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Research on procurement management in Latin American Food SMEs: Multiple Case Study

TESI DI LAUREA MAGISTRALE IN
FOOD ENGINEERING-INGEGNERIA ALIMENTARE

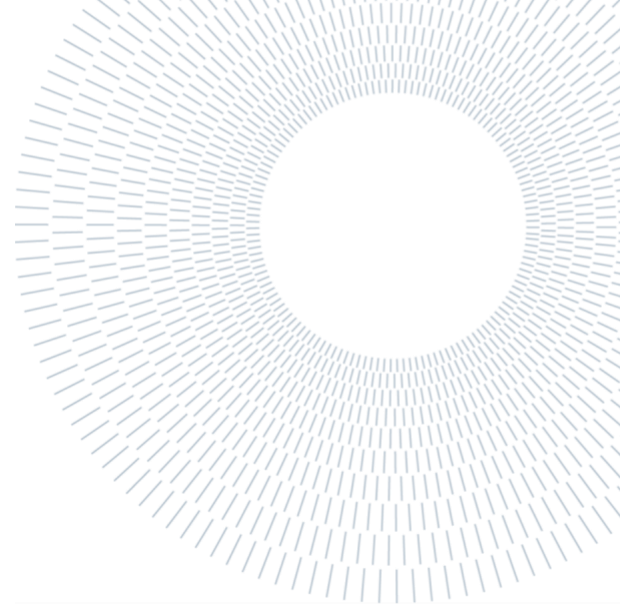
Author: Carina Blasco - Maria Paula Moncaleano

Student ID: 975247 - 976595
Advisor: Verónica León B.
Academic Year: 2022-23



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EXECUTIVE SUMMARY OF THE THESIS

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Introduction

Small and medium-sized enterprises (SMEs) play a crucial role in most economies, especially in developing countries, as they contribute to job creation and economic development, accounting for up to 40% of national income (GDP) in emerging economies [1]. On the other hand, these companies would especially benefit from good purchasing management, as limited resources create a greater vulnerability to inefficient purchases [2]. In this line, the objective of this study is to extend the literature by studying food SMEs in Latin America, searching to understand the reality of these companies and, at the same time, to provide a contribution applicable to the context of SMEs to convert purchasing into a more strategic activity. The study will be performed considering three macrotopics (Purchasing Management, Portfolio Management and Purchasing Performance), which are the basis of the research and conceptual framework developed from bibliographical references and books on procurement.

1. Literature Review

The literature review was carried out according to the Systematic Literature Review (SLR) methodology, using the Scopus database. In the first search keywords related to procurement, SMEs and food industry were used, returning a total of 54 results. Due to the limited number of articles, a second search was carried out, extending the search to publications related to companies from other sectors that could be used to benchmark the purchasing management of food SMEs, returning a total of 238 results in addition to the first search.

As suggested by the SLR methodology, data selection was performed to select the relevant articles, limiting the number of articles to a total of 38. Data synthesis was carried out, constructing a data base with the articles, which were analysed and classified through a descriptive statistics, highlighting the low amount of publications related to the food sector, the lack of study in developing countries such as Latin America, and the most frequent topics. At a general level, the

contributions to the literature are mostly related to outsourcing strategies (11), followed by procurement strategies (7) and procurement performance (5), whereas the least studied topics were e-procurement and supplier finances.

After the analysis of the articles we could identify five major gaps that we will be cover during this study:

Gap 1: The feasibility of applying existing portfolio models or their adaptability has not been a key issue in defining SME purchasing strategies.

Gap 2: There is a gap in terms of the alternatives to mitigate power unbalances.

Gap 3: The approach in which small companies carry out their own evaluation of purchasing management performance has not been described.

Gap 4: There is a need to study possible preventive actions that can be implemented to manage supplier failure and promote their development to build long-term win/win relationships.

Gap 5: There are a very limited number of articles that consider companies located in developing countries.

2. Research Questions and Research Settings

The research questions developed are intended to address the gaps found in the literature review.

RQ1. How do food SMEs in developing countries manage their purchasing portfolio?

In order to investigate how the applicability of existing portfolio models is realized, including possible strategies in Latin American SMEs. This research question aims to fill the gaps in the literature described in gaps 1, 2 and 4, and requires the subdivision of the following sub-questions:

- RQ1.1 How do SMEs determine the purchasing portfolio?
With the aim of understanding how the purchasing budget is spent in food SMEs.
- RQ1.2 How is the level of importance of product categories determined?
The aim of this question is to understand how the level of importance of product categories.
- RQ1.3 What are the purchasing strategies for items considered critical?
This question aims to identify the strategies implemented by food SMEs to

decrease the criticality of purchasing items.

RQ2. How is the organisational structure of procurement management in small enterprises?

In order to assess the maturity of the organisational structure of food SMEs

RQ3. How procurement performance management in SMEs is evaluated?

With the aim of understanding the degree of development of the procurement performance area, filling Gap 3.

RQ4. How is supplier selection and evaluation performed in food SMEs?

In order to understand the criteria and methods of supplier selection and evaluation used by food SMEs in Latin America, filling Gap 4.

This study will be focused on the context of SMEs in the food sector in Latin America, in order to respond to Gap 5.

To answer these research questions, a research framework was developed and is graphically represented in Figure (1). The three main themes of the research are separated and represented by three different colors. The framework will allow to understand the flow implemented to answer the research questions.

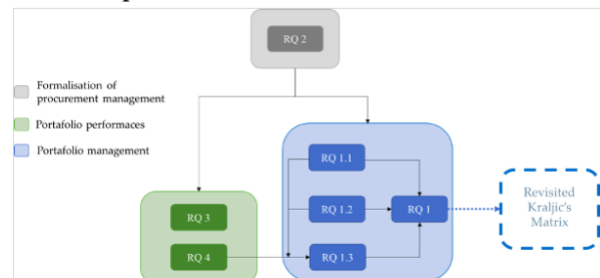


Figure 1 Research Framework

The research setting focused on two Latin American countries, Colombia, and Paraguay, whose economic growth is largely due to the productivity of SMEs. The SMEs represent 90% and 97% of the economic units in Colombia and Paraguay respectively [3][4]. Although this study does not focus on size comparisons, it was decided that diversifying the sample between micro, small and medium-sized enterprises will allow for valid answers to the research questions in a broader context. Additionally, the analysis will focus on food manufacturing and the HORECA sectors, due to their important participation in the economy within the SME sector for both countries studied. [5][4].

3. Methodology

For the empirical research approach, the qualitative method will be used, in order to favour the construction of new theories through an exploratory approach that will allow the understanding of the context of the problem and the approach to the interviewee [6]. Within the qualitative method approaches, we will choose to use the case study methodology. The application of this method will require, first of all, defining the research questions, the research framework, identifying the theoretical aspects to be taken into account in the research through a conceptual framework, performing the interviews, coding and analysing the information obtained. The case analysis method will be applied to multiple cases (Table 1), which will allow to identify the different variations between cases and sectors. The number of organisations will be divided between two supply chain stages: 10 manufacturing companies and 6 companies for the HORECA sector.

Case	Sector	Product	Location	size
Ice Cream Company	Manufacture	Ice creams	Paraguay	Small
Pasta Company	Manufacture	Pasta	Paraguay	Micro
Cheese-flavored yuca rolls	Manufacture	Gluten free products	Paraguay	Micro
Sausages Company	Manufacture	Sausages	Paraguay	Micro
Veg Burger Company	Manufacture	Plant-based products	Paraguay	Micro
Homemade Restaurant	HORECA	Homemade food	Paraguay	Micro
Sandwich catering	HORECA	Meat Sandwich	Paraguay	Micro
Barbecue Catering	HORECA	BBQ catering	Paraguay	Micro
Chips Company	Manufacture	Fried snacks	Colombia	Medium
Snack Company	Manufacture	Baked snacks	Colombia	Small
Coffee Producer	Manufacture	Coffee	Colombia	Small
Chocolate Company	Manufacture	Chocolates	Colombia	Micro
Yogurt Company	Manufacture	Yogurt	Colombia	Micro
Ice Cream Restaurant	HORECA	Ice creams/ crepes	Colombia	Small
Fast Food Restaurant	HORECA	Colombian food	Colombia	Micro
Italian Restaurant	HORECA	Italian food	Colombia	Micro

Table 1: General description of the cases study

After defining the research questions, a Conceptual Framework was constructed, which relates all the macro-topic of interest for this research to the literature. The first macro topic Purchasing Formalization is composed by four topics, Role of the purchasing manager, Functions of the purchasing manager, Degree of Documentation, and IT Tools. For the second macro topic Portfolio Management, Spend Analysis, Spend Classification and Sourcing Strategies were included as topics. Finally, the macro topic Purchasing Performance is composed by the topics

Performance Evaluation, Supplier Selection, and Supplier Evaluation.

The main objective of the interview protocol will be to confirm or refute what was found in the literature review and additionally to identify new findings that expand the literature. The interview will be developed with semi-structured questions, which will allow a more exploratory approach to investigate the reality of these companies without restricting the answers in any way.

The analysis of the interviews will be carried out through the coding of the data, carried out thanks to the construction of a short statement theoretically supported (code) that allows to represent a fragment of the data [7]. Once the coding process has been completed, we will proceed to show the results in Chapter 4 through a within analysis and a cross case analysis, later on the analysis will be performed in Chapter 5.

4. Findings

As a starting point, a within-case analysis was carried out for all the case studies, which was based on the coding of the information obtained from the transcriptions of the interviews. The determination of the codes that summarized the main idea of each topic discussed during the interview was based on the conceptual framework discussed in Chapter 3, and the concepts not previously covered in the literature were also coded and highlighted as new findings.

The analysis within the case study allowed us to find different quotes that confirm the literature. Regarding the level of formalisation of purchasing management, some of the most relevant quotes allocate the purchasing responsibilities to the owner of the company, while in some cases purchasing management was mentioned to be supported by a trusted employee or a family member, the functions implemented were also reported, such as purchase request, selection of suppliers and the receipt of purchases. The information about documentation evidence and IT tools was also gather, highlighting the informal communication via WhatsApp or phone calls and the use of supplier pricing data base, as new findings. An example of the statement mentioned before is a quote from Chocolate Company who mentioned that: "suppliers take the order, either by call or by WhatsApp", explaining that instant

messaging (WhatsApp) is used as a channel of communication with suppliers.

About portfolio management, information was collected on the percentage of the budget allocated to procurement, as well as which procurement item generates the highest expenditure and its cause. During the interviews the aspects that affect the criticality of the purchasing items were also mentioned, highlighting seasonality, order size limitations and financial restrictions from the supply complexity perspective, and price and quality from the strategic importance perspective. A high dependence on suppliers for certain purchases was also reported during the interviews. Finally, the interviews expressed different quotes regarding the strategies used, which vary from case to case. As an example for this macro topic, we present the Barbecue catering's case quote, the interviewee explained that he includes the relationships with both his suppliers, expressing *"it is important to have friendship, communication, trust"* and with competitors in a type of horizontal collaboration *"we always share information about suppliers with colleagues, who has the best prices, the best quality"*.

The study of the last macro topic, allow to gather information of procurement performance. According to some interviewees, internal performance evaluation involved monitoring compliance with budgets and controlling savings. The interviews also revealed that most companies prioritize quality and price when selecting a supplier, with some considering factors like supplier relationships and history. Proximity and certifications also played a role in supplier selection. Some of the supplier evaluation factors include product inspections, price monitoring, and audits. Negotiation and changing suppliers were mentioned as actions in response to supplier failures. As an example, one of the confirmations regarding the change of supplier was quoted by Sausages Company, who affirms that *"in case of recurrence, we look for another supplier"*.

The second level of analysis is cross-analysis, in order to identify commonalities between interviewees in the different cases. Within the development of this section, the confirmation of the finding will be presented as: (number of cases reporting the finding/total number of cases).

First, the manufacturing sector was analysed through research on three macro-topics, focusing on the first one, the formalisation of the

manufacturing sector, it was found that the general manager is responsible for all or most of the purchasing management (9/10). Regarding the functions of the purchasing manager, in general, the companies interviewed are limited to basic purchasing functions, such as requisitioning purchases, selecting suppliers and receiving purchases, as 80% of the interviewees claimed to carry out the above activities (8/10). About the degree of documentation, we can identify the low formality in the interviewed companies considering that except for invoices (10/10) and cost sheets (7/10), documents are handled to a very low degree, highlighting that none of the interviewees reported the use of formal contracts. It is worth noting that, although the majority (7/10) register the quotations of raw materials and inputs, this is only done to see their impact on the price of the finished product, as only two of them make an analysis of them. Analysing the use of IT tools, we observed that the majority use Excel spreadsheets as an IT tool and resort to informal communication via WhatsApp or phone calls (6/10).

With regard to the second macro-topic, the analysis of Portfolio Management, confirmed different patterns within the manufacturing sample interviewed. Concerning the spend analysis, it was identified that there is a clear identification of the inputs and raw materials purchased (10/10), that the percentage of the annual budget allocated to purchases represents more than 50% for the majority and that the items with the highest spending for the company are those that require a high volume of purchases. Regarding the spend classification issue, most respondents agree that the complexity of the market is largely due to the seasonality of the products (8/10), financial weaknesses (8/10) and the mandatory purchase volume in certain order sizes (6/10). The analysis of bargaining power showed that, although most companies claimed to source from suppliers larger than them (8/10), very few reported being affected by this criterion (4/10). A more detailed investigation of dependence through the study of Supplier Dependence and Use Rate found very low confirmation for both, with each of these factors being mentioned by a maximum of four companies. The patterns respect to the strategic importance of purchasing identified that cost and impact on the quality of the final product are the most important criteria for the entire sample. On the other hand, regarding purchasing strategies, it

was found that the companies that reported having better management planning also managed purchases more frequently, decreasing inventory levels and orienting their business towards a Lean strategy. It was also found that companies handling either purchased or finished products with high durability implemented overstocking or overproduction strategies. Likewise, companies reporting the implementation of a long-term relationship strategy consider the impact of raw material change on variation in finished product quality as a critical aspect. We also identified companies that had tools that enabled them to implement specific strategies, as in the case of Chips Company, which has developed vertical integration thanks to its economic resources; and, the cheese-flavored cassava rolls Company, which is implementing a relationship strategy thanks to its experience and know-how of the supplier market.

To conclude the cross-case analysis of the manufacturing sector, the third macro-theme, Procurement Performance, was analysed. It was found that half of the companies in the sample do not have any kind of internal procurement performance evaluation. However, among the companies that do have an internal assessment of their procurement management, use savings monitoring. Between the supplier selection factors, it was found that most companies (9/10) indicated that the most critical one was quality, followed by price (6/10). The formality of supplier evaluation was studied, and it was concluded that it is carried out rather informally, as only four of the interviewees kept records of performance monitoring or evaluation. The patterns related to evaluation methods were analysed, from which it was identified that the method most frequently mentioned by the companies consulted was the verification of product quality during delivery (7/10), and finally it was found that the most common action in the face of a negative evaluation or repeated supplier failures is the search for supplier alternatives (7/10).

After the Manufacturing Sector information was analysed the same approach was followed for the HORECA sector, finding mostly commonalities between the purchasing management of both sectors, and some differences. The first macrotopic analysed was Purchasing Formalization, where it was confirmed that likewise the manufacturing sector, the CEO is mostly responsible for the

purchase activity (4/6), with the only two companies that reported having some support in this area being the ones that had one or more branches, and that the functions are reduced and limited to basic purchasing tasks with a low level of documentation. On the other hand, one of the differences found is that in the case of HORECA, cost registration is not carried out in most cases (2/6). Regarding the technological tools used, the use of an ERP for purchasing management is low (2/6), and unlike manufacturing companies, the use of electronic spreadsheets to support purchasing management is scarce (2/6). Coincidentally with manufacturing companies, communication with suppliers is done informally, through WhatsApp or phone calls (4/6).

The macro topic Portfolio Analysis in HORECA revealed that, the percentage of budget allocated to purchasing is less than the manufacturing companies (4/6), the budget per purchase item is not identified in 100% of the sample (6/6), and that as in the manufacturing sector companies could point out the costliest purchasing item, attributing in this to inflation and the typical cost of the product the high cost of them, leaving aside the volume of purchase. Regarding the aspects that increase the complexity of the market, similar patterns as the manufacturing sector were obtained, with the exception of financial weaknesses since during the interviews there was no referral to difficulties in relation to low liquidity or cash flow incompatibilities. Seasonality and the requirement of certain order sizes are still considered relevant for the HORECA sector, with high conformation for both aspects (4/6), while different from the Manufacturing sector, bargaining power was of relevance for most of the cases in this sector (4/6). The study on dependence revealed a greater openness and willingness to work together on the part of suppliers in this sector, even though, as for manufacturing, the majority expressed that they were supplied by large suppliers (5/6). The patterns with respect to the strategic importance of purchasing also had similar behaviour to the Manufacturing sector, with the impact on cost and the impact on the quality of the finished product being of greater importance for the entire sample. On the other hand, one of the biggest differences between the sectors is related to sourcing strategies, as for this sector there are common elements between the cases. In the cross-case analysis, the possibility of

implementing relationship strategies and the management of reduced inventories or day-to-day purchasing were highlighted, with a confirmation of 4 out of 6 for both strategies, the other strategies were not a common element within the sample. The analysis also showed that the companies that implemented relationship strategies were the same ones that identified complaint resolution and attention to their needs as indications of motivation to work together on the part of their suppliers. An atypical but relevant case found was the implementation of a horizontal collaboration strategy by the company Barbecue Catering, which prioritized communication not only with suppliers but also with its competitors.

The last macro topic analysis, Purchasing Performance, revealed that the internal management evaluation was done even to a lesser extent than manufacturing companies, with only one company claiming to do through monitoring of savings. With regard to supplier selection factors, it was found that, as for manufacturing companies, price (4/6) and quality (6/6) were the most relevant ones. About supplier evaluation, none of the companies implemented evaluation records, and like the manufacturing companies, quality in delivery was the most important factor (5/6) when evaluating the performance of a supplier. Finally, we see that the actions to be taken in case of repetitive failures include negotiation (4/6), unlike the manufacturing companies; but they coincide with them in one of the actions considered is the search for alternative supply (5/6), either by changing supplier or reducing purchase volumes.

5. Discussion

To answer the first research question RQ1. *How do food SMEs in developing countries manage their purchasing portfolio?* it was divided into 3 sub questions as mentioned in the second chapter. The RQ1.1. aimed to answer how the purchasing portfolio is determined in Food SMEs, evaluating first the level of strategic importance for purchasing according to the percentage of the budget allocated to this activity, where it was found that for the manufacturing sector, it is more than 50%, while for HORECA it is less than 50% for the most part. This leads us to think that, for food manufacturing, purchasing has a greater impact on costs, which is why it should have a more strategic

perspective in order to reduce vulnerability and increase the profitability of these companies (Ellegaard, 2006). Given the high strategic importance it should have, purchasing management is still based on the operational needs of the companies and there is not even a formal establishment of a purchasing budget. Regarding the motives the companies mentioned for an item to be considered costliest, HORECA, where the purchases are of low volume and higher frequency, didn't mention the volume, while in Manufacturing, where there is the requirement of a higher volume of purchase for production batch; it was the number one mentioned. In HORECA sector given that there is no accumulation of purchase volumes by category, it hinders the identification of the impact of volume on spending, and the lack of registration and control of costs increases this lack of knowledge of the impact. (Adekunle et al., 2014).

