What challenges are small firms in Latin America facing to survive?

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Summary: Small and Medium Enterprises represent 90% of companies in OECD countries, with low productivity being one of their main challenges. The project aims to provide a framework of managerial insights to promote an increase of productivity within Micro & Small Firms in Latin America by conducting an assessment of their operations management and logistics decisions. In collaboration with academic partners in 4 countries (Bolivia, Uruguay, Peru and Colombia), primary data has been collected through surveying and observation of the Supply Chain processes and decisions inside these enterprises. Deep insights were found based on the data analysis with further recommendations.

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KEY INSIGHTS

1. Women are more efficient but more often men lead companies.

2. Finance is the area with the most room for improvement.

3. Family-owned companies are less efficient.

4. The more employees, the greater the efficiency.

INTRODUCTION

The role of Small and Medium Enterprises (SMEs) in providing employment and growth prospects for a country has emerged as an important focus amongst researchers, policy makers and donor agencies. Before the 1970s most developing country governments had shown little interest in SMEs, and instead focused on encouraging large enterprise growth through policy. However, since 1970, there has been enhanced recognition that SMEs may be an effective way to promote equity, country development through generating employment growth and poverty alleviating.

Although substantial interest has been shown in small and medium-sized company development, large gaps remain between SMEs and large firms, especially in Latin America where they represent 98% of non-financial companies and generate jobs for over 60% of the total workforce, contributing to around 50% of total GDP, and most of these businesses show low productivity and have trouble surviving (Mukole Kongolo, 2010 and Carolina Enríquez, 2015).

The fact remains that SMEs still have large social and economic impacts, with significant potential to enhance their competitiveness while generating a high value add per employee.

The inefficiency to compete and survive in the global market is an important issue for these economies and the shortage of working capital are both heavy constraints that have limited the impact and growth potential of SMEs in Latin America, as noted by many authors who have researched this subject. Other constraints cited are low skill levels, insufficient training, limited technological capabilities, poor management, limited access to information an enormous amount of red tape. Although, many papers have been published showing the correlation of these topics to the inefficiency growth of SMEs in Latin America, there are a lack of tasks measuring these inefficiencies and thus no methods inside said organizations to address the core problems. As a result, many small initiatives and businesses are closing within a few years of foundation.

The survival of SMEs is determined essentially on their ability to increase productivity at a lower cost; delivering more quality in less time. The key is to have efficient supply chain management (Takkar, Kanda and Deshmukh, 2008). According to Carneiro Araújo and Cardoso (2003) it is also important to increase customization, flexibility and agility in this new global competition scenario.

The main objective of this project is to identify the constraints on growth and development that micro & small companies in Latin America face and which processes and decisions related to the supply chain can be improved in order to enhance their productivity and performance.

The research for this task focused on micro and small companies from eight different countries: Argentina, Bolivia, Chile, Colombia, Ecuador, México, Peru and Uruguay; where a team of specialists delved into the data collection that compiles valuable information from business practices (McKenzie and Woodruff, 2016), the Supply Chain Operations Reference (SCOR®) model version 10.0 and the key indicators that would help them improve their operation's performance.

METHODOLOGY

The methodology consists of:
- **Assessment** of the *level of adoption of the SCOR model* in small firms through Questioning and Observation.
- **Analysis** of the *level adoption of the SCOR model through KPIs* that reflects the efficiency and productivity of small firms.
- Application of ***Analytical Models*** to determine the financial and efficiency impact of the operational variables.
- Proposal of ***Supply Chain Levers*** to improve the decision-taking of small firms in Latin America.

Data Guideline
For the assessment of the level of adoption of the SCOR model, we developed a data collection guideline *"Micro SCM: Leveraging SCM decisions in small firms @Latin America Data Collection Guidelines Manual"* that is designed to gather primary data through questioning and observation of the business processes and principal decision makers within micro and small companies in Latin American countries.
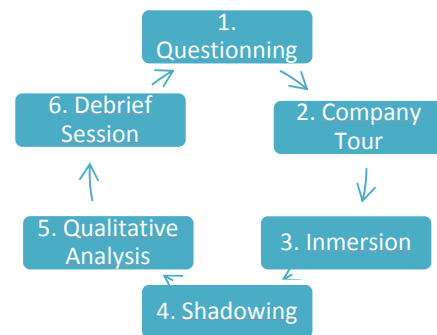
The guideline consists of six parts:

Figure 1. *Micro SCM: Leveraging SCM decisions in small firms @Latin America Data Collection Guidelines Manual*

1. ***Questioning***
The questioning has an objective to understand the assessment of the degree of adoption of the SCOR Model from the decision-making perspective through adapted and reformulated questions based on the 26 business practices (McKenzie and Woodruff, 2016) for small firms and the enablers from the SCOR model which are strongly related with each other. This questioning can be conducted either via a survey or interview prior to the Immersion and Shadowing steps. This result will later be compared and validated via an observation study.

