 |
| | Sig. (2-tailed) | .850 |
| | N | 226 |



Annex 6 – Technology and Quality Analysis

Crosstab

% within Use technology licensed from a foreign-owned company?

| | | Use technology licensed from a foreign-owned company? | | Total |
|---|----|---|--------|--------|
| | | Sí | No | |
| Invested in R&D, within the establishment or through a third party? | Sí | 58,3% | 31,7% | 33,5% |
| | No | 41,7% | 68,3% | 66,5% |
| Total | | 100,0% | 100,0% | 100,0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|------------------------------------|--------------------|----|-----------------------|----------------------|----------------------|
| Pearson Chi-Square | 3,561 ^a | 1 | ,059 | | |
| Continuity Correction ^b | 2,465 | 1 | ,116 | | |
| Likelihood Ratio | 3,332 | 1 | ,068 | | |
| Fisher's Exact Test | | | | ,108 | ,061 |
| Linear-by-Linear Association | 3,540 | 1 | ,060 | | |
| N of Valid Cases | 173 | | | | |

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 4,02.

b. Computed only for a 2x2 table

Symmetric Measures

| | | Value | Approx. Sig. |
|--------------------|------------|-------|--------------|
| Nominal by Nominal | Phi | ,143 | ,059 |
| | Cramer's V | ,143 | ,059 |
| N of Valid Cases | | 173 | |

Crosstab

% within Use technology licensed from a foreign-owned company?

| | | Use technology licensed from a foreign-owned company? | | Total |
|---|----|---|--------|--------|
| | | Sí | No | |
| Does the firm have an internationally-recognized quality certification? | Sí | 41,7% | 5,6% | 8,1% |
| | No | 58,3% | 94,4% | 91,9% |
| Total | | 100,0% | 100,0% | 100,0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|--|-------|----|-----------------------|----------------------|----------------------|
| | | | | | |

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| | | | | | |
|------------------------------------|---------------------|---|------|------|------|
| Pearson Chi-Square | 19,393 ^a | 1 | ,000 | | |
| Continuity Correction ^b | 14,873 | 1 | ,000 | | |
| Likelihood Ratio | 11,477 | 1 | ,001 | | |
| Fisher's Exact Test | | | | ,001 | ,001 |
| Linear-by-Linear Association | 19,281 | 1 | ,000 | | |
| N of Valid Cases | 172 | | | | |

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is ,98.

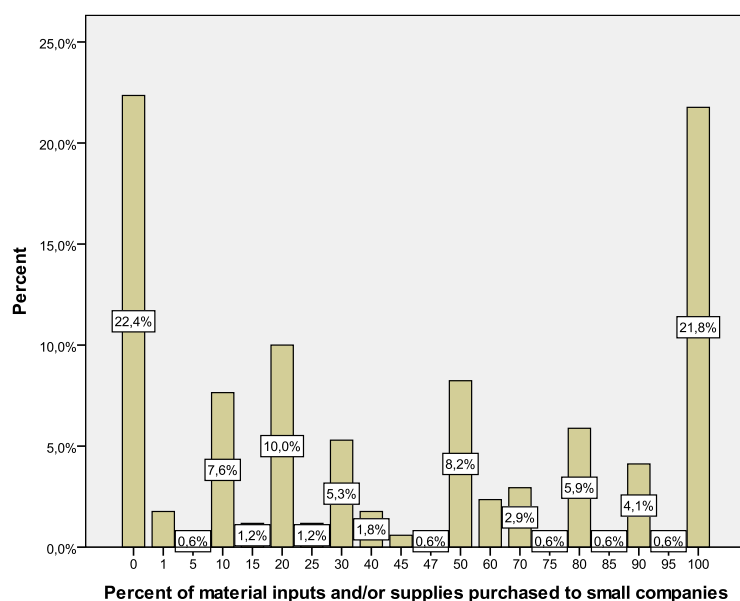
b. Computed only for a 2x2 table

Symmetric Measures

| | | Value | Approx. Sig. |
|--------------------|------------|-------|--------------|
| Nominal by Nominal | Phi | ,336 | ,000 |
| | Cramer's V | ,336 | ,000 |
| N of Valid Cases | | 172 | |