The RQ1.2 provided us with an understanding of the factors that define the criticality of a product. In terms of supply markets complexity, we could observe that in these companies the issues in the availability of supply are more associated with the seasonal problems of raw materials, as the problems of food insecurity in Latin American countries are strongly related to seasonal phenomena, which in turn increase the price index. [8], monopoly condition, the degree of technology and/or the substitution of material, factor suggested by Kraljic [9], were not relevant since the low specialisation of raw materials. Another relevant factor regarding the supply complexity are the financial weaknesses, mentioned by the manufacturing companies, mostly generated by cash flow incompatibilities, slow cycle time in the accounts payable process or conflict between finance and supply policy [10]. The lack of liquidity in the HORECA sector was not expressed as an alarming factor, because in this type of companies the cash return is fast, the frequency of their purchases is high and the purchase volumes are low, which generates a shorter lead time between the payment to suppliers and the payment from customers. Another factor that increases the level of complexity of the market that emerged from our study is the order size restrictions, which can be associated with two possible causes, the low flexibility of suppliers, the scale production of packaging materials which prevents low volume orders. During the cases' analysis, it was observed

that the shelf life was not consider a highly important factor due to the low amount kept in storage result of the low production capacity, which in turn facilitates the use of products before the expiry date. However, the shelf life becomes a relevant parameter to consider as a restriction if an overstocking strategy is pursued.

The analysis of power dynamics in the context of food SMEs allowed to identify a tendency to keep the Use Range low and do not use formal contracts, to avoid dependence on their supplier. However, despite the efforts to avoid dependency on suppliers, power asymmetries became visible in the analysis of the results, as the problems of lack of credit options and low flexibility in purchasing volumes reflect the power position off the suppliers.

In terms of strategic importance, two key factors can be highlighted. Firstly, cost impact is a crucial consideration for both manufacturing and HORECA companies. Although companies are aware of their main expenditures on specific raw materials or inputs, they often lack detailed data on the percentage spent on each item since lack of skills and time hinders a more in-depth analysis of the cost impact. Secondly, emphasis is placed on the impact on quality, with HORECA attributing 100% importance to the added value of good ingredients, while manufacturers give it 60%. Quality assessment covers several aspects, such as shelf life, taste, and visual appeal. Manufacturing companies prioritise cost due to the high percentage of their budget allocated to purchasing, whereas in HORECA both price and quality are equally valued, as the end customer appreciates quality more.

The research question RQ1.3, allowed us to analyse purchasing strategies, finding that the lean strategy was implemented by some of the interviewees by making use of two methods, planning tools, which facilitate the monitoring and control of purchases and the relationship/communication strategies, which allow them to request the purchase of items once they need them, this strategy is developed by most companies to avoid food spoilage. However, it also reduces the costs of purchasing management (reducing inventory and wastage). Some of the interviewees implement the overstocking strategy to face seasonal shortages of purchase items, this strategy is conditional on the supply of non-perishable raw materials or having a sufficient cold

chain for the preservation of purchases. Given this limitation, a new finding emerges in the interview report, the implementation of an overproduction strategy. The companies that reported having more financial resources were the same companies that explored the implementation of a vertical integration strategy, this strategy can be followed by companies that can assume the cost of applying a make strategy instead of buy [10]. The analysis of supplier base optimisation strategies showed that the implementation of single sourcing is commonly used when the change of raw materials involved significantly impacts the quality of the final product, that parallel sourcing allowed them to have a back-up alternative in case of supplier failure and that multi-sourcing is not recommended for the SMEs analysed, as sourcing from multiple suppliers would imply increases in supply costs [11]. In addition, it was identified that the application of relationship strategies encourages the supplier's motivation to work together and the supplier's openness to share information. Within the relationship strategies, the potential of horizontal collaboration was identified, which is implemented by one of the interviewees for the exchange of price information and the quality of suppliers. Finally, the analysis identified that SMEs' constant search for cheaper or better quality/service suppliers, and the fear of "marrying a supplier", may limit the implementation of Single Sourcing and Long-term Relationships strategies.

The answer to the second research question, RQ2 *How is the organisational structure of procurement management in small enterprises?*, confirmed that the SME owner is mostly responsible for various administrative functions, including those related to purchasing, which on the one hand gives him an advantage in terms of understanding the cross-functional connections of the company [2]. However, this also prevents them from carrying out all the characteristic functions of purchasing management, allocating their limited time mainly to basic functions such as purchase requisition, supplier selection and purchase receipt. On the other hand, in the context of the small Latin American companies studied, the recording and documentary control of the stages of purchasing management is not a characteristic element, since, as stated in the findings, the degree of documentation is low and the use of IT tools is almost non-existent. Lastly, in the scenario of the

SMEs studied in this work, the implementation of formal contracts is non-existent. This practice does not necessarily imply a risk of supply, but rather adds value because, as interviewees expressed, avoiding the lock-in with a supplier gives them the flexibility to move from one supplier to another without ties.

The answer to the third research question, RQ3 *How procurement performance management in SMEs is evaluated?*, identified that the evaluation of internal procurement management performance is not a recurrent activity in SMEs in the food sector in South America. This low monitoring of management can be correlated with the degree of development of purchasing management, because as reported by the author Tontini G, performance evaluation requires a degree of maturity in the management of resources within an organization. [12] The few companies that do carry out internal evaluation of their purchasing performance, evaluate it by tracking purchasing cost savings, using tools such as cost record which. Key Process Indicators (KPIs) remain difficult to implement in the evaluated context.

To answer RQ4 *How is supplier selection and evaluation performed in food SMEs?* we break it down into two parts, firstly supplier selection and then supplier evaluation. Firstly, the supplier selection is considered a key function of purchasing management as it is mentioned in most of the cases as an activity carried out by the purchasing manager for both manufacturing companies and the HORECA sector. Data analysis evidenced that quality and price were the most frequently mentioned aspects to consider when selecting suppliers. In line with those of greatest strategic importance as analysed in the discussion for Spend Classification. We observe even fewer factors than those reported by Ellegaard [2] in his study of orientations for small firms, for instance immediate availability of products, distribution facility is a factor mentioned as important only for the HORECA sector whose purchasing frequencies are higher and therefore seek to reduce the associated logistical costs. Secondly, supplier evaluation is not considered a relevant function by the companies in this study, as it is not mentioned in the list of purchasing manager's tasks by most of the companies. However, there are some factors that they consider when discerning whether or not a supplier performs well or poorly and whether or not they would work with the supplier again. Such

as in supplier selection, the most important factor in supplier evaluation is quality, specifically at delivery since is consider part of the materials reception process, which is a basic purchasing function as mentioned in the Findings Section. In HORECA's case, price volatility is also a relevant factor, and given the frequency of purchases makes it necessary to keep a tighter control of prices than in manufacturing companies.

Based on the findings on this study a proposal construction of a revisited Kraljic matrix is presented, constructing the axis of the supply market complexity and the strategic importance of the purchasing items according to the most relevant factors described. To construct the each axis factors were weighted through a pair comparison matrix (Table 2), to assess the importance of one criterion with respect to each other using Saaty's 9-point scale in which 1 represents equal importance, 3 moderate, 5 strong importance, 7 very strong importance and 9 extremely important [13]. In the case of the Manufacturing Supply Risk, Seasonality and Financial Weakness were mentioned an equal number of times; thus, it is rated 1 with respect to each other, 4 with respect to order size, 9 with respect to shelf life and 5 with respect to Bargaining Power. Order size being mentioned more often than shelf life and bargaining power was rated 5 and 4 respectively, finally, shelf life being mentioned less often than bargaining power was rated 1/3.

Comparison matrix					
vs	Financial Weakness	Seasonality	Order Size	Shelf Life	Bargaining power
Financial Weakness	1.00	1.00	4.00	9.00	5.00
Seasonality	1.00	1.00	4.00	9.00	5.00
Order Size	0.25	0.25	1.00	5.00	4.00
Shelf Life	0.11	0.11	0.20	1.00	0.33
Bargaining power	0.20	0.20	0.25	3.00	1.00
Totals	2.56	2.56	9.45	27.00	15.33

Table 2. Supply Complexity Pairwise Comparison Matrix (Manufacturing).

After normalizing the pairwise comparison matrix the weigh vector was obtained and the consistency checked, being the weight for Financial Weakness

37%, Seasonality 37%, Order Size 15%, Shelf like 3% and bargaining power 7%.

After obtaining the weight, values from 0 to 3 were provided for each factor, to calculate the supply complexity using the equation 5.1.

$$\text{Supply Complexity} = \sum i * j \quad (5.1)$$

where i is the scale positioning of the factor and j the weight.

In the Table 3 the rating scale for the criteria Financial Weakness is presented as an example, the affirmations written describe the capability of the company to meet financial obligations with the suppliers of a specific purchasing item.

Financial Weakness	
0	I have the financial capacity to meet my obligations to suppliers.
1	I do not have resources of my own, but I have access to supplier credit.
2	I do not have resources or access to supplier credit, but I have access to bank credit.
3	I am unable to meet obligations to suppliers, I am short of funds.

Table 3. Financial Weakness Scale Evaluation

Due to the differences between the statements of HORECA and manufacturing, a different assessment of the supply complexity axis was established for this sector. Here the factors Seasonality, Order Size, Shelf Life and Bargaining power are considered, the weight given to each factor was found equally using the Saaty scale. The weight results were 45% Seasonality, 10% Order Size, 10% Shelf Life and 35% Bargaining Power.

For the assessment of the axis of strategic importance or impact on value, the two most frequently mentioned factors were considered: the impact on cost in 100% in both cases and the impact on quality in 6/10 manufacturing companies and 6/6 HORECA. Given the incidence of these two parameters, the impact on quality was assigned a weight of 40% and the impact on cost a weight of 60% for Manufacturing, and an equal weight or 50-50 for the HORECA Sector. In the same approach as for the supply complexity axis, a rating scale from 0 to 3 was defined for each factor.

The revised Kraljic matrix for SMEs in the food sector in developing countries, including the proposed procurement category management, is shown in Table 4.

The management strategies for each quadrant were defined taking into account Kraljic's proposals in his study and the proposals suggested in this

research (highlighted in blue), which are described below.

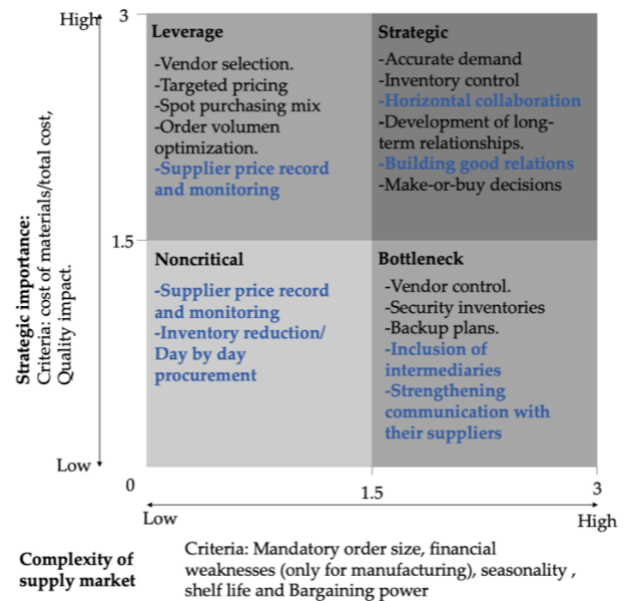


Table 4. Proposal of management strategies per quadrant.

For the quadrant of **Strategic items**, within Kraljic's proposals, it is suggested to apply the demand forecast (keeping sales records and production data up to date as an initial step), logistics and inventory control (through the correct and updated recording of goods), single sourcing strategy and long-term relationship strategy (when quality is significantly important), and the Make or buy decision (when companies have the financial capacity). On the other hand, we suggest the search for horizontal collaboration with small entrepreneurs to compare prices and quality of suppliers and to joint purchasing of raw materials in order to access volume discounts and address order size constraints. The good relationship strategy is also suggested, to address the imbalance of power with larger companies or for the creation of a support network among small and medium-sized enterprises.

Among the strategies proposed by Kraljic for **Leverage items** the feasible ones are Optimization of Purchasing, Volumes spot purchasing and Vendor selection, since is pursue already by some of these companies. The targeted pricing strategy can be translated in the context studied as a cost reduction strategy during the selection of suppliers. It is suggested to look for suppliers with the possibility of Win-Win collaboration or smaller or equal-sized companies with which a power relationship can be established. Price monitoring

with price records as part of supplier evaluation and selection is another recommendation to consider.

Within the strategies proposed by Kraljic for the **Bottleneck items**, it is feasible to implement for SMEs, Supplier Monitoring or Evaluation, Back-up Plans and Inventory Security (as long as the product characteristics allow it), as these have already been implemented by some of the interviewees. In addition, two strategies mentioned by companies could reduce the sourcing risk for these items, the first is the inclusion of intermediaries to reduce power imbalances and the second is to strengthen communication with their suppliers to achieve real-time monitoring of their purchases.

It was determined that the strategies proposed by Kraljic for the quadrant of **Non-critical items** would require a greater effort in terms of formalisation for these companies, which is why they are not recommended for this type of company, as a suggestion, the registration of supplier prices is proposed in order to always opt for the best option in terms of costs and the implementation of day-to-day procurement or JIT as a tool for reducing inventories.

Other complementary proposals for purchasing management are suggested, starting from the measurement of purchasing performance, SMEs can make use of cost records as an analysis tool for monitoring savings, where the variation of costs per item and the influence of management in this variation can be identified. On the other hand, a potential opportunity found in the selection of suppliers is the inclusion of factors such as Relationship/Networking capability, also, it is advisable to look for suppliers with Win-Win Collaboration potential, which is already being applied by some of the companies in the manufacturing sector, the formation of a support network between small companies is something from which they can benefit, and it is something feasible considering that most of the companies are within associations of SMEs which can enhance trade relations between their partners. Similarly, with regard to evaluation and follow-up, it is advisable to address more relationship factors. Finally, radical organisational changes in the purchasing function to adopt business practices are suggested as far as its resources allow, which will provide tools to facilitate the implementation of purchasing strategies, supplier selection and

monitoring, which would lead to significant improvements in performance.

6. Conclusions

The thesis aimed to fill the research gap in the understanding of purchasing management practices in the food SME sector. The literature review highlighted the limited existing research in this area and underlined the need to tailor portfolio models to the unique characteristics of small and medium-sized food companies developing countries. The review also identified several areas within the literature that require further research, including procurement performance evaluation, strategies to mitigate power imbalances, supplier selection and evaluation, and the development of long-term win/win relationships.

To achieve its objectives, the research employed a qualitative methodology and conducted multiple case studies in Latin America. This approach provided valuable insights into the context and allowed for flexibility in the collection of information through semi-structured interviews. Interviews were conducted in the native language, which facilitated better communication and understanding between researchers and participants. However, it also posed challenges in terms of sample selection and data availability. The long duration of the qualitative method, coupled with the limited resources of the participating companies, reduced the number of participants willing to take part. In addition, ensuring attendance at interviews required continuous follow-up. The analysis process also posed challenges, as open-ended responses required careful sorting and consensus among researchers. The study's theoretical implications confirmed the strategic importance of purchasing in Latin American food SMEs, it also made notable the low level of development and formalisation of purchasing management in these companies, where the role of the purchasing manager turned out to be secondary and with limited responsibilities. The importance of price and quality as critical factors in the selection and evaluation of suppliers was another significant finding. At a practical level, the study contributed by proposing a tailor-made version of the Kraljic Matrix adapted to the context of Latin American food SMEs, this proposal constitutes a valuable tool for managers in this sector, as it offers specific

strategies and recommendations to improve purchasing management.

It is important to mention certain limitations of the study, such as the scarcity of previous research focusing on SMEs in the food sector, the concentration of data in two countries and two sectors, and the impossibility of validating the revised matrix in a real-life scenario. Future research could explore a larger sample size, covering several sectors within agribusiness and different stages of SME growth. This would allow for a comprehensive assessment of procurement management practices in the broader Latin American context and provide a more robust picture of the agro-industrial sector. In addition, future studies could also test the applicability and benefits of the proposed revised matrix for improving the performance of small and medium-sized food enterprises.

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8. Acknowledgements

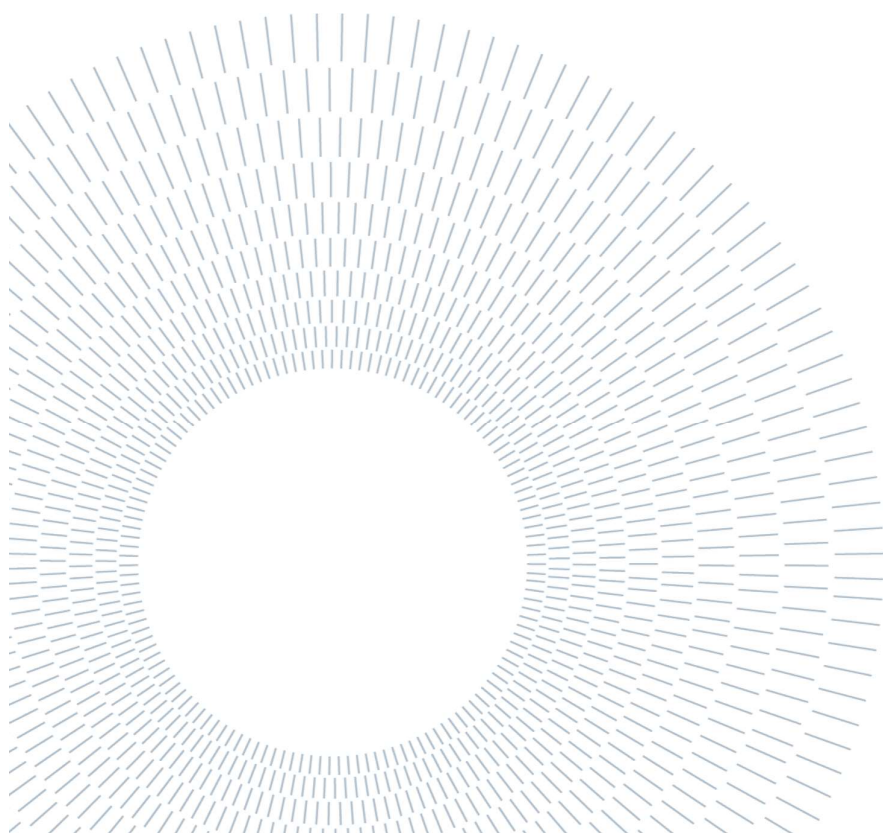
We would like to thank Professor Clarita Verónica Leon Bravo for being our guide on this path and for giving us the necessary basis for understanding purchasing management, knowledge that will be useful not only for the thesis but also for our professional development.

We would also like to thank the companies that took part in this study and the associations that supported the project, for without them this research would not have been possible.

Abstract

This research thesis work aims to investigate procurement management in small and medium-sized food companies, based on the Latin American context, specifically Colombia and Paraguay, countries whose economic growth is largely build on the productivity of SMEs. To carry out this objective, a literature review was conducted, which considered purchasing management in Agri-Food SMEs and in other industrial sectors as part of the search criteria, allowing the identification of the different gaps in the literature and the formulation of four research questions. The methodology chosen for the research was the multiple case study, where a total of 16 companies were analysed in the HORECA and Manufacturing Sector in two countries. Before data collection, a conceptual framework was developed, which included the information reported in the literature regarding three macro-topics, i.e., formalisation of procurement management, procurement performance and portfolio management. Through the interviews, data was collected and subsequently coded and analysed. Among the most relevant findings, we redefined the factors that for these companies increase the complexity of the market and the strategic importance of the purchase items, besides it was found there is a low degree of maturity in the formalisation of procurement management, management evaluation is not a recurrent activity, selection criteria are limited to quality and price, and finally supplier evaluation is not considered a relevant function. A revisited Kraljic's Matrix is proposed, by identifying the relevance criteria for the axes that make up the matrix, customized for the Latin American context; and analysing the viable purchasing strategies for each procurement category. Complementarily, Purchasing Management Proposals were also presented. The thesis concludes with lessons, implications, limitations and directions for future research.