2. ***Company Tour***
Using the tool kit from Read a Plant-Fast (Goodson, 2002), the team of analysts conducts a company tour where they observe and answer (yes or no) questions of the Rapid Plant Assessment-RPA that help to obtain a rough understanding of some "lean" practices within the company.

3. ***Immersion***
We define immersion as the action of physically immersing, but not necessarily completely, a person or a group of people, in the context of a company, with the purpose to learn about the business processes within a company by walking through the work day like any other worker.

The objective of the immersion is twofold:
- To assess the level of adoption of selected SCOR enablers via observation.
- To serve as a validation tool for the questioning process.

4. Shadowing

Shadowing corresponds to a working experience where a person or a group learns about a job or a position within a company by walking through the work day as a shadow to a competent worker.
The objective of shadowing is twofold:

- To keep a record of the activities and time spent by the decision maker.
- To categorize the activities based on domain and determine in which domains the decision maker spends most of his or her time.

5. Qualitative Analysis

After every day of immersion and shadowing, the team of analysts meets the decision maker for a brief period with the purpose of clarifying potential misinterpretations. The objective is to identify the causes of possible errors or difficulties during the immersion and shadowing, and thus, to avoid them in the following days.

6. Debrief Session

The team of analysts, with a senior mentor, organizes a closure session with the company to assess the most "relevant" activities: reliability, consistency and importance / relevance.

For each activity, the team of analysts asks the decision maker questions about the consequences of spending a lot of time on a given activity.

Math Model
To do an effective analysis of the current situation of the company and the main areas of opportunity, we suggest a mathematical model, in order to know the impact operational variables have on the financial results of any company, and to evaluate their logistics efficiency. By using multiple regression, we are able to determine the impact that the independent variables (logistics, costs, purchasing, delivery times, etc.) have on the financial results like sales, current assets (inventory), and gross margin.

The model has 5 formulas, for which we define a target and compare it with the regression results of each company; giving us the final evaluation on the logistics efficiency. With the coefficients that give us the most negative impact on each variable, we will be able to focus on the management area of the company who is giving such impact. Suggesting best practices for each KPI, they would gradually increase their logistics efficiency, having a positive impact on their financial results. The model has the flexibility to add or remove variables and to run it constantly to reduce errors. Its formulas can be modified to fit each company.

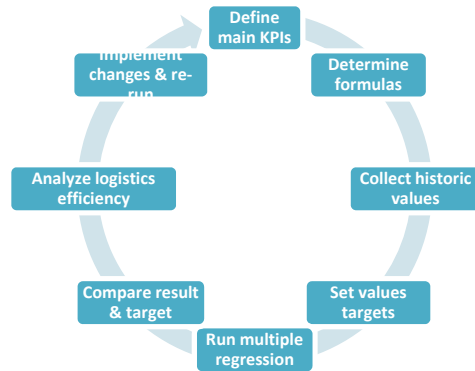We suggest running this model every 6 or 12 months to evaluate the final results on the logistics efficiency

Figure 2. Math model methodology

ANALYSIS

Data analyzed corresponds to data collected until December 2016 from a pool of 63 companies. The companies represent three sectors: commerce (12), industry (37) and services (14). General information was received about the company and its owner (gender, age, income revenue, etc.), the 26 best practices, Read a Plant Fast and Immersion. The findings of the percentile analysis and crossed information are:

The 26 best practices show relevant insights such as business owners concerns are in the financial area with opportunities to improve, i.e. only 55% answered that they adopted supply chain practices, scoring higher in Procurement (74%), Costs (71%) and Marketing (65%).
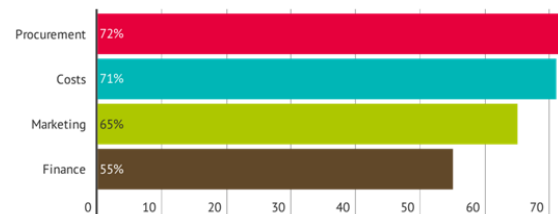
Figure 3. Assessment of the Supply Chain Practices

Female business owners are more efficient (5 points more) than their male counterparts. Through the RPA, we see that many companies do not have well adapted lean manufacturing techniques with scores of 53 of 121 with Uruguay scoring the lowest.