Annex 7 – Raw Materials and Supply Chain Analysis

| | | Percent of material inputs and/or supplies purchased to small companies | Percentage of inputs/or supplies of domestic origin | Percentage of inputs/supplies of foreign origin | Total Annual cost of raw material and intermediate products as percentage of annual sales |
|----------------|---------|---|---|---|---|
| N | Valid | 170 | 171 | 171 | 128 |
| | Missing | 91 | 90 | 90 | 133 |
| Mean | | 45,38 | 47,60 | 52,40 | 46,51 |
| Median | | 35,00 | 40,00 | 60,00 | 40,80 |
| Mode | | 0 | 100 | 0 | 50 |
| Std. Deviation | | 39,472 | 40,203 | 40,203 | 54,522 |
| Variance | | 1558,060 | 1616,313 | 1616,313 | 2,97 |



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Correlation Sales with Small Suppliers - Model Summary

| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|------------|---|-------------------|----------|-------------------|----------------------------|
| dimension0 | 1 | ,215 ^a | ,046 | ,033 | 38,813 |

a. Predictors: (Constant), Total Annual Sales Last FY

ANOVA^b

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|-------|-------------------|
| 1 | Regression | 10470,843 | 2 | 5235,422 | 3,475 | ,034 ^a |
| | Residual | 215417,184 | 143 | 1506,414 | | |
| | Total | 225888,027 | 145 | | | |

a. Predictors: (Constant), Total Annual Sales Last FY

b. Dependent Variable: Percent of material inputs and/or supplies purchased to small companies

Annex 8 – Enabling Environment Analysis

Correlations

| | | Index Environment as an Obstacle | Total Increase or Decrease in Sales over the last 3 years |
|---|---------------------|----------------------------------|---|
| Index Environment as an Obstacle | Pearson Correlation | 1 | -,431 [*] |
| | Sig. (2-tailed) | | ,040 |
| | N | 33 | 23 |
| Total Increase or Decrease in Sales over the last 3 years | Pearson Correlation | -,431 [*] | 1 |
| | Sig. (2-tailed) | ,040 | |
| | N | 23 | 171 |

*. Correlation is significant at the 0.05 level (2-tailed).

Model Summary

| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|------------|---|-------------------|----------|-------------------|----------------------------|
| dimension0 | 1 | ,431 ^a | ,186 | ,147 | 6,68557E6 |

a. Predictors: (Constant), Index Environment as an Obstacle

ANOVA^b

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1 | Regression | 2,141E14 | 1 | 2,141E14 | 4,790 | ,040 ^a |
| | Residual | 9,386E14 | 21 | 4,470E13 | | |
| | Total | 1,153E15 | 22 | | | |

a. Predictors: (Constant), Index Environment as an Obstacle

b. Dependent Variable: Total Increase or Decrease in Sales over the last 3 years

Coefficients^a

| Model | Unstandardized Coefficients | Standardized Coefficients |
|-------|-----------------------------|---------------------------|
|-------|-----------------------------|---------------------------|

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| | | B | Std. Error | Beta |
|---|----------------------------------|-------------|-------------|-------|
| 1 | (Constant) | 7940954,419 | 4125993,602 | |
| | Index Environment as an Obstacle | -271889,788 | 124224,300 | -,431 |

a. Dependent Variable: Total Increase or Decrease in Sales over the last 3 years

Coefficients^a

| Model | | t | Sig. |
|-------|----------------------------------|--------|------|
| 1 | (Constant) | 1,925 | ,068 |
| | Index Environment as an Obstacle | -2,189 | ,040 |

a. Dependent Variable: Total Increase or Decrease in Sales over the last 3 years