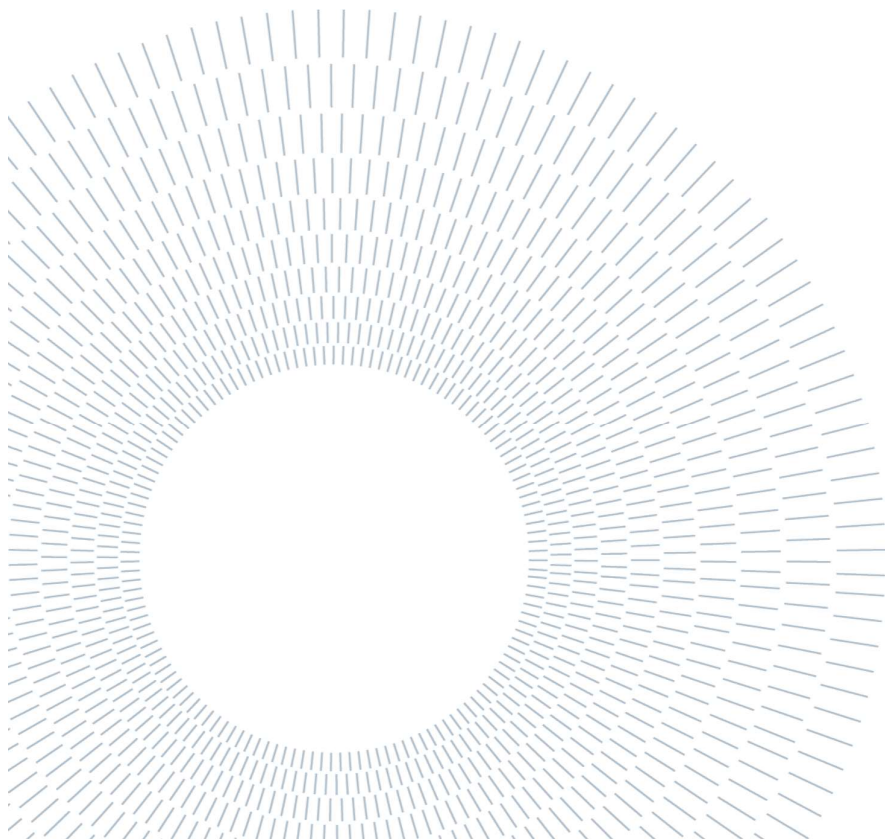
Key-words: SMEs, Food, Procurement management, Strategic purchasing, Latin America.



Abstract in lingua italiana

Questo lavoro di tesi di ricerca si propone di indagare la gestione degli acquisti nelle piccole e medie aziende alimentari, basandosi sul contesto latinoamericano, in particolare su Colombia e Paraguay, Paesi la cui crescita economica si basa in gran parte sulla produttività delle PMI. Per realizzare questo obiettivo, è stata condotta una revisione della letteratura, che ha considerato la gestione degli acquisti nelle PMI agroalimentari e in altri settori industriali come parte dei criteri di ricerca, permettendo di identificare le diverse lacune della letteratura e di formulare quattro domande di ricerca. La metodologia scelta per la ricerca è stata lo studio di casi multipli, in cui sono state analizzate 16 aziende del settore HORECA e manifatturiero in due Paesi. Prima della raccolta dei dati, è stato sviluppato un quadro concettuale che includeva le informazioni riportate in letteratura relative a tre macro-argomenti, ossia la formalizzazione della gestione degli acquisti, le prestazioni degli acquisti e la gestione del portafoglio. Attraverso le interviste, i dati sono stati raccolti e successivamente codificati e analizzati. Tra i risultati più rilevanti, abbiamo ridefinito i fattori che per queste aziende aumentano la complessità del mercato e l'importanza strategica degli acquisti, inoltre è emerso un basso grado di maturità nella formalizzazione della gestione degli acquisti, la valutazione del management non è un'attività ricorrente, i criteri di selezione sono limitati alla qualità e al prezzo, e infine la valutazione dei fornitori non è considerata una funzione rilevante. Viene proposta una rivisitazione della Matrice di Kraljic, individuando i criteri di rilevanza per gli assi che la compongono, personalizzati per il contesto latinoamericano, e analizzando le strategie di acquisto praticabili per ogni categoria di approvvigionamento. Inoltre, sono state presentate proposte di gestione degli acquisti. La tesi si conclude con lezioni, implicazioni, limitazioni e indicazioni per la ricerca futura.

Parole chiave: PMI, prodotti alimentari, gestione degli acquisti, acquisti strategici, America Latina.



Contents

Contents	
Abstract	i
Abstract in lingua italiana	iii
Contents	v
Introduction	1
1. Literature Review	3
1.1 Article selection.....	4
1.2 Descriptive statistics.....	5
1.2.1 Temporary Distribution	6
1.2.2 Country	6
1.2.3 Research Contribution	7
1.2.4 Sector Classification	9
1.2.5 Supply Chain Stage	11
1.2.6 Product Classification	11
1.2.7 Most Frequent Topics	12
1.3 Literature Gaps	17
2. Research Questions and Research Framework	19
2.1 Main Literature Gaps	19
2.2 Research Questions and Research Framework	20
2.3 Research Settings	22
3. Methodology	23
3.1 Research strategy and case studies	23
3.2 Conceptual Framework	25
3.3 Case Studies' Selection.....	29
3.4 Data Collection: Research Instrument and Interview Protocol	31
3.5 Data Analysis: research conduction and interview coding.....	33
4. Findings	34
4.1 Within Case Analysis	34

4.1.1	Formalization of purchasing management.....	35
4.1.1.1	Role of the purchasing manager	35
4.1.1.2	Degree of documentation.....	36
4.1.1.3	IT tools in procurement activities	37
4.1.2	Portfolio management	38
4.1.2.1	Spend Analysis	38
4.1.2.2	Spend Classification.....	39
4.1.2.3	Sourcing Strategy	40
4.1.3	Procurement Performances.....	41
4.1.3.1	Supplier Selection.....	41
4.1.3.2	Supplier Evaluation	42
4.1.3.3	Evaluation of Procurement Management.....	43
4.2	Cross-Case Analysis in the Manufacturing Sector.....	43
4.2.1	Formalization of purchasing management.....	47
4.2.1.1	Horizontal Analysis.....	47
4.2.1.2	Vertical Analysis	47
4.2.2	Portfolio management	47
4.2.2.1	Horizontal Analysis.....	48
4.2.2.2	Vertical Analysis	50
4.2.3	Procurement Performance	51
4.2.3.1	Horizontal Analysis.....	51
4.2.3.2	Vertical Analysis	51
4.3	Cross-Case Analysis in the HORECA Sector.....	51
4.3.1	Formalization of purchasing management.....	52
4.3.1.1	Horizontal Analysis.....	52
4.3.1.2	Vertical Analysis	53
4.3.2	Portfolio management	53
4.3.2.1	Horizontal Analysis.....	53
4.3.2.2	Vertical Analysis	54
4.3.3	Purchasing performance	54
4.3.3.1	Horizontal Analysis.....	55
4.3.3.2	Vertical Analysis	55
5.	Discussion	57

5.1	Answer to Research Questions	57
5.1.1	How small and medium-sized food companies in developing countries manage their purchasing portfolio?	57
5.1.1.1	How do SMEs determine the purchasing portfolio?	57
5.1.1.2	How is the level of importance of product categories determined?	58
5.1.1.3	What are the purchasing strategies for items considered critical?.....	61
5.1.2	How is the organisational structure of procurement management in small enterprises?	63
5.1.3	How procurement management performance in small businesses is evaluated?	65
5.1.4	How is supplier selection and evaluation performed in food SMEs?.....	65
5.2	Revisiting the Kraljic's matrix for SMEs in the food sector in developing countries	66
5.2.1	Supply Market Complexity – Manufacturing.....	67
5.2.2	Supply Market Complexity – HORECA.....	71
5.2.3	Strategic importance – Manufacture and HORECA.....	72
5.2.4	Revisited Kraljic's Matrix.....	74
5.3	Procurement Category Management Proposals	75
5.3.1	Strategic Items	76
5.3.2	Leverage	77
5.3.3	Bottleneck.....	78
5.3.4	Non Critical.....	78
	78
5.4	Complementary Purchasing Management Proposals.....	79
6.	Conclusion and future development	81
	Bibliography.....	85
A.	Appendix A – Interview Protocol	91
	List of Figures.....	127
	List of Tables	129
7.	Acknowledgements	131

Introduction

Purchasing management has been focused in large companies over the years, as it has been shown that purchasing management goes further than a simple routine activity, which is why the need to convert purchasing into supply management has emerged in research (Krajlic, 1983)(Carr & Pearson, 1999). Therefore, academic interest in developing research on small and medium-sized enterprises has been limited, although within the available literature, some authors have highlighted that small and medium-sized enterprises (SMEs) would especially benefit from good purchasing management, claiming that the profitability of small firms is closely related to purchasing management (Pressey et al., 2009) or that limited resources create a greater vulnerability to inefficient purchasing (Ellegaard, 2009). On the other hand, the literature review also shows that research can have an important limitation, the variation of purchasing practices within the group of SMEs, which limits the generalisability of the studies already developed (Pressey et al., 2009).

Small and medium-sized enterprises (SMEs) play a crucial role in most economies, especially in developing countries, as they contribute to job creation and economic development, accounting for up to 40% of national income (GDP) in emerging economies (World Bank, 2023). The development of small and medium-sized enterprises (SMEs) is of vital importance throughout Latin America and the Caribbean, as they constitute 99.5% of the region's enterprises (with almost 9 out of 10 classified as micro-enterprises) and generate 60% of formal productive employment. However, Latin American SMEs present a significant productivity gap, as the productivity of these firms is lower than that of large firms, being responsible for only a quarter of the total value of the region's output (OECD, 2019). The aforementioned can be observed in countries such as Colombia and Paraguay. In Colombia, 90% of companies are SMEs, which account for 79% of employment generation (ANIF, 2021), while in Paraguay SMEs account for 97% of economic units, employing 61% of the workforce in the country (BID, 2017).

The Latin American -food systems have a high impact to growth, reducing poverty and employment, and contributing to food and nutrition security (World Bank, 2021). In particular food manufacturing is a sector marked by a dynamic growth, with an important participation in the industry, in Colombia, the sector represents 21.23% of

manufacturing GDP, and in Paraguay it has the largest economic units within the MSME category with a 21% share (ANDI, 2020)(BID, 2017). On the other hand, the Food and Beverage Services Sector in Paraguay, including catering and restaurants, is the sector with the highest participation in % of economic units within the SME services sector (BID, 2017), while in Colombia it belongs to the top MSMEs by sector (Oficina de Estudios Economicos, 2023).

Despite the major role played by SMEs in the food sector in Latin America, procurement management has not been adequately studied. Therefore, this thesis aims to extend the literature by studying food SMEs in Latin America in order to provide a theoretical and practical contribution. Firstly, to understand the reality of these companies in a scarcely studied context (food sector in Latin America) and, at the same time, to provide a contribution applicable to the context of SMEs in order to convert purchasing into a more strategic activity.

A state of the art literature review allows to identify three macrotopics (Purchasing Management, Portfolio Management And Purchasing Performance) that are key to be explored in Latin American SMEs. These topics are the basis of the research and conceptual framework developed from bibliographical references and books on procurement.

The methodology used for the thesis was a multiple case study analysis, which allowed the research to reflect the particularities in the procurement management in each sector (Manufacturing and HORECA). A total of sixteen cases were selected, ten from manufacturing and six from HORECA of different sectors and size. Interviews were conducted for data collection and subsequently coded and analysed. The findings were presented following a conceptual framework through two levels of analysis: the first using a within-case approach and the second using a cross-case analysis. Within the discussion the research questions were answered, among the most relevant findings the factors that for these companies increase the complexity of the market and the strategic importance of the purchase items were redefined, besides it was found there is a low degree of maturity in the formalisation of procurement management, management evaluation is not a recurrent activity, selection criteria are limited to quality and price, and finally supplier evaluation is not considered a relevant function. Finally, a revised Krajlic matrix for the implementation of procurement strategies in the context analysed was proposed (Latin American Food Sector).

The thesis will be organised as follows. Chapters first describe how we analyse the literature on procurement in food SMEs and other sectors. Then, some gaps are identified and research questions are formulated. In the rest of the study, the research methodology is explained and the results, proposals and conclusions of the study are presented.

1. Literature Review

A literature review on purchasing strategies related to Agri-Food SMEs was conducted to understand what is the literature available about the purchasing strategies in Food SMEs. For the literature review we used the systematic literature review method proposed by Kitchenham & Charters, which allows us to identify, evaluate and interpret the available literature evidence on our topic of interest (Kitchenham & Charters, 2007). For conducting the review, the scientific database Scopus was used due to the highest quality interdisciplinary content provided and the advanced search tools that made it more efficient.

The search was done with the following keywords combinations in order to obtain the relevant articles related to the topic, Procurement/Purchasing/Supplier/Outsourcing, SME/Small Enterprise/Small and Medium/Small Company, and Food, Agri-Food, Agriculture. A filter was applied to limit the search to the following area of study, Business, Engineering, Decision Making, Social Sciences, and Economy. Besides the aforementioned, no other filter was applied. The results obtained were 54 documents.

Due to the limited amount of articles, a second search was performed aiming to include articles from other industrial sectors related to purchasing management in SMEs, using the keyword combination Procurement/Purchasing/Supplier/Outsourcing, SME/Small Enterprise/Small and Medium/Small Company. The same filter as the previous search were applied, resulting in 238 articles.

As suggested by the SLR methodology, data selection was performed to select the relevant articles as discussed in section 1.1., then the data synthesis was carried out, constructing a data base with the articles, which were analysed and classified through a descriptive statistics as shown in section 1.2.

1.1 Article selection

Once the search was conducted, 54 articles were obtained that related the keywords and additional filters mentioned in the previous point for Food SMEs. In order to make a coherent and relevant selection for the research, some of them were decanted, firstly considering the relationship between the abstract and the research topic, separating the group of articles into high relevant, medium relevant and non-relevant.

- **HIGH RELEVANCE:** the articles considered relevant were those that included in their research any of the strategic areas of purchasing activity. In other words, topics such as supplier management and relationships, negotiation and contracting, Supplier Performance Management and Purchasing strategy. Since these topics have a direct contribution to our research focus and are a strong basis for starting the analysis of the purchasing management of small companies in the food sector.
- **MEDIUM RELEVANCE:** articles focused on another research topic but which could impact procurement management in some way, e.g. sustainable procurement practices and collaboration/coordination in supply chains. Also considered were articles that looked at the small business point of view as a seller, to assess whether these practices could be applied by small businesses as buyers.
- **NOT RELEVANT:** articles that do not focus on our research approach and address topics such as sourcing partnerships with the public sector, implementation of digital tools for supply chain (SC) optimisation, food safety and security, traceability and sustainability practices along the SC.

Of the 54 articles found, 6 articles were relevant to the research, all of which were of medium relevance. However, two of them did not allow downloading. Therefore, 4 articles were considered as the basis for our research.

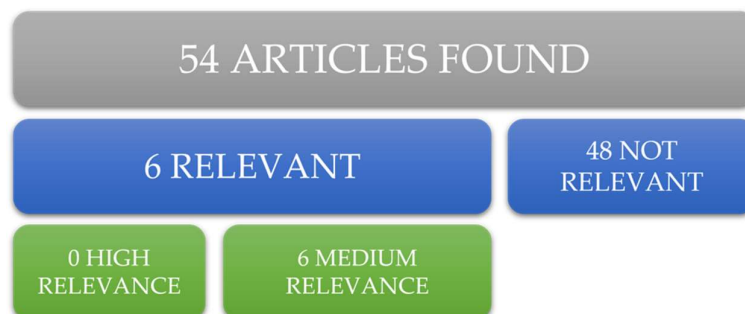


Figure 1.1 Article Selection (From the first search)

As mentioned in the previous point, due to the limited amount of articles found in the first literature search, it was necessary to extend the search criteria by including different sectors of the industry. As a result of this search, 238 articles were reported, of which only 34 were relevant to our topic.

The selection of these articles was carried out according to the following criteria:

- **HIGH RELEVANCE:** articles that included one of the strategic areas of purchasing activity within their research.
- **MEDIUM RELEVANCE:** articles that focused on a specific context, region, practice or product, since these articles can provide an overview of the generalised theory on the topic, but their applicability to our study could be complicated due to their specificity (e.g. sourcing strategy for one business function (accounting services)).
- **NOT RELEVANT:** any article that did not include procurement management issues in its research, (e.g. shared efforts for distribution logistics along the supply chain).

Once the relevance of the articles was determined, it was found that two of them did not allow downloading, so 32 articles will be used as the literature base for this study.



Figure 1.2 - Article Selection (From the second search)

1.2 Descriptive statistics

A database was constructed from the selected articles, including title, abstract, date of publication and other relevant information, which was analysed using descriptive statistics, in order to understand how the study of purchasing management in SMEs has been approached.

1.2.1 Temporary Distribution

Reviewing the articles by date of publication, we can see that interest in the topic of purchasing management in small companies has increased since 2005, although since then there is no significant growth trend as can be seen in the graph below (figure 1.3). This suggests that this is a topic where we can find important research gaps to cover with our research.

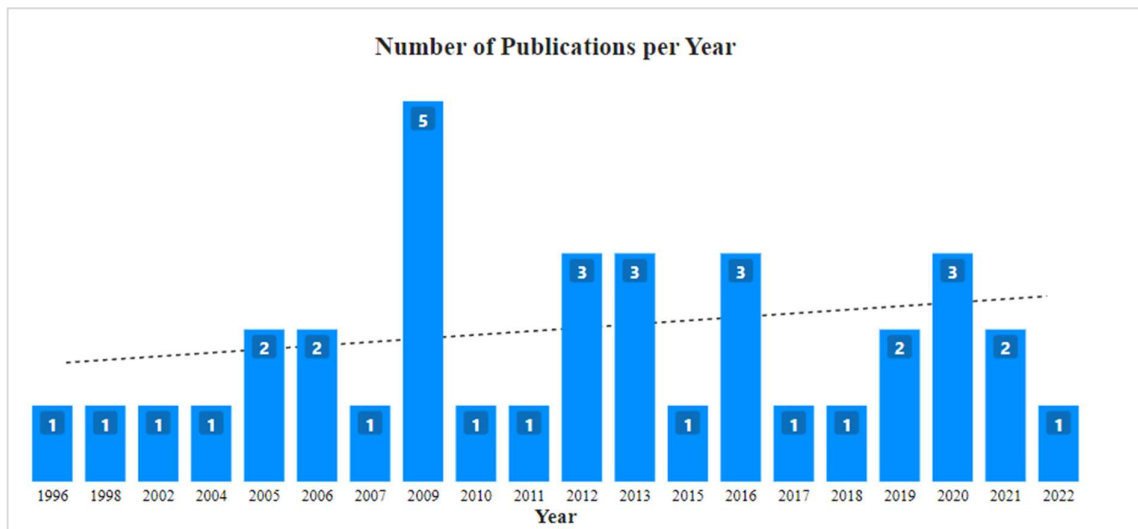


Figure 1.3 - Number of publications per year

If we analyze the publications related to purchasing management specifically for small food companies, we can note that the six publications considered relevant correspond to years since 2011.