In terms of immersion, the results are quite low, Bolivia with 43% scored the highest in this topic. In general, the majority of the companies do not have an inventory model of the products or do not integrate the processes of purchases, operations, distribution/sales into their product and as a consequence, it affects the working capital.

It can be seen that companies led by people under 35 are, in general, more efficient than those over 35; 68% and 64% respectively. Younger people perform better in matters related to procurement, marketing,

and costs, but are less efficient on financial issues compared to those over 35.

Family-owned companies (66%) are less efficient than those that are not family-owned (69%). Non-family-owned companies are more efficient with their costs.

The more employees, the more efficient the company is because of delegation. Students confirmed that business owners spend 86% of their time in operative activities including sweeping, cleaning, opening the doors, etc. Owners are afraid to delegate and they multi-task.

In general, the majority of young people interviewed (<35 years old) had a higher level of education than those above 35 years of age, 68% and 64% respectively. The education level doesn't guarantee high performance versus experience. People with less schooling who have more experience inside the company also presented better levels of performance. i.e. owners with elementary school education and more than 10 years of experience (85%) are slightly more efficient that a Master degree owner (80%). By contrast, an example is the financial sector that had a positive relation with the level of education, in which the people with a Master degree obtained the highest index in general, with 88% but a lower performance (51%) with more experience, mainly because of the technicity of the financial area.

Another interesting fact in the analysis is related to the fact that companies that export their products and services to other countries have superior KPIs than companies that only have operations in their respective countries, 97% and 63% respectively. It is worth mentioning that this performance is superior in all indicators. This difference may be linked to the fact that companies that export their goods need to be more structured in the bureaucracy issue and have more certifications.

Segmenting the companies studied in three groups: industry, commerce and service, it is possible to verify that the industry sector is the one that has the highest overall performance, being superior in points of procurement, marketing and finance. One of the reasons for this higher performance is linked to the fact that both more experienced leaders and those with less than ten years of experience have performed better than other sectors. After the industry that had a performance of 70% of overall performance, the service sector presented a performance of 62% followed by the area of commerce that obtained 57% of score. It is worth noting that the commerce sector presented the worst indicators in terms of finance and costs, 39% and 59% respectively

CONCLUSIONS

This study assessed productivity and the use of performance indicators by micro and small companies in Latin-America. As a result of this research, it was confirmed through observation that Latin-American SMEs' productivity is lower in comparison with developed nation's enterprises according to OECD-ECLAC (2012).

During the survey carried out with companies from Peru, Uruguay and Bolivia, it was possible to verify that Uruguay presented the best performance indicators for all areas, marketing, costs, finance and procurement, achieving an overall performance of 79%. Then Bolivia had a performance of 65% and Peru was in third position with 59%. The fact that Uruguay is in first place in the ranking of performance among the three countries is linked to the fact that the companies interviewed had only the industrial ones, which presented higher results. However, it is possible to assume that factors linked to the economy and education are also linked to this result.

The research also showed that employees and business owners have a better view of the company's performance compared to the opinion of the students who visited and carried out the research. Such a conclusion can be made by noting that the scores given by the employees and businessmen were higher than those observed in practice by the students in some requirements, mainly in Procurement and costs indicators. However, this did not feasible the research results, since the variation was only 1.3% in general.

Further Research

According to the article "Small Firm Supply Chains in Latin America the Focus of New SCALE Study" (Velázquez, 2016), the project will continue for two or three years expanding its scope to more countries. Further research includes a mathematical model based on specific indicators linked to the optimal efficiency of a company as per Maya et al. (2015). Through a linear regression, we will see which KPIs are the most relevant to help in the productivity of the small company. The final result is to find a Supply Chain lever that is easy to implement but that will have the highest impact in the productivity of small companies in Latin-America.

Relevant Literature
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