1.2.2 Country

In order to have more clarity on the relevance given to the study of purchasing management around the world, a segmentation of the relevant articles versus their location (continent and country), was carried out, considering the location of the organisations studied in the case studies and the origin of the authors in those articles that developed a literature review.

The articles of relevance to the food sector are not sufficient to establish a clear trend in research. However, it is possible to highlight that among the few countries that have aroused interest in the subject are Spain, Greece, Morocco and China. Taking into account the total number of articles (36), Europe is the continent with the most

documentation on the subject, while America (North and South) is the continent with the fewest articles. The above is shown in figure 1.4.

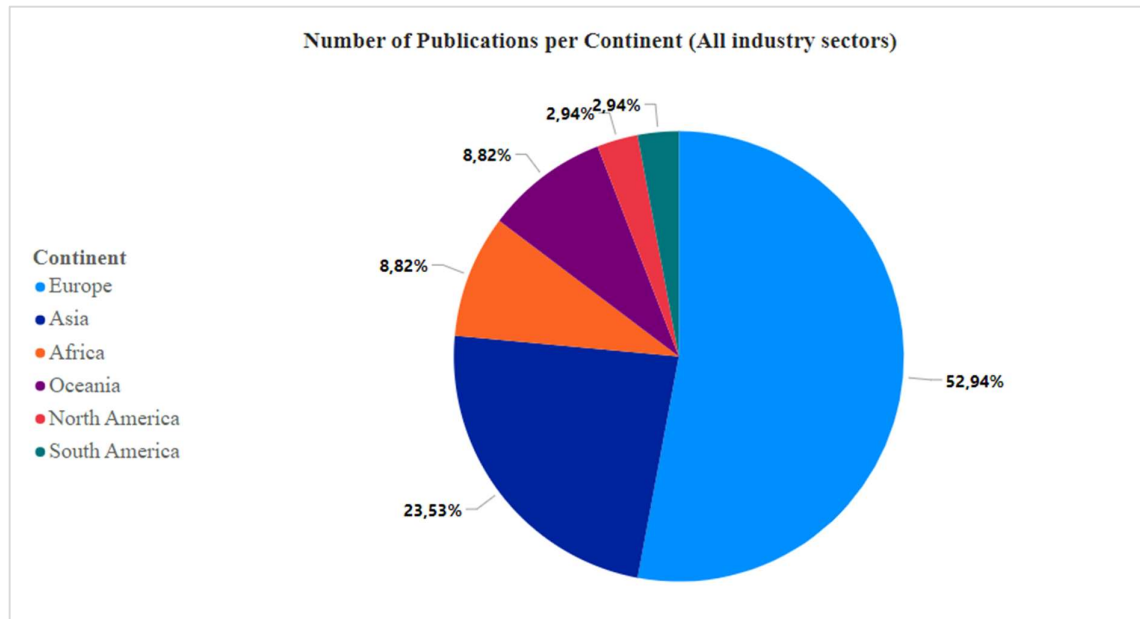


Figure 1.4 - Number of publications per continent (All industry sectors)

Focusing on the continents of greatest and least contribution to the topic, it was found that most of the articles from Europe were reported in the United Kingdom. It is also worth noting that the only South American country present in this literature search was Brazil.

1.2.3 Research Contribution

The contribution of the articles was analysed according to the categories described below, in order to understand what type of contribution they provide and how to use it as input for our research.

- Conceptual/theoretical contribution: Proposals for conceptual/theoretical research submissions should review previous literature for diverse perspectives and build on existing work. Within this category includes research papers.
- Empirical Contribution: Empirical research provides evidence-based qualitative, quantitative and/or historical analysis relevant to the field of procurement management. Case studies can be classified here.

- Model: Where models are proposed to increase the efficiency of procurement activities.

The figure below (figure 1.5) shows the resulting classification of the contribution of the articles, from which it can be seen that most of the studies provide an empirical contribution, while model development and conceptual contributions are limited.

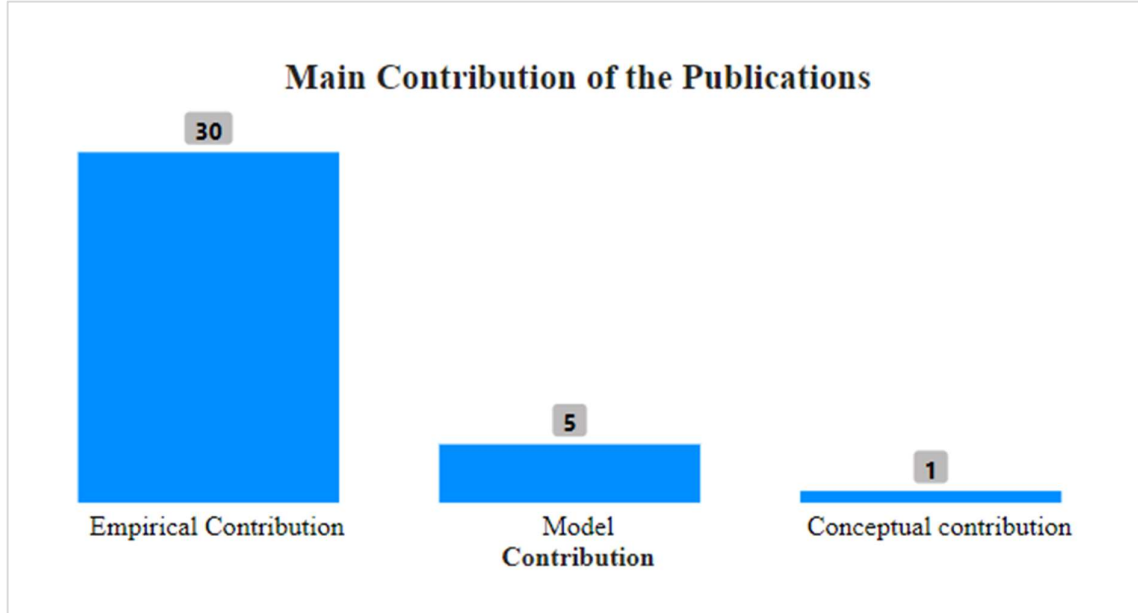


Figure 1.5 - Main contribution of the publications

Within the empirical contribution category, we can further classify into methods of information gathering (figure 1.6), noting that most of the articles are based on surveys of companies or their representatives followed by interviews. which indicates that the research methods for the empirical contribution are mainly based on a quantitative or qualitative approach, not a mixed one.

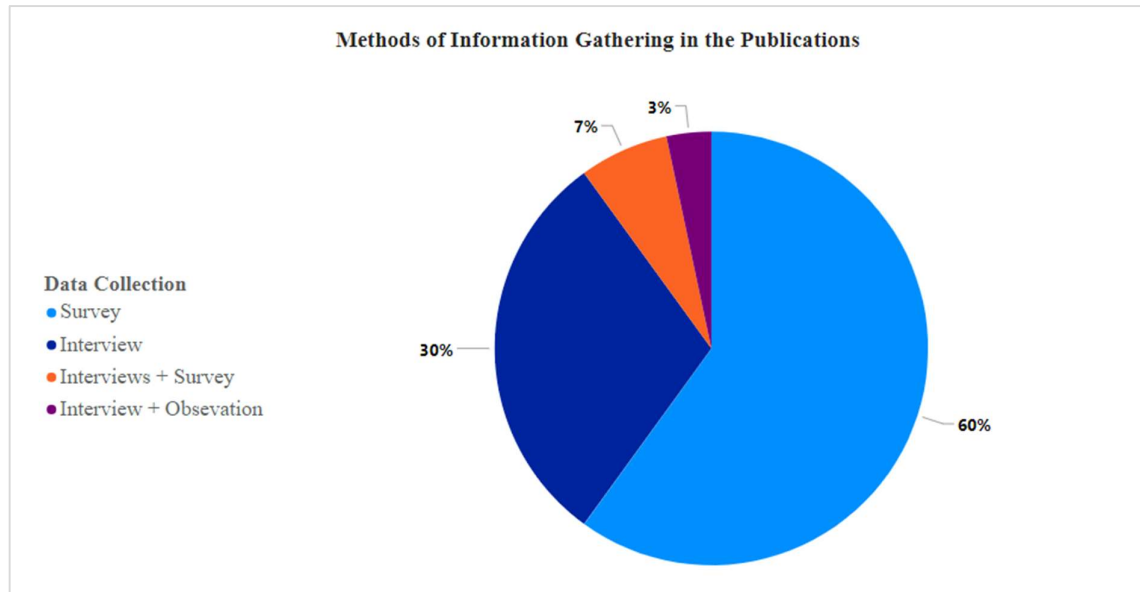


Figure 1.6 - Methods of information gathering in the publications

1.2.4 Sector Classification

At a general level, the articles can be grouped according to the economic activity they study. This classification will help to understand whether the studies were focused on a specific industry or if they were carried out in a wider range of industries. Additionally, it will provide an understanding of the food industry's inclusion in the sample studied.

The classification was carried out with respect to the following economic activities, discarding 4 of the 36 articles that did not mention the type of industry under study:

- PRODUCTION: corresponds to industrial and agri-productive units.
- SERVICES/TRADE: corresponds to the provision of services and commercial activities.
- BOTH: corresponds to production and service/trading companies.

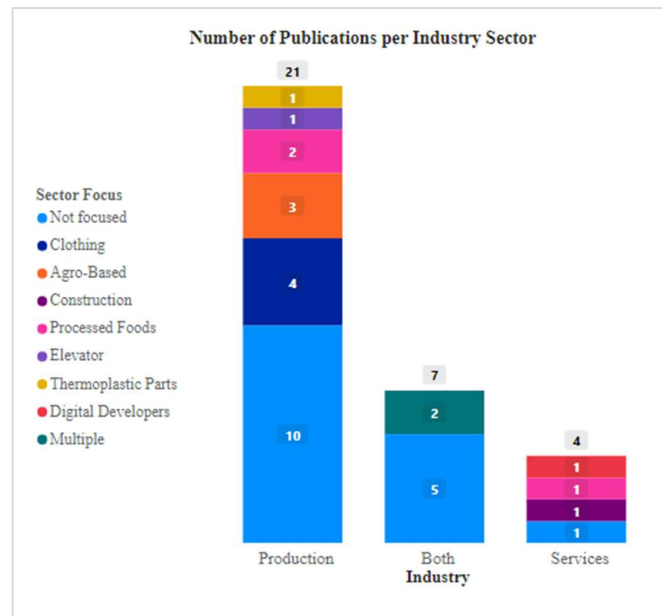


Figure 1.7 - Number of publications per industry sector.

According to figure 1.7, more than half of the articles in the literature base of this study based their research on production companies (21), while only 4 focused on service companies and 7 considered both sectors. Additionally, 11 of the 21 production industry articles and 3 of the 4 service industry articles narrowed their study to a specific sector.

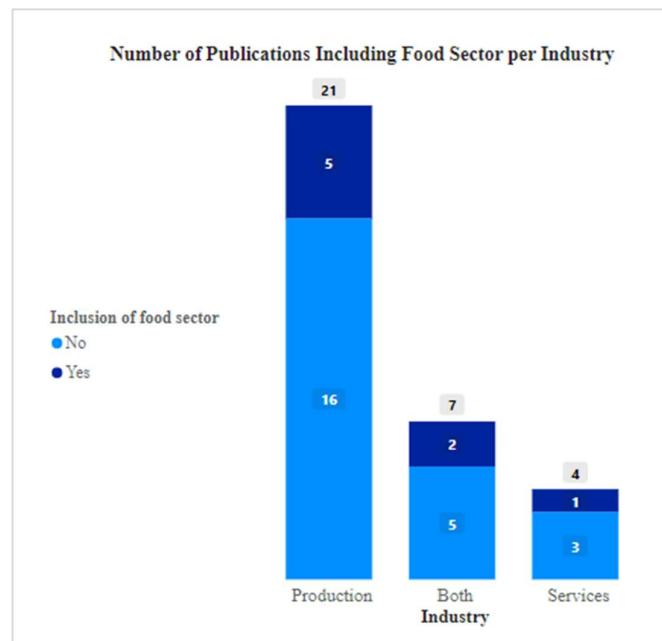


Figure 1.8 - Number of publications including food sector per industry.

On the other hand, the number of articles that included the food sector in their sample was identified (Figure 1.8), some focused exclusively on the food sector, while another portion included the food sector partially in their study sample, from this information it could be identified that the food sector has not been extensively studied, as this sector was considered as a sample in eight of the total articles developed for SMEs.

1.2.5 Supply Chain Stage

Another analysis carried out was to identify on which stages of the supply chain the articles considered relevant have focused.

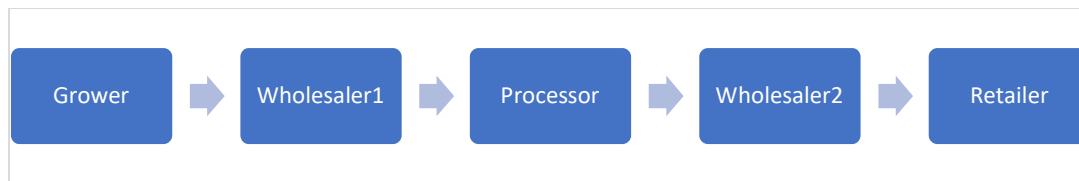


Figure 1.9 – Main stages of the food supply chain. (Wagner et al., 2015)

- Grower: A producer or grower is the one that provides food in a raw form, grains, fruits, vegetables, meat, fish, and poultry.
- Processor: Transform the food products supplied by the growers into products that meet consumer needs.
- Retailer: Showcases the food products to consumers.
- Wholesaler: Is the link between producers, processors, and markets.

Within the selected articles we found a total of 8 articles that covered companies in the food industry. Within them, a total of 4 based their studies on agricultural companies, 1 on food processing companies, 2 on retail companies and one article was found to include both retail and food processing companies.

1.2.6 Product Classification

The classification according to product type is only relevant for articles focusing on the food industry. However, the small sample of articles does not allow us to identify a marked trend in terms of the most studied products. Within the article base, only two of the four articles focused on a specific product type (FRUIT & VEGETABLES and DAIRY PRODUCTS), while the remaining two articles did not mention the product

category, as they talked about supply chain without focusing the study on a specific product.

1.2.7 Most Frequent Topics in Literature

- Procurement strategies: this topic included the definition of procedures and tools for decision-making in purchasing management.

At first, the authors focused on an overview of purchasing strategy in order to determine the real scenario of small businesses. For example, through a survey of 400 SMEs, Quayle showed that 65% of his respondents indicated that purchasing was not important within the company's areas, since it was not necessary to invest additional capital in this activity (Quayle, 2002). Due to the importance of the topic and the lack of academic interest, By 2006, Chris Ellegaard, developed a research agenda to determine which topics were most relevant for future studies, identifying two major topics, SRM and the impact of manager behavior on purchasing. (Ellegaard, 2006) Following Quayle's approach, Andrew D. Pressey examined the purchasing practices carried out by SMEs in the United Kingdom, concluding that they cannot be generalized because of their heterogeneity, neither can they be considered as strategic purchasing, mainly due to the lack of formalization in purchasing management. (Pressey et al., 2009)

On the other hand, some authors delved into certain strategies carried out by small companies, Per Servais, through a study of Danish SMEs, investigated the participation of small companies in international sourcing, finding that this practice is quite common and provides different opportunities (Overby & Servais, 2005). In addition, a theoretical model was developed by Wilson to apply a lean procurement strategy relating volumes and frequency of purchase in an international supply chain (Wilson & Roy, 2009). In 2010, a variation of the Kraljic matrix was developed to allow its applicability in the context of SMEs, where two new axes were considered, component value and supply risk assessment, the implementation of this study was limited to one country and one manufacturing sector.(Lee & Drake, 2010)

Finally, considering power dynamics between SMEs large food retailers, a study developed in Morocco by Abbad H and Paché G., 2013, mentioned a purchasing strategy based on diversification of sourcing with small suppliers (Abbad & Paché, 2013). According to the authors, the interesting thing about this study was to understand that due to power dynamics during negotiations with small companies,

large actors avoid disclosing negotiation strategies, possibly due to social aspects of fiscal convenience.

- Outsourcing strategies: the articles that belong to this category included the motivations for outsourcing their processes, evaluated the degree of outsourcing and determined guidelines and the challenges that their implementation originated.

In the literature we found that this is a widely researched topic, of the articles that are part of our literature review, 11 articles fall into this category. Outsourcing strategies as a topic has been studied since 2004, with Tam F.-Y. and colleagues analysing the reasons why a small food company could benefit from offshoring or international outsourcing, and how these reasons affect the relationship with suppliers and their strategies. (Tam et al., 2005). These drivers have also been studied by other authors (Asatiani et al., 2019)(Nieves et al., 2017)(Halim et al., 2017)(Everaert et al., 2007) that have further deepened their understanding of the motivations of small firms to outsource either locally or internationally, and how these motivations affect outsourcing strategies. The motivations or factors and their relevance in deciding to pursue an outsourcing strategy were studied by Nikabadi and Zamani, who developed a mathematical model to identify, classify and rank the factors affecting outsourcing from a strategic perspective in the supply chain of small and medium-sized manufacturing firms.(Nikabadi & Zamani, 2016)

There is a connection between having or not having an outsourcing strategy and the competitive position of the firm, which was validated by the study of Edvardsson and colleagues (Edvardsson et al., 2020). Sharma R.R. and colleagues, who contributed to the aforementioned line of research, studied a case study company and how it benefited from its outsourcing strategy, while also identifying failures and lessons learned (Sharma et al., 2015). The impact on purchasing performance was also addressed by Raman and colleagues, finding that the outsourcing SMEs perform significantly better than non-outsourcing SMEs. (Raman & Ahmad, 2013)

The relationship between size and socio-economic development characteristics, and the selection of subcontracting strategies was presented by Windapo A. and colleagues using construction sector firms as the subject of study (Windapo et al., 2019). Cheng and his colleagues also conducted a research on a specific outsourcing activity that contributed to the understanding of the international outsourcing activities of Information Systems in Hong Kong SMEs in China and the construction of a framework to describe how such outsourcing is carried out. (Cheng et al., 2009)

- Procurement performance: within the development of these articles, the models and /or indicators were determined to evaluate the management of the purchases and establish their degree of development, highlighting the success factors of a correct management of the procurement.

Of the articles examined, there are 5 that fall into this category and of these only two include agri-food companies as the subject of study. Initially, the authors focused on analyzing the companies considering their context and difficulties in order to define tools to be used to improve purchasing performance, including the application of technologies, methods such as JIT, definition of criteria for the selection of suppliers and improvement in communication with these. (Perkins & Gunasekaran, 1998) (Tam et al., 2005)

Paik S.-K. and colleagues studied how purchasing performance and the stages of purchasing development are related. For the development stages, the authors considered the initial stage as the one where the purchasing function reacts mainly to requests from other departments, and the more evolved stage as the one where the company's purchasing strategy is fully integrated with the overall strategy and is part of an integrated effort to develop a strategic business plan. (Paik et al., 2009). The findings of the study demonstrated that the components of purchasing performance are correlated with the degree of development of purchasing management. Moreover, author Tontini G and co-authors provided us with a model to measure the maturity of purchasing and supply management taking into account materials management, purchase process, supplier evaluation process and process of procurement planning. (Tontini et al., 2016)

It is well known that purchasing performance has an impact on the overall performance of the company. This was demonstrated by Nsimbila P.M., and Jurriëns J.A. in a study conducted in Tanzania where they provide empirical evidence on how purchasing variables (relationship, quality and quantity of the product, and price) contribute to the development and growth of SMEs. (Nsimbila & Jurriëns, 2012)

- Relationships with suppliers: the articles in this category defined how to promote the development of suppliers through the construction of trust.

The management of the relationship with suppliers of SMEs was a subject of interest within the literature reviewed. In 1996, the survey done by Mudambi R. and Schründer C.P. showed that the size of the company has an effect on partnerships, since the larger the company, the greater the implementation of long-term contracts and the greater

the frequency of visits to suppliers. Furthermore, they conclude that supplier-buyer trust relationships can be strengthened through long-term contracts and product co-development (Mudambi & Schründer, 1996). The generally unfavorable position of SMEs was also studied by Morrissey and Pittaway, who determined that the power of large companies in supply chains does not allow the development of collaboration with suppliers, and also, differing from Mudambi R. and Schründer C.P., this study related the development of trust relationship with social factors such as honesty, openness, honoring agreements and loyalty. (Morrissey & Pittaway, 2006)

The most recent study developed by Seepana, Khraishi, Paulraj and Huq, found that contract complexity and trust have a positive effect on Outsourcing/Offshoring International relationships among SMEs, and as a major contribution, the authors developed a strategic governance model for managing innovation outsourcing relationships within companies. (Seepana et al., 2022)

- Supplier selection: studies that included the definition of models and criteria for the selection of suppliers.

Within the selection of articles in this category, the authors aimed to identify criteria used by small companies to select suppliers, which differ from those generally used by large companies. Chris Ellegaard was able to do this in 2009 by mapping the purchasing orientations of proprietors, who guide their selection according to criteria such as service, responsiveness, problem solving capabilities, effective internal communication and flexibility(Ellegaard, 2009). More recently, the previously mentioned author together with his colleagues introduced intuition as an important criterion for supplier selection. (Ellegaard et al., 2022)

The compliance of suppliers with certain purchasing criteria adopted by companies influences the speed with which global sourcing decisions are made and this was recently analysed by Francioni B., and Clark K.D., who further analysed how the speed of decision making influences supplier performance.(Francioni & Clark, 2020)

While there have been many studies on outsourcing, none have explicitly addressed the problem of how SMEs should select their subcontractors. Based on this issue, Chang S.-I. and colleagues developed a model that allows SMEs to effectively select their IT/IS subcontractor, however the model is not applicable to any other service.(Chang et al., 2012)

- Supplier finances: this article include solutions that allow companies to finance their working capital, such as the access to credits

Regarding this subject, Zhang, Xu, and Chen analyzed in their study the option of granting credit to suppliers of small companies, through incentive contracts that sought to actively control the risk of supply and payment, this study showed that this alternative not only provides financing for suppliers who suffer from liquidity constraints, but also helps the buyer to find suitable suppliers. (Wu et al., 2020)

- E-procurement: the theme of this article is based on electronic provisioning.

The application of E-procurement in purchasing management was studied by Kamarulzaman and Mohamed, who concluded from their research that e-procurement not only facilitates the selection of suppliers but also increases the efficiency of purchasing management, providing benefits such as security, legality, faster delivery, cost reduction and quality. (Kamarulzaman & Mohamed, 2013)

- Sc collaboration: this category groups the articles that studied horizontal or vertical collaboration between companies, to increase competitiveness focused on the management of food purchases.

The articles found in the sample addressed how small food firms can collaborate to obtain benefits. For instance, the study by Zaridis and colleagues demonstrated that collaboration helps to reduce scale constraints in agri-food firms, in addition to studying how these constraints together with the firm's strategy influence collaborative relationships. (Zaridis et al., 2021)

In a separate study by Galdeano and colleagues, the effect of vertical and horizontal collaboration (co-opetition) for the export of agricultural products was examined (Galdeano-Gómez et al., 2016). Collaboration is also possible throughout the entire supply chain, from the SME processor, wholesaler, retailer and up to the final customer to maximise the profits of all the actors involved. This was proposed through a mathematical business model by Ruteri J.M. and Xu Q. (Ruteri & Xu, 2011)

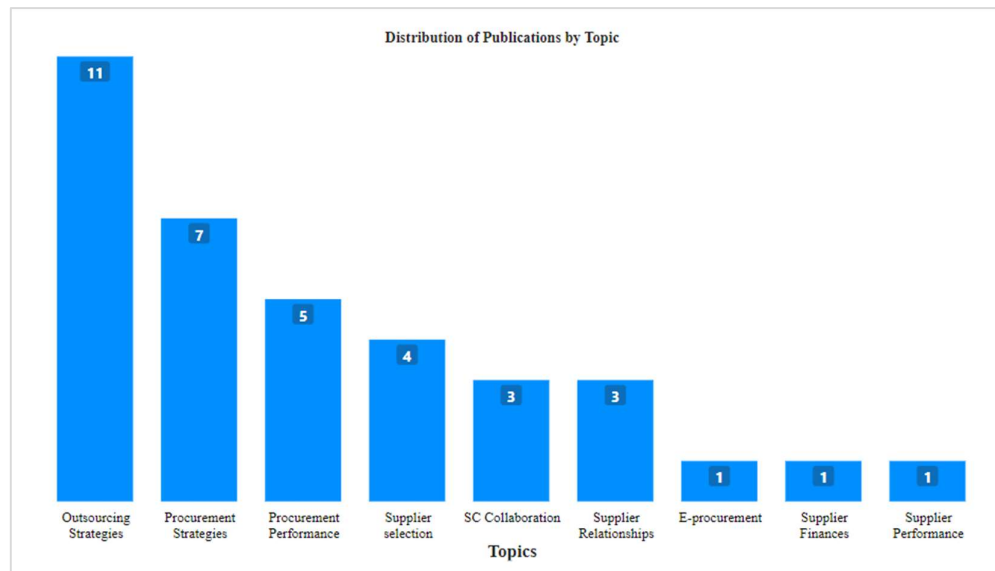


Figure 1.10 - Distribution of publications by topics.

As shown in Figure (1.10). At a general level, the contributions to the literature are mostly related to outsourcing strategies (11), followed by procurement strategies (7) and procurement performance (5). Whereas, the least studied topics were e-procurement and Supplier Finances.

1.3 Gaps in Literature

Once the descriptive statistics had been carried out, it was possible to identify the different gaps in the literature regarding the attention to SMEs purchasing management, which are presented below:

- A variety of articles focused their studies on the general definition of purchasing practices using methodologies such as surveys and interviews. However, the feasibility of applying existing portfolio models or their adaptability has not been a key issue in defining the purchasing strategies of SMEs. More specifically, only the study performed by Lee considered the implementation of a variation of the Kraljic matrix, which according to the author should be redefined for other industrial cases. (Lee & Drake, 2010)
- Many authors mentioned in their research that SMEs are in a disadvantaged position in negotiations, but none of them elaborated further on this issue, leaving a gap in terms of the alternatives that SMEs can implement to mitigate the power imbalances.

- Some authors have presented criteria for measuring the purchasing performance of small enterprises, as well as the relationship between purchasing maturity and purchasing performance. However, these articles do not describe how companies conduct their purchasing performance assessment, taking into account their limited management resources, in order to determine feasible measurement practices for the context.
- Some studies revealed the low interest of small companies in supplier development, which base purchasing actions on a defensive approach to overcome existing serious deficiencies (Ellegaard, 2006)(Quayle, 2002). For this reason, it is useful to study possible preventive actions that can be implemented to manage supplier failure according to the degree of fault and to promote their development in order to build long-term win/win relationships.
- Based on the geographical analysis of the literature, we identified as a major gap in the literature the very limited number of articles that consider companies located in developing countries, among which Latin America with only one article from Brazil.

As mentioned by Ellegaard purchasing management should be seen as a strategic issue for companies due to the vulnerability to inefficient purchasing due to limited resources. (Ellegaard, 2006) This is the reason for considering the importance of addressing the above-mentioned gaps in the literature, since their development would add value to purchasing management from different fronts. In addition, it is important to cover research on food companies because, as demonstrated in the descriptive analysis, there is a major gap in this sector.

2. Research Questions and Research Framework

2.1 Main Literature Gaps

Having identified the main gaps in the literature in the previous chapter, this chapter will develop the conceptual framework and the research questions that will answer the gaps found. The summary of the main gaps in the literature that will be addressed in the study are presented in Table 2.1.

Literature Gaps	
Gap 1	The feasibility of applying existing portfolio models or their adaptability has not been a key issue in defining SME purchasing strategies.
Gap 2	There is a gap in terms of the alternatives that SMEs can implement to mitigate power unbalances.
Gap 3	The approach in which small companies carry out their own evaluation of purchasing management performance has not been described.
Gap 4	There is a need to study possible preventive actions that can be implemented to manage supplier failure and promote their development to build long-term win/win relationships.
Gap 5	There are a very limited number of articles that consider companies located in developing countries

Table 2.1 - Main gaps to be addressed in the study.

2.2 Research Questions and Research Framework

The research questions developed are intended to address the gaps found in the literature review.

RQ1. How do food SMEs in developing countries manage their purchasing portfolio?

The aim of this question is to investigate how the applicability of existing portfolio models, including possible strategies is done in SMEs in Latin America. The development of this question aims to fill the gaps in the literature described in gaps 1, 2 and 4, and requires the subdivision of the following sub-questions:

RQ1.1 How do SMEs determine the purchasing portfolio?

This research question will allow the understanding of how the purchasing budget is spent in food SMEs, whether there is a budget allocation by category and what are the factors that increase the price of purchasing items. This will facilitate the understanding of the complexity of the market, the importance of the items and the management of the purchasing portfolio.

RQ1.2 How is the level of importance of product categories determined?

The aim of this question is to understand how the level of importance of product categories is determined in order to determine the relevance given to certain criteria to define the complexity of the market or the strategic importance of the purchased item.

RQ1.3 What are the purchasing strategies for items considered critical?

The answer to this question aims to identify the strategies implemented by food SMEs to decrease the criticality of purchasing items, which in turn will help us to answer gaps 2 and 4, as possible actions to decrease power imbalances, failures and increase relationship building will be identified.

RQ2. How is the organisational structure of procurement management in small enterprises?

In order to assess the applicability of any specific monitoring tool or strategy, it is necessary to assess the maturity of the organisational structure of food SMEs, which is why this research question will be an input for the other research questions.

RQ3. How procurement performance management in SMEs is evaluated?

In order to fill the gap in the literature regarding the evaluation of procurement management (Gap 3), it is necessary to answer this research question, with the aim of understanding the degree of development of this area and suggesting a tool according to its resources.

RQ4. How is supplier selection and evaluation performed in food SMEs?

The objective of this research question is to understand the criteria and methods of supplier selection and evaluation used by food SMEs in Latin America in order to respond to Gap 4, as understanding the context and practices used will help to define preventive actions or relevant criteria to avoid supplier failures.

This study will be focused on the context of SMEs in the food sector in Latin America, in order to respond to Gap 5.

To answer these research questions, a research framework was developed and is graphically represented in figure (2.1). The sequencing of the topics to be analysed is shown by means of unidirectional arrows and distinguishing colours to demarcate the grouping of the correlated questions into macro topics. The second research question will be answered as a starting point, because understanding the level of formalisation of management will allow us to understand how procurement performance and portfolio management are handled. The macrotopic procurement performance includes the development of research questions 3 and 4, both can be developed in parallel, however, question 4 will be of relevance in the definition of the strategies to be developed in question 1.3. Regarding the macro topic portfolio management, it is necessary to answer first the sub-questions 1.1 and 1.2, which will determine the allocation of the purchasing strategies developed in question 1.3, the union of the three sub-questions (1.1, 1.2 and 1.3), will give an answer to the first research question. Finally, the development of research question 1 will allow the development of Revisited Kraljic's Matrix.

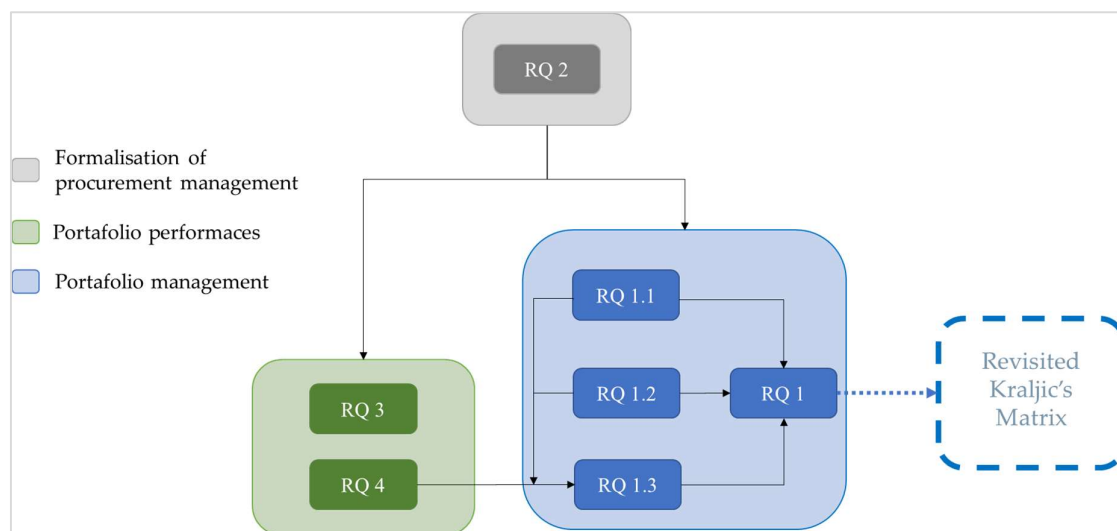


Figure 2.1 - Research Framework

2.3 Research Settings

Once the construction of the research questions has been completed, it is necessary to determine the setting of the study, in addition to focusing our study on micro, small and medium-sized food companies, it was proposed to limit the research to two Latin American countries, Colombia and Paraguay. These are countries whose economic growth is largely due to the productivity of SMEs. In the case of Colombia, 90% of the companies are SMEs, which represent an important burden of 79% in the generation of employment and in the contribution to the Gross Domestic Product (GDP) with 40% (ANIF, 2021). SMEs have a very significant participation in the Paraguayan business network and employment, representing 97% of the economic units and employing 61% of the workforce (BID, 2017). Sampling in both countries will allow for a comparison of procurement activities, these will provide valuable information to find patterns of commonalities between both countries that might be also applied in other countries of the region.

In Colombia, it was decided to diversify the sample between micro, small and medium-sized enterprises, because despite the fact that micro enterprises have the greatest presence in the territory, it is the small and medium-sized enterprises that contribute 65% of employment and 35% of GDP (ANIF, 2021). In the case of Paraguay, medium-sized companies have a very low participation (6%), making up a very polarised business structure, with a large percentage of micro and small units (91%) and few large companies (3%) (BID, 2017), therefore the sampling consist of small and micro enterprises. Although this study does not focus on size comparisons, the generalisation of the sampling will allow valid answers to the research questions with applicability to the current context of the country.

Additionally, the analysis will focus on food manufacturing companies and the HORECA sector, because food manufacturing is a sector marked by a dynamic growth, with an important participation in the industry and additionally with a great opportunity in strengthening its relationships with its agricultural suppliers. In Colombia, food production represents 21.23% of the manufacturing GDP, and in Paraguay it is the sector with the largest economic units within the MSMEs category with a 21% share (ANDI, 2019) (BID, 2017).

The Food and Beverage Services Sector in Paraguay, including catering and restaurants, is the sector with the highest participation in % of economic units within the SME sector and employs 21% of the occupied personnel (BID, 2017), in Colombia it also has a very important participation being in the top MSMEs by sector (Oficina de Estudios Economicos, 2023). In addition, this sector has a varied procurement portfolio, led by fresh meat, beverages, fruits and grains (Semana, 2012), which will provide relevant information for a wider range of purchases.

3. Methodology

3.1 Research strategy and case studies

To approach an empirical research, there are two main ways, a quantitative or qualitative research, the first one makes use of quantification methods, such as statistical methods to obtain results (Ghezzi, 2023). While a qualitative research method as mentioned by Anthony W. Heath involves the study of human phenomena, through the interpretation of the words of the interviewees and the use of different sources of information such as observations, documents and quantitative data (Heath, 1997). Comparing both methods, quantitative research is oriented towards evaluating existing theories, while qualitative research favours the construction of new theories (Ghezzi, 2023), as it focuses on understanding the context of the problem, bringing the researcher closer to the problem and providing greater flexibility for exploratory analysis (Almeida et al., 2017). On this basis, the qualitative method will be chosen as the main methodology for this study, due to the complexity, lack of information and extent of the topic, since, as discussed in previous chapters, procurement management is divided into multiple subtopics and has been poorly studied, especially in Latin America.

Within the qualitative method approaches, we will choose to use the case study methodology, described by Yin 2014 as an empirical research in a real life context (Yin., 2014). The methodology for the implementation of this method will first require the definition of the research questions and the research framework, a step that was already described in chapter 2, after which the theoretical aspects to be considered in the research and in the analysis of the cases will be identified through the construction of a conceptual framework (Miles et al., 2019) Once the research focus has been determined, the study units (companies to be analysed), the tools to be used for data collection and the semi-structure of the interviews will be defined. Subsequently, we will move on to the core of the research, which is the collection of data through an established interview protocol and the analysis of the interviews through a coding

methodology, from which an analysis of the individual cases and the correlation between them will be carried out through a cross-case analysis by sector and between sectors. Finally, using the information obtained from the data analysis, an alternative proposal to the Kraljic matrix will be constructed, with the aim of applying this model to food SMEs in developing countries.

This method will be applied for multiple cases (table 3.1), as it is considered more appropriate to understand the complexity of the context and to identify the different variations between cases, the organisations interviewed will be selected as described in section 2. 2 and the number of organisations will be kept limited; 10 manufacturing companies and 6 companies for the HORECA sector; having as main source of evidence semi-structured interviews, which will be implemented using both a descriptive and exploratory approach, the first being important to validate the characteristics already present in the literature and the second necessary to investigate the characteristics only applicable for the case study (Chopard & Przybylski, 2021) since, there is no unique set of answers for the context to be evaluated, food SMEs in Latin America.

Case	Sector	Product	Location	size
Ice Cream Company	Manufacture	Ice creams	Paraguay	Small
Pasta Company	Manufacture	Pasta	Paraguay	Micro
Cheese-flavored yuca rolls	Manufacture	Gluten free products	Paraguay	Micro
Sausages Company	Manufacture	Sausages	Paraguay	Micro
Veg Burger Company	Manufacture	Plant-based products	Paraguay	Micro
Homemade Restaurant	HORECA	Homemade food	Paraguay	Micro
Sandwich catering	HORECA	Meat Sandwich	Paraguay	Micro
Barbecue Catering	HORECA	BBQ catering	Paraguay	Micro
Chips Company	Manufacture	Fried snacks	Colombia	Medium
Snack Company	Manufacture	Baked snacks	Colombia	Small
Coffee Producer	Manufacture	Coffee	Colombia	Small
Chocolate Company	Manufacture	Chocolates	Colombia	Micro
Yogurt Company	Manufacture	Yogurt	Colombia	Micro
Ice Cream Restaurant	HORECA	Ice creams/ crepes	Colombia	Small
Fast Food Restaurant	HORECA	Colombian food	Colombia	Micro
Italian Restaurant	HORECA	Italian food	Colombia	Micro

Table 3.1- General description of the cases under study

The size of the companies was determined on the basis of annual turnover, according to the legal framework of both countries, Decree 957 in Colombia and Article 5 of the Law 4457 in Paraguay. (MTESS, 2023)(MINCIT, 2019)

Size	Annual Sales Turnover (€)		
	Colombia		Paraguay
	Manufacturing Sector	Services Sector	Manufacturing and Services Sector
Micro	<182097	<253949	<63212
Small	<1577807	<1015572	<316061
Medium	<13365895	<3717851	<758547

Table 3.2 - Size classification by annual turnover

3.2 Conceptual Framework

After defining the research questions, we divide the topics to be investigated into macro topics or areas of study of purchasing management. For the construction of the conceptual frameworks, references from the literature review as well as books on procurement management were taken into account.

The first part of the conceptual framework, presented in table 3.3, is related to the macro-topic formalisation of purchasing. This macro topic is related to RQ 2. *How is the organisational structure of procurement management in small enterprises?* And in order to answer it, it was necessary to divide it into 4 main topics, Role of the purchasing manager within the organisation, Functions of the purchasing manager, Degree of Documentation and IT tools used for purchasing management. The components of each topic for this and the following conceptual frameworks were compiled using literary references.

Topic	Components	References
Role of the purchasing manager	CEO	(Ellegaard, 2006) (Ellegaard, 2009) (Johnson & Flynn, 2015)
	Person of Trust, member of the board of directors	(Pressey et al., 2009)
	Administrative Staff	(Johnson & Flynn, 2015)
	Supply Professional	(Johnson & Flynn, 2015)
Functions of the purchasing manager	Supplier Selection	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Negotiation with suppliers	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Contract management	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Planning	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Purchase Request to Supplier	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Purchasing Logistics	(Johnson & Flynn, 2015)
	Purchasing Reception	(Monczka et al., 2019)
	Inventory Control	(Johnson & Flynn, 2015)
	Outsourcing Management	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Payment Management	(Monczka et al., 2019)
	Projection of purchases (forecast)	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Follow-up of shortages	(Monczka et al., 2019)
	Supplier evaluation	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Cost analysis	(Monczka et al., 2019)
Degree of Documentation	Contracts	(Monczka et al., 2019) (Nsimbila & Jurriëns, 2012) (Lysons & Farrington, 2020)
	Formal purchasing quotations	(Pressey et al., 2009)
	Formal written supplier quotations	(Monczka et al., 2019)
	Existing suppliers' price database	(Johnson & Flynn, 2015)
	Comparative supplier selection sheets	(Cousins et al., 2008)(Cousins et al., 2008) (Johnson & Flynn, 2015)
	Purchase Request	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Payment orders	(Monczka et al., 2019)
	Supplier evaluation forms	(Johnson & Flynn, 2015)
	Goods Receipt forms	(Johnson & Flynn, 2015)
	Purchase Orders	(Monczka et al., 2019) (Johnson & Flynn, 2015)
	Receipts/Invoices	(Johnson & Flynn, 2015)
	Cost Spreadsheets	(Johnson & Flynn, 2015) (Monczka et al., 2019) (Pressey et al., 2009)
IT Tools	ERP	(Johnson & Flynn, 2015) (Monczka et al., 2019)
	Spreadsheets	(Johnson & Flynn, 2015)
	Emails	(Lysons & Farrington, 2020)

Table 3.3 - Conceptual Framework – Macro Topic Formalisation

The second part of the conceptual framework, shown in Table 3.4, refers to the macro topic Portfolio Management, related to the RQ1 *How do food SMEs companies in developing countries manage their purchasing portfolio?* To investigate it, it is necessary to divide it into 3 topics, Spend Analysis, Spend Classification and Spend Strategies. The topic Spend Classification is further divided into 4 sub-topics, Market Complexity, Strategic Importance, Dependency of the Supplier and Usage Rate.

Topic	Sub Topic	Components	References	
Spend Analysis	NA	% of expenditure allocated to Purchases	(Ellegaard, 2006)	
		% of budget per purchase item identified	(Monczka et al., 2019)	
		Identification of the costliest purchases and the motive	(Nsimbila & Jurriens, 2012)	
Spend Classification	Supply Risk	Product Availability	(Krajlic, 1983) (Lee & Drake, 2010)	
		Supplier Concentration (Monopoly conditions)	(Krajlic, 1983) (Lee & Drake, 2010)	
		Logistics costs (transport)	(Krajlic, 1983)	
		Production capacity of suppliers	(Krajlic, 1983)	
		Suppliers bargaining power	(Krajlic, 1983) (Lee & Drake, 2010)	
		Substitution possibilities	(Lee & Drake, 2010)	
		Storage Risk	(Krajlic, 1983)	
		Uncertainty of the market	(Krajlic, 1983)(Lee & Drake, 2010)	
	Strategic Importance	Strategic Importance	Impact on Quality	(Krajlic, 1983) (Lee & Drake, 2010) (Overby & Servais, 2005)
			Impact on Cost	(Krajlic, 1983) (Lee & Drake, 2010)
			Inventory Costs	(Krajlic, 1983) (Lee & Drake, 2010)
			Competitive differentials created	(Krajlic, 1983) (Lee & Drake, 2010)
	Dependence of the Supplier	Dependence of the Supplier	Size of the supplier	(Cousins et al., 2008) (Lee & Drake, 2010)
			Possibility to apply sanctions for non-compliance	
			Motivation to work together	
	Usage Rate	Usage Rate	Critical procurement suppliers scarce	(Cousins et al., 2008)
			None or little facility to change suppliers or little	
			Formal contracts with suppliers	
			Supplier development programmes	
	Sourcing Strategies	NA	Supplier Base Optimization	(Monczka et al., 2019) (Krajlic, 1983)
Lower the inventory, day-to-day purchasing (lean)			(Wilson & Roy, 2009) (Pressey et al., 2009)(Monczka et al., 2019)	
Vertical Integration			(Cousins et al., 2008) (Krajlic, 1983)	
Horizontal Collaboration			(Ellegaard, 2006) (Zaridis et al., 2021)	
Supplier Relationships			(Pressey et al., 2009) (Monczka et al., 2019)(Krajlic, 1983) (Ellegaard, 2006)	

Table 3.4 - Conceptual Framework – Macro Topic Portfolio Management

The third and last part of the conceptual framework, presented in this section and shown in Table 3.5, refers to the macro topic of Purchasing performance, subdivided in 3 topics. The first, Evaluation of Procurement Management, aims to answer RQ3 *How procurement performance management in SMEs is evaluated?* while the second, Supplier Selection, and the third Supplier Evaluation, both aim to answer the final research question RQ4 *How is supplier selection and evaluation performed in food SMEs?*

Topic	Sub Topic	Components	References
c	NA	KPIs (Cost, Quality, Time, Supplier)	(Cousins et al., 2008) (Johnson & Flynn, 2015)
		Procurement Budget Compliance	(Johnson & Flynn, 2015)
		Savings and cost tracking	(Paik et al., 2009)(Pressey et al., 2009)
Supplier Selection	Factors	Quality	(Ellegaard, 2009) (Ellegaard, 2006)(Quayle, 2002) (Monczka et al., 2019) (Pressey et al., 2009)
		Confidence through recommendations	(Ellegaard, 2009)
		Attention to your needs	(Pressey et al., 2009)
		Consulting and expertise from the manufacturer	(Pressey et al., 2009)
		Networking Facilities	(Ellegaard, 2006)(Pressey et al., 2009)
		Single source supplier	(Krajlic, 1983)
		Immediate product availability	(Cousins et al., 2008) (Ellegaard, 2009)
		Financing facilities	(Cousins et al., 2008)
		Relationship history	(Pressey et al., 2009) (Ellegaard, 2006)
		Company reputation	(Pressey et al., 2009) (Cousins et al., 2008)
		Order size	(Pressey et al., 2009) (Cousins et al., 2008)
		Win-Win Collaboration Potential	(Ellegaard, 2006)
		Ease of Distribution or Proximity	(Ellegaard, 2009) (Wilson & Roy, 2009)
		Financial capacity to produce	(Monczka et al., 2019) (Cousins et al., 2008)(Pressey et al., 2009)
		Price	(Ellegaard, 2006) (Ellegaard, 2009)(Pressey et al., 2009) (Quayle, 2002) (Cousins et al., 2008)
Supplier Evaluation	Factors	Quality in delivery	(Monczka et al., 2019)
		Quality according to production performance	(Monczka et al., 2019)
		Delivery conditions	(Monczka et al., 2019)
		Flexibility in payment, financing	(Cousins et al., 2008)
		Attention to your needs	(Monczka et al., 2019)
		Consulting and expertise of the manufacturer	(Pressey et al., 2009)
		Non-compliance with contract	(Monczka et al., 2019)
	Formality	Evaluation/monitoring records	(Monczka et al., 2019)
	Actions in case of bad performance	Negotiation	(Monczka et al., 2019)
		Changing supplier	(Monczka et al., 2019)
		Implementing sanctions	(Monczka et al., 2019)
		Investment in supplier development	(Monczka et al., 2019)

Table 3.5 - Conceptual Framework – Macro Topic Purchasing Performance

3.3 Case Studies' Selection

As mentioned in section 3.1, the selection of cases will be based on what is described in the research settings. Contact with the companies will be made through different sources of information, for the case of Paraguay the collection of contact details of manufacturing SMEs will be made through the Asomypimes (Association of industrial SMEs-Paraguay), while in Colombia the database reported by the Chamber of Commerce (Organisation made up of owners of small, medium or large businesses) will be used, in addition to this an investigation of the businesses will be made through sources such as the internet, social networks or contact networks (colleagues-friends). The selected sample includes 16 food SMEs, of which 10 belong to the manufacturing sector and 6 to the HORECA sector, located equally in Colombia and Paraguay:

- Case 1 (Ice Cream Company): Paraguayan manufacturing company that offers 5 different flavours of homemade ice cream, in a presentation in 5-litre buckets, with a total of 7 employees and an annual sales turnover of approximately 82 thousand euros, therefore it can be classified as a small company.
- Case 2 (Pasta Company): Paraguayan manufacturing company that offers vegetable flavor dried pasta, with a total of 5 employees and an annual sales turnover of 3,8 thousand euros. It is very new in the market, founded in 2021, and is classified as a micro company.
- Case 3 (Cheese-flavored cassava rolls): Paraguayan manufacturing company that offers gluten-free products based on meat and cassava, in frozen or cooked presentation, the owner has extensive knowledge in the field because he has a long history in food manufacturing and extensive knowledge in purchasing, as he is an academic professor in this area of study, this company has a total of 3 employees and an annual sales revenue of approximately 23 thousand euros, classified as a medium-sized company.
- Case 4 (Sausages Company): Paraguayan manufacturing company that offers traditional sausages made of cow and pork from San Juan, a paraguayan region. This company has a total of 6 employees, is classified as a micro company.
- Case 5 (Veg Burger Company): Paraguayan manufacturing company that offers vegetable burgers, with 4 employees and an annual sales revenue of 15 thousand euros. Is classified as a micro company.
- Case 6 (Homemade Restaurant): Paraguayan family restaurant, which offers homemade food from a varied menu, cakes and empanadas, its owner is a person with a long experience in canteen management,

additionally this company is classified as micro and has a total of 6 employees.

- Case 7 (Sandwich Catering): Paraguayan catering that offers pulled pork sandwiches for delivery and events. The company has 4 employees and generates around 58 thousand euros in annual sales, being classified as a micro company.
- Case 8 (Barbecue Company): Paraguayan catering that offers barbecue and side dishes for events. The company has 3 employees and an annual sales revenue of 23 thousand euros, and is classified as a micro company.
- Case 9 (Chips Company): Colombian manufacturing company offering fried products derived from potato, plantain, flour of wheat and pork and baked products derived from corn, founded in 2017 by a food engineer with extensive knowledge in the industry, considered as a medium-sized company for having a total of 67 employees and total annual sales of 4 million euros.
- Case 10 (Snack Company): A Colombian manufacturing company that offers baked goods, mainly based on sago flour, has a total of 18 employees and generates approximately 1.6 million euros in annual sales, classified as a small company.
- Case 11 (Coffee Producer): Colombian processing company, which is in charge of buying green beans, drying, packaging and distributing them, is a small family business with a total of 7 employees and an annual sales revenue of approximately 1.6 million euros, which is why it is classified as small.
- Case 12 (Chocolate Company): Colombian manufacturing company that offers high-quality handmade chocolates, is a recent company, founded 3 years ago, which has strategic guidelines (mission, vision, organisational culture), this company was classified as micro because it has a total of 5 employees and an annual sales turnover of 40 thousand euros.
- Case 13 (Yogurt Company): Colombian manufacturing company that offers a high variety of yogurt and milk beverages, and its main clients are children dining halls run by the state. Is classified as a micro company with 7 employees and an annual sales revenue of 38 thousand euros.
- Case 14 (Ice Cream Restaurant): Colombian ice-cream shop which has several branches and which is also a franchisee. It is a company categorised as small because it has no more than 25 employees and an annual sales turnover of 300 thousand euros.
- Case 15 (Fast Food Restaurant): Colombian restaurant offering fast food from the Colombian Caribbean, this company has two franchises located in

Bogota and Sucre, employing a total of 8 people and generating approximately 60 thousand euros, it is classified as a micro enterprise.

- Case 16 (Pizza Restaurant): Colombian restaurant offering mostly pizzas, as well as other Italian dishes. It is run by the owner and his wife, and has two other employees. Its annual sales turnover is 12.5 thousand euros, and it is classified as a micro company.

3.4 Data Collection: Research Instrument and Interview Protocol

The data collection process follows the structure of the Conceptual Framework, which as described above related all the macrotopics of interest for this research to the literature, as the main objective of the interview protocol will be to confirm or refute what was found in the literature review and additionally to identify new findings that expand the literature.

The interview will be developed with semi-structured questions (Annex A), which will allow a more exploratory approach to investigate the reality of these companies without restricting the answers in any way, these interviews provide flexibility, as they start from planned questions, which can be adjusted in order to expand information, clarify terms, identify ambiguities and generate greater closeness between the two parties. The semi-structured interview included questions related to the nature of the company to facilitate its classification and additionally the questions were reordered in order to maintain a more fluid conversation. (Díaz-Bravo et al., 2013)

The structure of the interview can be described through the following points:

- Introduction: general questions on annual sales revenue, number of employees and products offered.
- Organisational structure and administrative management of purchasing: questions related to the purchasing manager and his/her functions, documentation and tools used in the management and methods of evaluation of the management.
- Purchasing portfolio: questions developed to understand the annual purchasing budget, the purchasing portfolio and the allocation of budget to each product/service purchased.
- Classification and Analysis of Purchasing Expenditure: questions to identify the products or services considered critical for the interviewees and the strategies implemented in the management of these products.

- **Supplier Management:** questions related to selection criteria, evaluation methods, actions in case of repetitive failures, size of suppliers and problems experienced with suppliers in purchasing management attributable to their size.

Before proceeding with the development of the interviews, a review of social networks and websites will be carried out, for those cases that have these facilities, as this second source of information is considered important to understand the nature of the company, the products offered and also other relevant information about the company that may be available (formal website, location, strategic guidelines (mission, vision, culture)), this will provide a better context of the cases to get the best benefit from the research instrument.

Once the protocol has been defined and the secondary sources have been reviewed, the interviews will be conducted by telephone in the interviewee's mother tongue (Spanish), which will allow for a better interpretation of the results. 16 interviews will be conducted (one interview per case) with an approximate duration of 30 minutes. All conversations will be recorded with the permission of the interviewee, in order to preserve the details reported and will be transcribed in the following 48 hours, thus allowing a better retention of the information mentioned. The table 3.6 summarises the data collection process.

Case	Roles of the interviewees	Interview duration	Secondary source
Ice Cream Company	Owner	40 min	Social network- Facebook
Pasta Company	Owner	26 min	Social network - Instagram
Cheese-flavored cassava rolls	Owner	27 min	Social network - Facebook
Sausages Company	Owner	27 min	None
Veg Burger Company	Owner	40 min	Social network - Instagram
Homemade Restaurant	Owner	40 min	None
Sandwich catering	Owner	21 min	Social network - Instagram
Barbecue Catering	Owner	32 min	Social network -Instagram
Chips Company	Owner	18 min	Website,Social network -Instagram
Snack Company	Owner	18 min	Website, Social network - Instagram
Coffee Producer	Owner	22 min	Social network - Instagram
Chocolate Company	Owner	37 min	Website, Social network - Instagram
Yogurt Company	Owner	21 min	Website
Ice Cream Restaurant	Owner	37 min	Social network - Instagram
Fast Food Restaurant	Owner	30 min	None
Italian Restaurant	Owner	46 min	None

Table 3.6 - Information about the data collection process

3.5 Data Analysis: research conduction and interview coding

Because the analysis of qualitative data depends largely on the interpretation given to them, the analysis of the interviews will be carried out through the pre-coding of the data, this coding will be carried out thanks to the construction of a short statement theoretically supported (code) that allows to represent a fragment of the data (Charmaz & Keller, 2016). Additionally, *in vivo* codes will be used, which can be described as the expressions of the participants, reported in the literal sentences during the development of the interviews, this will avoid losing the richness of what was mentioned within the cases and will provide greater value for those sentences that cannot be located in a bibliographic code that describes them (Bonilla-García & López-Suárez, 2016), the latter will be highlighted in the findings chapter as new. The coding of the information obtained from the 16 interviews will be a repetitive and iterative process, allowing consensus between both interviewers, in order to eliminate bias in the interpretation of results and unify the focus of the analysis.

During the coding process, a database with the structure of the Conceptual Framework will be constructed, starting from this initial framework, two columns will be added per case, the first one will refer to the confirmation of what has been reported in the literature (by marking the box with an x) and the second column will show each of the *in vivo* codes obtained from the interviews, in case of finding an *in vivo* code that does not refer to what was previously reported in the literature, this will require the addition of a new row and the labelling with a fluorescent colour to facilitate further analysis. Once the coding process has been completed, we will proceed to the analysis of the results shown in chapter 5 and the methodology implemented to carry it out will be shown

4. Findings

This chapter presents the findings from the case studies analyzed, the results will be shown according to different levels of analysis, starting with a within-case analysis, and followed by a cross-case analysis focused on two supply stages (Manufacturing and HORECA), this analysis will be explained in the Cross Case Analysis Section. In the cross-analysis of the HORECA sector, a parallel comparison with the manufacturing sector was also carried out, highlighting differences and similarities. The development of both levels of analysis will be carried out by describing the findings within three macro themes in the research questions: formalization of purchasing management, portfolio management, and procurement performance.

4.1 Within Case Analysis

As a starting point, a within-case analysis was carried out for all the case studies, which was based on the coding of the information obtained from the transcriptions of the interviews. The determination of the codes that summarized the main idea of each topic discussed during the interview was based on the conceptual framework discussed in the Methodology Chapter (3), and the concepts not previously covered in the literature were also coded and highlighted as new findings. Therefore, in vivo coding was developed based on the identification of phrases mentioned by the interviewees that referred to a specific topic (code). These codes were then aggregated in common topics that were either aligned with literature or emerged from data.

For a better understanding of this level of analysis, an extract from the coding table that refers to the portfolio management macro topic for the case of Pasta Company is shown in Table 4.1, where seasonality, financial weaknesses, and mandatory order size, highlighted in yellow, are shown as new findings. Additionally, the confirmation to code or subtopic is shown with an X mark and its respective quote.

Topic	Subtopic	Component	Pasta Company	
Spend Classification	Supply Market Complexity	Product Availability		
		Monopoly conditions		
		Seasonality: Impact on product availability and prices	X	"Eggs are scarce and very expensive depending on the season, during Easter week they go up due to seasonal demand "
		Logistics costs	X	"It is very difficult to find egg suppliers willing to offer the logistics to the factory"
		Production capacity of suppliers		
		Financial weaknesses: cash flow inconsistency, low liquidity	X	"Because we don't have credit, the flour supplier doesn't give it to us. If I need to make 100 kilos of noodles today, I have to have money to buy 100 kg of flour to make that production "
		Suppliers bargaining power	X	"They didn't want to sell to us, they didn't answer our messages because they only want to sell in large quantities."
		Substitution Possibilities	X	"Some suppliers have offered us powdered eggs, but that doesn't work for us."
		Shelf life (storage risk)		
		Mandatory order size	X	"We are forced to buy 10 packs of 25 bags of containers to get a discount" They didn't want to sell to us, they didn't answer our messages because they only want to sell in large quantities."
	Uncertainty of the market			
	Strategic Importance	Quality Impact	X	"We cannot present something that does not look good or that does not have a good color, no matter that the price of the raw material is higher"
		Cost Impact	X	"There are products that are critical because of their cost, for example, a single package represents 30% of the cost and flour has a very high price"
		Inventory Cost		
		Competitive differentials created		

Table 4.1 - Extract from the coding Table

4.1.1 Level of formalization of purchasing management

The first macro topic to be analyzed is the formalization of purchasing management, highlighting the role of the purchasing manager, the degree of documentation, and the use of IT tools in procurement activities.

4.1.1.1 Role of the purchasing manager

The first aspect analyzed was the role of the purchasing manager, finding that the majority of the companies analyzed expressed that they did not have an organizational structure of supply management (12/16). Companies such as Chocolate o expressed that the allocation of procurement responsibilities was attributed to the owner of the company as a secondary role, as the owner of the company mentioned "I do the purchasing management myself", Similarly, other interviewees also expressed that they

supported the purchasing management in a trusted employee or family member , as expressed by the owner of Veg Burger Company *"purchases are made by me and my mother"*, an annotation that suggests that there is no clear separation of purchasing activities or assignment of management to a professional with the appropriate skills and expertise required for management. To conclude this point, the development of the role of a procurement manager by the largest company in the set of cases analyzed (Chips Company /medium-sized company) was reported *"Purchasing is carried out by the Supply Chain manager"*.

In addition to the analysis of the role of the purchasing manager, the functions attributed to him/her were evaluated, finding which of the procurement responsibilities reported in the literature were confirmed at this level of analysis. For the within case analysis, the company Chocolate Company was selected as an example, since it was one of the companies that reported a greater completeness in terms of purchasing functions. The owner of the company confirmed that among the main purchasing activities is the selection of suppliers, saying *"we were investigating the most suitable suppliers and others came to us offering their services and today we have a list of suppliers to whom we turn monthly"*, likewise also confirmed that the purchase request to the supplier is within the main functions of the management *"We request what we require by calls, for example, chocolate, toppings, milk cream, butter and coloring, whatever is needed is requested by phone or WhatsApp"*, and he also confirmed that the reception of purchases is another of the basic activities of the management *"all suppliers provide home delivery service and we take care of the reception"*. Additionally, this specific case also confirmed the implementation of uncommon functions in Chocolate Company , which are seen as a plus for management, including the projection of purchases, follow-up of faults, cost recording and cost analysis, confirming these functions with the following annotations, respectively: *"I forecast what my expenses are going to be for the following month and that helps me to make decisions"*, *"I keep a record of faults where I write down if it arrived expired, even if the packaging says that it is valid, or if it arrived without being batched or without an expiration date"*, *"I have an Excel where I place all the purchase invoices weekly"* and *"with the cost record I see monthly what I can correct for the following month, for example, if there was a supplier who was bought twice in that month, I investigate what happened there and how I can optimize the management"*. (Chocolate Company)

4.1.1.2 Degree of documentation

The degree of documentation at the companies analyzed differs among them, which is an indication that documentary evidence may depend on several factors, such as the

size of the company, the nature of its business or the organizational level. For this reason, to explain the bibliographic confirmation of the various documents, we will use citations reported in the study within different cases.

Firstly, the use of invoices as documentary evidence was confirmed, since companies such as Yogurt Company expressed to make use of them due to legal requirements: *"Legally you have to have an invoice for everything, both to sell and to buy"*. The same company has also implemented supplier evaluation and selection forms: *"Here we have some forms where suppliers are qualified, these forms are used for both selection and evaluation"*. Moreover, the analysis of the case of Chocolate Company confirmed the use of written supplier budgets, purchase requisitions and reception forms, respectively, as stated by the interviewee: *"what we do is approve the budget that the supplier sends us"*, *"my brother, who is in charge of production, gives me a monthly requisition form"* and *"we have a register where I write down the conditions in which the raw material arrived"*. It is important to note that only the largest company (Chips Company/ medium-sized company) confirmed the use of a formal purchasing budget: *"we make an annual budget, we do it in December every year, in which each area has its own budget"*.

Among the findings that do not correspond to a topic previously mentioned in the literature, some companies reported the use of a database of prices of existing suppliers for evaluation purposes. For example, the company cheese-flavored cassava rolls reported: *"I have a comparative Excel by raw material of the purchase prices of each supplier"*.

4.1.1.3 *IT tools in procurement activities*

This first level of analysis allowed us to identify that the technology used in each of the companies interviewed varies. We found cases such as Chips Company, which confirmed the implementation of purchasing systems such as ERP *"We use an ERP that has different modules, including purchasing module"*, or cases such as Snack Company, which made use of tools such as Excel to support its activities *"I use Excel for cost analysis"*. Additionally, Chocolate Company mentioned that: *"suppliers take the order, either by call or by WhatsApp"*, explaining that instant messaging (WhatsApp) is used as a channel of communication with suppliers, and this is new evidence for technology and communication which was not mentioned in literature.

4.1.2 Portfolio management

Following, the macro-topic of portfolio management was analyzed, where we sought to understand how companies purchase, on which they spend most of their budgets, the identification of critical acquisitions, and subsequent strategies employed.

4.1.2.1 Spend Analysis

The first aspect examined for portfolio management is the spend analysis, in which we seek to obtain information about how the companies are spending their money. To identify the strategic importance of purchasing from a cost perspective, companies were asked about the percentage of their annual budget spent on procurement. For instance, Pasta Company replied, *"We have not identified this, we survive on what we sell, everything is in expenditure, such as advertising, etc., we have not yet made any profit"*, explaining that the company was still very unstructured in this sense, while other cases, such as Chocolate Company, was able to give us an approximate figure *"Approximately, I would say between 50 and 60%"*. Thanks to this we were able to confirm that the companies have clearly identified the materials they buy, however, as in the case of Pasta Company, not all of them have set a percentage of budget use by category.

We also inquired whether these companies have identified the purchased item that generates the highest expenditure for the company. In the case of Pasta Company, flour was identified as a high-cost purchase, due to the volume of purchases, as it is the main raw material, and packaging due to the high prices, as shown in the annotation *"a single package corresponds to 30% of the cost"*.

The seasonality of the items purchased is a factor that was not found in the literature and was quite often mentioned when talking about purchases with higher costs, as an example we quote what Snack Company said: *"The products that cost the most are cheese, the weather in Colombia varies a lot, there is a lot of summer, a lot of winter, so this affects the productivity of the milk, and therefore the production of cheese is lower"*. One factor which was mentioned to cause fluctuations in the cost of raw materials was the uncertainty of the market due to non-seasonal climatic adversities. In the interview with cheese-flavored cassava rolls Company, the CEO commented on the atypical situation of prolonged drought affecting the mandioca which is their main raw material in Paraguay, *"at the price of a bag of starch today, I would previously buy 3 bags of starch"*. The market's uncertainty is also due to changes in government policies that affect Yogurt Company in the purchase of powdered milk, *"they have imposed many taxes lately, for example, you have to pay a tax to the FEDEGAN livestock farmers' fund, all this has increased the price a lot, an increase of more than 100%"*.

4.1.2.2 Spend Classification

We consulted the companies about critical purchases, attempting to classify their responses along the axes of Kraljic's matrix. In the first axis, Supply Complexity, we place those external or market factors mentioned as a reason for criticality, these factors derive from existing literature with the addition of other factors mentioned during the interviews such as seasonality and financial restrictions, due to not having access to credit from both suppliers and banks as well as not having available economic resources that can be used to anticipate purchases.

Indeed, the financial restrictions are a common issue mentioned by the companies, taking as an example the case of Pasta Company regarding flour, who indicated that due to low purchasing volumes they do not have access to credit *"Because we don't have credit, the flour supplier doesn't give it to us. If I need to make 100 kilos of noodles today, I have to have money to buy 100 kg of flour to make that production"*, another example is that of cheese-flavored cassava rolls Company who mentioned financial restrictions as a limiting factor to counteract the uncertainty of the market as a factor that caused a lot of price increases *"If I had 5 million extra I would buy because I know that it is going to continue to rise"*. Another aspect that is often mentioned are the restrictions on order size, for example, some companies indicated that this factor is critical due to the obligation to buy in large volumes, since their production volume is low and the cost of this purchase translates into frozen cash, as mentioned by cheese-flavored cassava rolls Company *"there are difficulties in volume purchases in the packaging component, sometimes we end up having a two-year stock, it is a frozen investment"*, while others like Sausages Company pointed out the need to buy often and in low volumes *"maintaining an inventory is complicated because we do not use preservatives, we have to buy constantly and it runs out quickly"*. The lack of availability of products at particular periods of the year due to seasonality also increases the complexity of the market and the risk of supply, as mentioned by Pasta Company *"eggs are scarce and very expensive depending on the season, during Easter week they go up due to seasonal demand"*.

On the Strategic Importance axis, the responses were classified according to the factors present in the literature. For example, we identified that for Veg Burger Company, price is a critical factor, as they mentioned *"we always look for the lowest price because every cost has an impact on the final cost, and we want to be competitive"*. Another example is the case of Sausages Company which mentions the criticality of meat as a raw material in addition to price, due to the impact on the quality of the final product *"by changing supplier the raw material changes and that affects the taste of the product"*, Sausages

Company also mentioned that they had packaging as another critical purchase item that responded to the Inventory Cost factor *"our disadvantage is that to work well one needs to buy packaging in quantity and it is money that remains standing when not used over a period of time"*.

Another aspect to analyze is the dependence of the supplier on the buyer and the other way around, we consider the factors described in the literature and according to the answers of the companies, the dependency confirmations were identified. Analysing the dependence of the buyer on the supplier, a factor that could be confirmed from the literature for the case of Sausages Company is that of suppliers of critical purchases, who told us *"There are very few suppliers of pork with the required sanitary authorisation"*, demonstrating a high dependence on the supplier. Looking at it from the supplier's point of view, one way of finding out about their dependence on the companies is through their motivation to work together, Homemade Restaurant told us *"If you are a good buyer they help you, they give you a fridge and gifts, if you use the supplier's sales application they give you points and through that you get benefits and discounts."* In some cases, we observe the absence of the aforementioned motivation, which Ice Cream Company told us about, claiming that the supplier did ignore them when making complaints *"they don't pay attention to our complaints because they sell the same, that's why I'm telling you, they are a very big importer, and they control the market"*.

4.1.2.3 Sourcing Strategy

After gathering data on which products are considered critical when making purchases, as well as the reasons for this, we inquired whether these companies had strategies in place to minimize the impact of market threats or risks or to optimize internal benefits related to purchasing management. The classification of the responses was done by taking into consideration those proposed by the Kraljic's matrix, plus the strategies reported in the literature review.

We note for example in the case of cheese-flavored cassava rolls that their strategy for the raw material cassava starch, so important as it is the main ingredient of their products as well as critical from the point of view of product availability due to the drought in Paraguay and the uncertainty of the cassava market, is to maintain good relations with their suppliers. The cheese-flavored cassava rolls Company mentions *"I have been in the business for several years and I maintain a good relationship with the suppliers", "I share information with the suppliers", " I have a good relationship with the suppliers", "in terms of being a partner"*, However, this does not condition the company to do single sourcing, as he states that he always has an alternative supplier *"I try not*

to get married to just one” and “if I have to buy starch today, I contact at least 4 suppliers to find the cheapest one”, because the instability of the supply makes the prices increase too much “with the price of a bag of starch today, I used to buy 3”.

Barbecue Catering provides an example of how the strategy varies depending on the type of product. In the case of dairy products, they take an approach of reducing inventory and increasing purchasing frequency, buying as required on a weekly basis due to the shelf life of the product. On the other hand, for meat products that can be frozen and also present seasonal price variations, the strategy used is to increase the stock and make the supply in the seasons of lower cost and better quality: *“I have a cost sheet to know in which season it will increase and prepare for it. When it is in season, a good cost, we buy more of it and freeze so that we can have a better line for the cold season”*. In the same line, Barbecue catering's case is interesting because within their group of strategies the interviewee explained that he includes the relationships with both his suppliers, expressing *“it is important to have friendship, communication, trust”* and with competitors in a type of horizontal collaboration *“we always share information about suppliers with colleagues, who has the best prices, the best quality”*.

4.1.3 Procurement Performance

The last macro topic studied in the analysis within the case was Procurement Performances, which was intended to understand the management of the evaluation and selection of suppliers and the evaluation of the company's own purchasing management.

4.1.3.1 Supplier Selection

One of the findings to be highlighted is the tendency of most of the interviewees to choose suppliers based on two main parameters: quality and price. Some of them, as highlighted by Pasta Company, prioritize quality over price; *“we look for our product to have quality in taste and visual because we sell something different, it does not matter if the price of the raw material is high”*. However, it could also be understood that the interviewees did not put aside the price issue, since many mentioned the importance of savings when selecting their supplier base, as confirmed by the same company: *“Part of the search process was also to see if we could get a cheaper option, because we used to buy in supermarkets and today we found a person who sells at a really good price”*, it was also found in the analysis, that these factors did vary depending on the nature of the product, since companies that handled inputs such as packaging material, highlighted that for this type of products, there was no requirement from the customer with respect

to quality, so they prioritized price over any other factor, mentioning, for example: *"with respect to packaging my clientele cares more about price than quality, that is why I get the best option in price"* (Ice Cream Company).

Apart from the factors described above, some of the companies expressed having selection factors more oriented to the relationship and history of the supplier, for example, the company cheese-flavored cassava rolls, thanks to its history in the industry, could base its selection process on other parameters, such as the history of relationships, the reputation of the company and the potential for win-win collaboration, since the interviewee confirmed these factors extracted from the literature: *"I have been in the business for several years and for me it is essential to maintain a good relationship with suppliers", "for me it is important that they are a serious company, that they do not have a bad reputation, that I know them", "I am interested in sharing information with my suppliers, I look for the supplier to be a collaborator not just a collector"*.

There was also confirmation with literature regarding the supplier selection based on the distribution facility, the companies expressed that being in charge of the purchase logistics could represent a problem or that they required proximity to their suppliers to improve delivery times. For example, in the case of the company Ice Cream Restaurant, the interviewee said: *"if you are required to make a daily purchase and also have to deal with transportation, you would spend a lot of gasoline"*. On the other hand, in the development of this analysis, a new finding emerged: the selection of suppliers based on authorizations or certifications, such as in the case of the company Ice Cream Restaurant: *"You have to buy from suppliers that are registered, due to a matter of INVIMA (Colombian regulatory body), because the issue of dairy products is very risky"*.

4.1.3.2 Supplier Evaluation

Focusing on the evaluation of suppliers, the analysis showed a tendency among the interviewees to evaluate the supplier according to quality, which was limited in many occasions to inspections at the time of reception of the products, as Coffee Producer explained *"it is verified every time it is received, it is a very visual evaluation"*, which confirms the use of this evaluation factor suggested in the literature. The evaluation by monitoring the variations of purchase prices and Good Manufacturing Practices (GMP) audits emerges as a new finding within some companies, since during the interviews, when we asked about their evaluation methods, they said: *"I do the evaluation through audits with visits, with monitoring forms"* (Chips Company), *"we always make a comparison between invoices, someone is 100% in charge of reviewing the suppliers' invoices"* (Fast Food Restaurant).

Negotiation and change of supplier were mentioned among the possible actions to be taken in the event of repeated supplier failures. As a confirmation of the negotiation, the quote provided by Chips Company *"we seek a resolution with the supplier, we have very large and very serious suppliers that meet all our requirements. If necessary, we issue a credit note and the supplier re-delivers a product with the required quality"*. Meanwhile, one of the confirmations regarding the change of supplier was quoted by Sausages Company, who affirms that *"in case of recurrence, we look for another supplier"*.

4.1.3.3 Evaluation of Procurement Management

For the evaluation of purchasing management, two follow-up actions were defined based on the bibliography, the development of KPIs, and compliance with the budget. The case analysis did not confirm the first action, while the second one was confirmed by Chips Company who mentioned: *"Month by month, we make an analysis of how much of certain raw material was purchased and if we are going to meet or not the budget"*. It is important to highlight that this company is the only one that affirmed to have a formal purchasing budget.

Likewise, the development of this level of analysis allowed us to confirm a new finding related to savings control as a method of management evaluation, as an example the cheese-flavored cassava rolls Company stated: *"In my system, I have registered the prices at which I buy, I see more or less the rate at which it is increasing or decreasing, this helps me to look for new suppliers, with better prices and improve my management"*.

4.2 Cross-Case Analysis: Manufacturing Sector

A comparative analysis is carried out between the companies in each supply chain stage, the tables used to conduct the analysis can be found in the appendix.

Table 4.2 shows an example from the Supplier Selection Factors section of the macro topic Purchasing Performance. In the table, the factors mentioned as relevant when selecting a supplier were marked with an X. In this section a horizontal analysis was conducted, each coding component was analyzed to find how much confirmation it had between the interviewed companies, finding commonalities within the group. Confirmation is understood by the applicability of the components, mentioned in the Conceptual Framework Methodology Section, to these companies. As an example of the horizontal analysis, we can observe in row 10, that the reputation of the company was only mentioned by 1 out of 10 of the manufacturing companies as an important aspect when deciding to work with a supplier, while the most relevant factors were

quality and price with 9 out of 10 companies responding to this factor. The same analysis was carried out for all the topics analyzed.

The next step was to perform a vertical analysis, looking at each case / company individually, to compare purchasing behavior among all companies in the same SC stage, identifying cluster or groups with similar behavior. In the Table 4.3, the responses of the Manufacturing companies are shown, under the topic Purchasing Functions, from the macro topic Formalization of Purchasing Management, where we can see similar companies such as Chocolate Company and Chips Company, showing a higher level of purchasing formalization.

Topic	Subtopic	Component	Ice Cream Company	Pasta Company	Cheese Cassava Company	Potato chips Company	Veg Burger Company	Sausages Company	Coffee Processer	Snack Company	Yogurt Company	Choco Company	
Supplier Selection	Factors	Quality	X	X	X	X		X	X	X	X	X	
		Reliable recommendations											
		Attention to needs											
		Advice and experience from the manufacturer											
		Networking Facilities											X
		Single source supplier											
		Immediate product availability											X
		Financing facilities										X	
		Relationship history				X						X	
		Company reputation				X							
		Order size											
		Win Win Collaboration Potential				X							
		Price	X	X	X	X	X	X	X	X	X	X	X

Table 4.2 - Extract from the Horizontal Analysis – Supplier Selection (Manufacturing)

Topic	Component	Ice Cream Company	Pasta Company	Cheese Cassava Company	Potato chips Company	Veg Burger Company	Sausages Company	Coffee Processer	Snack Company	Yogurt Company	Choco Company
Functions of the purchasing manager	Supplier Selection	X	X	X		X	X	X		X	X
	Negotiation with suppliers								X		
	Contract management										
	Planning (Annual Budget)				X						
	Purchase Request to Supplier	X	X	X	X			X	X	X	X
	Purchasing Logistics	X				X				X	
	Purchasing Reception	X	X	x		X	X	x	x		X
	Inventory Control		X		X						
	Payment Management	X	X			X					
	Projection of purchases (forecast)				X						X
	Follow-up of shortages				x		X				X
	Supplier evaluation									X	
	Cost Record	X	X	X	X			x	X		X
Cost analysis				X				X		X	

Table 4.3 - Extract from the Horizontal Analysis – Functions of the Purchasing Manager (HORECA)

4.2.1 Formalization of purchasing management

4.2.1.1 Horizontal Analysis

Through this cross-case analysis, patterns could be identified with regard to the organization and formalization of procurement management. The first point that stands out is that the CEO is responsible for all or most of the purchasing management in 90% of the cases in the manufacturing stage (9/10). With respect to the functions of the purchasing manager, we found that in general, the companies interviewed are limited to basic purchasing functions such as purchase request, supplier selection, and purchasing reception, as 80% of those interviewed stated that they implement the aforementioned activities (8/10). It is worth noting that, although the majority (7/10) register the quotations of raw materials and inputs, this is only done to see their impact on the price of the finished product, as only two of them make an analysis of them. With respect to the other functions extracted from the literature, Purchasing Negotiation, Budget Elaboration, Purchasing Logistics, Inventory Control, Payment, Purchasing Forecast, Supplier Evaluation and Failure Monitoring, there was no major confirmation being mention only by no more than three out of ten companies.

Regarding the degree of documentation, we can identify the low formality in the interviewed companies considering that except for invoices (confirmation of 10/10) and cost sheets (confirmation of 7/10), documents are handled to a very low extent, highlighting that supplier quotation are generally not received in written form (2/10) and that even no confirmation was reported with regard to the use of formal contracts. Analyzing the use of IT tools, we found that although some of the companies expressed interest in the future implementation or use of IT systems (ERP), most of them use Excel spreadsheets as an IT tool. For communication with suppliers, most of them do not use email, but rather informal communication via WhatsApp or phone calls .(6/10)

4.2.1.2 Vertical Analysis

When analyzing the companies vertically, that is, each company full behavior versus the others', we noted that the only atypical case in which the CEO is not responsible for purchasing management is the Chips Company, which has a sourcing manager who is exclusively responsible for purchasing tasks; this is the only medium-sized company with the largest human resources, 67 employees, while the others are much smaller companies, having an average of 7 employees.

The vertical perspective allowed a reconfirmation of what we mentioned previously, as on average the companies claim to have no more than 5 functions within purchasing management and a low level of documentation. As a second finding from this analysis, we found two companies with a different behaviour, showing a more organized management of purchasing activities. The first company is Chips Company, who stated that his purchasing manager fulfilled 7 activities mentioned in our coding, handled 6 documents, and in addition to spreadsheets used an ERP. The second company that exhibits a more organized management is Chocolate Company, which claimed to have the same number of activities (7), a management of 5 documents, and a high use of spreadsheets. Chocolate Company, unlike Chips Company, is a micro company, where purchasing management is a secondary task of the CEO, with only 5 employees, and without many years in the market, however, it demonstrates a maturity in management by even carrying out cost analysis in search of optimization. This contrast between the two companies shows that, regardless of the size of the company, it is possible to achieve greater formalization within management.

4.2.2 Portfolio management

4.2.2.1 Horizontal Analysis

Starting from a horizontal perspective, the cross-case analysis confirmed different patterns within the manufacturing sample interviewed, the first of them is that there is a clear identification of the inputs and raw materials purchased (10/10), but this identification is based more on the operational needs of the company and there is no formal establishment of a purchasing budget where the category of products, estimated expenditure and other relevant information is detailed. On the other hand, it was also demonstrated that purchases have a great impact on costs since most of the interviewees who were able to identify the percentage of the annual budget allocated to purchases claimed that this represents more than 50%. Likewise, all the interviewees affirm that they have identified the purchases that generate the greatest expense for the company, indicating as the main cause the high volume of purchases, followed by the typical high cost of the product.

Regarding the issue of spend classification, most of the interviewees agree that the complexity of the market is largely due to the low availability of products, an additional precision with respect to this item was the confirmation of a pattern that indicated that for most companies (8/10) the main reason for this low availability was due to the seasonality of the products, this finding can be seen as an extension to the

literature, as it provides greater specificity in terms of product availability. In addition to this, it is confirmed that the criticality of the market is also due to the financial weaknesses experienced by companies in this sector, being these related to the incompatibilities of cash flow or low liquidity, which as was highlighted in the cases, can mean a limitation in terms of possible supply strategies (8/10). Another of the new findings, which represents a greater criticality of the market and which in turn is a common factor within the companies (6/10), is the mandatory purchase volume in certain order sizes. On the other hand, there was no generalized confirmation to the literature regarding other determining factors for the definition of market complexity, more specifically, factors such as concentration of suppliers, substitution possibilities, shelf life, logistic costs, and production capacity of suppliers, are not perceived as critical in the evaluated item.

Bargaining power was analyzed on two sides, the first was the evaluation of the perception of this criterion as a critical aspect in the definition of market complexity, which showed that although the majority (8/10) expressed being supplied by larger suppliers than themselves, very few expressed being affected by this criterion (Bargaining power) (4/10). The second approach of this analysis was based on expanding the investigation of dependency both for the case studies towards their suppliers and in the opposite direction, finding a very low confirmation for both dependency pathways. This last statement could be inferred due to the fact that in the case of dependence on the supplier, very few cases claimed to have the possibility to apply sanctions (1/10), prompt attention to their claims (4/10), access to discounts (0/10), financing (3/10), and flexibility in purchasing volumes (0/10). Likewise, with regard to the Usage Rate, very few said they had: few critical suppliers (3/10), no or little facility to change suppliers (4/10), formal contracts with suppliers (0/10), and supplier development programs (0/10).

This second level of analysis also indicated a clear pattern in terms of two factors that determine a higher criticality or strategic importance of the product or service purchased, as 6 out of 10 respondents considered the impact on the quality of the finished product to be very important when making purchases and all respondents considered the impact on cost to be a critical factor. The other factors reported in the literature were not confirmed by the majority of respondents.

In terms of sourcing strategies, the cross-case analysis did not show a clear pattern among the companies, so it was not possible to obtain one-size-fits-all strategies for the analysed category. However, this may be an indication that strategies may depend on a number of factors, such as the type of input or raw material purchased, company

size, and management tools of the company, so for this specific issue it is more useful to use the vertical analysis developed in the following section.

4.2.2.2 Vertical Analysis

From a vertical approach, different findings were identified that allowed the identification of clusters in terms of purchasing strategies. As a first finding, there was a group of companies that made purchases more frequently, lowering inventory levels and orienting their business towards a Lean strategy. These companies were Chocolate Company, Chips Company, and Cheese-flavored Cassava Rolls Company, which expressed having better management planning, which could be achieved by different means such as the level of formalization within the management, the integration of expert roles and expertise (know-how) thanks to years of experience in the field.

Another group identified was that of companies that implemented overstocking or overproduction as a strategy (Coffee Processor, Snack Company, and Yogurt Company), which had as a common element the nature of their products, whether purchased or finished, being products of high durability. Likewise, the implementation of long-term relationships was also evaluated vertically, finding a characteristic in common between the three companies that implement this strategy, this was the criticality of the variation in the quality of the finished product due to the change in the recipe, such as meat in the case of Sausages Company and milk in the case of Yogurt Company and Ice Cream Company.

We also identified companies that had tools that enabled them to implement specific strategies, as in the case of Chips Company, which has developed vertical integration thanks to its economic resources; and, the cheese-flavored cassava rolls Company, which is implementing a relationship strategy thanks to its experience. Finally, the companies that reported not having any purchasing strategy (Pasta Company and Veg Burger Company) are the smallest in terms of annual revenue.

The vertical assessment identified a relationship between supplier dependence and the size of the buyer, as all companies that reported sourcing from suppliers of the same or smaller size also confirmed some of the codes that indicate supplier dependence, whether in terms of complaint resolution, financing possibilities or the possibility of applying sanctions.

4.2.3 Procurement Performance

4.2.3.1 Horizontal Analysis

First of all, in the analysis of the evaluation of internal performance, we can observe that half of the companies in the sample do not have any type of evaluation for their purchasing management. Whereas, within the companies that do make an evaluation of their management, they do so mostly according to savings monitoring, only one company evaluates compliance with the purchasing budget, and none of them manage purchasing management indicators or KPIs.

Regarding the evaluation and selection of suppliers, there are several important patterns to be mentioned. On the factors taken into account when selecting a supplier, we found that the majority of companies (9/10) indicated that the most critical factor was quality, followed by price (with a confirmation of 6/10). While many expressed lack of supplier credit and order size restrictions as a problem in the Spend Classification section, only one mentioned ease of credit as a critical factor when selecting a supplier and none mentioned order size as a critical factor during the selection process.

The formality of supplier evaluation was studied, concluding that it is carried out rather informally, as only four of the interviewees kept records of performance monitoring or evaluation. The patterns related to evaluation methods were analyzed, from which it was identified that the method most frequently mentioned by the companies consulted was the verification of product quality during delivery (confirmation of 7/10) and that supplier evaluation according to product performance after delivery, time and quantity delivered, flexibility in payment, attention to needs and variation in prices offered by suppliers, is very rare. On the other hand, the most common action in the face of a negative evaluation or repeated failures on the part of a supplier is the search for supply alternatives (confirmation of 70% of the sample), either for a total replacement or to reduce the purchase volumes of the non-conforming supplier. Finally, it was shown that the companies analyzed are not in a position to take negotiation action in the event of failure, as only 2 of the 10 interviewees confirmed this measure.

4.2.3.2 Vertical Analysis

Looking at the management evaluation methods, we find that the only company that evaluates its management does it through compliance with the purchasing budget is

Chips Company, this is also the only one that has an exclusive purchasing staff and an annual purchasing budget.

With respect to the selection and evaluation of suppliers, firstly, we can see that the number of factors considered when selecting suppliers is on average 2 to 3, the company that reports the most factors, 5 in total, is cheese-flavored cassava rolls Company, which is small and whose CEO has a know-how from several years of working in the food industry. When analyzing the actions taken by companies in the face of unfavourable evaluations or repetitive failures from a vertical perspective, two isolated cases with bargaining power were found, which could be explained as follows: for the first company, Pasta Company, the bargaining power can be attributed to the size and niche of the supplier, as it is supplied with vegetable powder, by a supplier even smaller than itself. For Chips Company a medium-sized company, the bargaining power may be due to its high purchasing volumes.

4.3 Cross-Case Analysis: HORECA Sector

The cross- case analysis was carried out following the same approach as described in the manufacturing section, the tables used to carry out the analysis can be found in the appendix.

4.3.1 Formalization of purchasing management

4.3.1.1 *Horizontal Analysis*

For the HORECA sector, as for manufacturing, purchasing is mostly carried out by the CEO as the only person responsible, with four out of six companies confirmation (4/6), and a minority of companies reported that they were supported by another person (2/6) but highlighting that the CEO was in charge of negotiating with suppliers in 100% of cases. However, within this sector, there was no confirmation that purchasing functions were assigned to a role solely responsible for sourcing. Another of the similar patterns between sectors corresponds to the maturity of purchasing management, in the sense that, for both supply stages, the functions of purchasing management are reduced and limited to basic purchasing tasks and the level of documentation handled is scarce, with the invoice remaining the only document implemented in 6 out of 6 the cases. On the other hand, one of the differences found is that in the case of HORECA, cost registration is not carried out in most cases (2/6).

Regarding the technological tools used, the use of an ERP for purchasing management is low (2/6), and unlike manufacturing companies, the use of electronic spreadsheets to support purchasing management is scarce (two cases). In this topic we also found one case that used a supplier's application as a purchasing management tool, in this application is possible to make orders and payments while keeping a record of the operations, while also getting access to discounts and other benefits. Coincidentally with manufacturing companies, communication with suppliers is done informally, through WhatsApp or phone calls (4/6).

4.3.1.2 Vertical Analysis

The two companies in which the CEO received support for procurement management were those with one or more branches. The first case is Ice Cream Restaurant, a small company with a staff of 25 people, which has franchises in the country and branches managed by them, where the basic tasks of purchasing management are carried out by an administrative staff. The second case is Fast Food Restaurant, a micro company where the procurement of one branch is carried out by the CEO and those of the second branch by a trusted staff member.

Regarding the functions, we notice that there are two companies, Ice Cream Restaurant, and Barbecue Catering, that mention 8 tasks as purchasing managers, which is more than the average with around 5 functions mentioned. Barbecue Catering is a micro company with only a few years in the market, and with only 3 permanent staff, but it shows good management, even carrying out cost analyses to optimize purchasing management. Regarding the use of IT tools, both companies show higher development, with Barbecue Catering being the only company that reported using Excel spreadsheets in its purchasing management, and Ice Cream Restaurant being one of the two that had an ERP implemented.

4.3.2 Portfolio management

4.3.2.1 Horizontal Analysis

The cross-case analysis of the HORECA sector was carried out by identifying the common patterns within the sample and comparing them with the manufacturing sector, finding as a first similarity that there is also an informal identification of purchases. However, in contrast to the manufacturing sector, the percentage allocated to purchases in most cases is less than 50%, which is indicative of a lower incidence of this activity in the total cost of the companies. Similarly, a pattern was evident in the

identification of inputs or raw materials purchased, but for this sector the most common cause of high prices was attributed to inflation and the typical cost of the product, leaving aside the volume of purchase.

With regard to the aspects that increase the complexity of the market, similar patterns were obtained for almost all companies in this SC stage, with the exception of financial weaknesses. In the development of these interviews there was no report that referred to difficulties in relation to low liquidity or cash flow incompatibilities. Seasonality and the requirement of certain order sizes are still considered relevant for the HORECA sector, with 4 out of the 6 interviewees confirming both aspects. Bargaining power as a critical aspect in the definition of market complexity was of relevance for most of the cases in this sector (4/6), additionally, under the item of dependence on suppliers, the solution to complaints was confirmed by a greater number of cases (4/6 of the HORECA sample) and a new finding related to good communication and attention to their needs was confirmed, these confirmations are indications of a greater openness on the part of suppliers in this sector, despite the fact that, as for manufacturing, the majority expressed that they were supplied by large suppliers (5/6).

The patterns with respect to the strategic importance of purchasing also had similar behaviour to the Manufacturing sector, with the impact on cost and the impact on the quality of the finished product being of greater importance for the entire sample. On the other hand, one of the biggest differences between the sectors is related to sourcing strategies, as for this sector there are common elements between the cases. In the cross-case analysis, the possibility of implementing relationship strategies and the management of reduced inventories or day-to-day purchasing were highlighted, with a confirmation of 4 out of 6 for both strategies, the other strategies were not a common element within the sample.

4.3.2.2 Vertical Analysis

The vertical analysis within this macro theme showed that the companies that implemented relationship strategies were the same ones that identified complaint resolution and attention to their needs as indications of motivation to work together on the part of their suppliers. The vertical analysis allowed the identification of a possible relationship between the implementation of an overstock strategy and the company's refrigeration capacity, as the two companies that confirm this strategy store raw materials at a low temperature to face the problems related to seasonality. Moreover, like in the manufacturing stage, the company with the largest economic

resources in the HORECA sector was the only one that explored the possibility of vertical integration. An atypical but relevant case found was the implementation of a horizontal collaboration strategy by the company Barbecue Catering, which prioritized communication not only with suppliers but also with its competitors.

4.3.3 Purchasing performance

4.3.3.1 Horizontal Analysis

This cross-case analysis was carried out firstly for the evaluation of internal management, where we found that it is carried out to a lesser extent compared to manufacturing companies. The only company that claimed to carry out this evaluation, Fast Food Restaurant, does so through the monitoring of savings derived from efficient purchasing management.

With regard to supplier selection factors, it can be seen that, as for manufacturing companies, quality plays a very important role when choosing suppliers, as well as price, being mentioned by 100% of the companies in this SC stage. Whereas, an important factor mentioned, in contrast to the manufacturing companies, is the ease of distribution offered by the supplier (4/6). Similar to the manufacturing companies, factors such as trust through recommendations, attention to their needs, advice/experience of the manufacturer, networking facilities, exclusivity and immediate availability of products are not mentioned recurrently, each of these factors being mentioned by only one or two companies.

Analyzing the topic of supplier evaluation, looking initially at the formality of evaluation, we see that no company in this SC stage claim to use supplier evaluation records. As with the manufacturing companies, the main factor considered for the evaluation is the quality of product delivery (5/6), and to a lesser extent the quantity of delivery and price volatility (3/6). Finally, we see that the actions to be taken in case of repetitive failures include negotiation (4/6 cases) even when the suppliers are larger, unlike the manufacturing companies; but they coincide with them in one of the actions considered is the search for alternative supply (5/6), either by changing supplier or reducing purchase volumes.

4.3.3.2 Vertical Analysis

Taking into consideration which is the company that carries out the evaluation of its management, Fast Food Restaurant, we can see the case where an ERP allows to obtain

sufficient information about purchasing costs. With regard to the selection of suppliers, we can see that HORECA companies on average take slightly more factors into account than manufacturing companies, with an average of 4 aspects for HORECA against an average of 2-3 factors in manufacturing.

Lastly, we highlight the importance that one company, Barbecue Catering, gives to supplier performance, including more factors for both selection and evaluation than the HORECA average. Analyzing the evaluation factors against the strategies implemented by the companies, we find that of the three companies that mentioned process volatility as an important evaluation factor, Sandwich catering, Barbecue Catering, and Fast-Food Restaurant, employ day by day purchasing strategies, buying certain products in small volumes and high frequency.

5. Discussion

In the development of this chapter, we will expand on the findings presented above, which will allow us to answer the research questions elaborated as a starting point for this study. In addition, a Kraljic proposal for SMEs focused on the food sector in developing countries is presented by developing the different levels of criticality for both axes of the matrix.

5.1 Answer to Research Questions

5.1.1 RQ1: How do food SMEs companies in developing countries manage their purchasing portfolio?

5.1.1.1 How do SMEs determine the purchasing portfolio?

Literature suggests that purchasing management should be considered a strategic activity, especially in small companies, since limited resources generate a greater vulnerability to ineffective purchasing (Ellegaard, 2006). Through the case studies' analysis, the level of strategic approach for purchasing was evaluated according to the percentage of the budget allocated to purchasing, where, as shown in the results, it was found that for the manufacturing sector, it is more than 50%, while for HORECA it is less than 50% for the most part. This leads us to think that, for food manufacturing, purchasing has a greater impact on costs, which is why it should have a more strategic perspective in order to reduce vulnerability and increase the profitability of these companies, since, as stated by research, the profitability of small companies is strongly correlated with the management of purchases. (Pressey, 2009)

Migration towards a more strategic approach has not yet been contemplated by the companies analysed, as management is based on the operational needs of the

companies and there is not even a formal establishment of a purchasing budget, so it is advisable to start with the development of a change plan for the implementation of strategic purchasing activities to improve management.

As presented in the findings, the greatest contribution to purchasing expenditure in the manufacturing sector is given by raw materials and inputs that require a higher volume of purchase; while in HORECA, the main cause is the high price, mostly due to inflation. The tendency of companies in the HORECA sector to purchase supplies at high frequencies, according to short-term operational requirements, could be the reason why they state that costs are more affected by problems unrelated to purchase volumes, given that there is no accumulation of purchase volumes by category, which hinders the identification of the impact of volume on spending, and the lack of registration and control of costs increases this lack of knowledge of the impact. (Adekunle et al., 2014)

Inflation is a recurring issue for food and beverage producers in both sectors in both countries analysed, as they have been facing rising prices of agricultural raw materials for some time now. (Becerra, 2023)

5.1.1.2 How is the level of importance of product categories determined?

Building upon the Kraljic's matrix traditional definition that is, considering two axes i.e., supply market complexity and strategic importance, we analyze how SMEs operating in the food sector in developing countries set the levels of importance of each product that they purchase. (Kraljic, 1983)

5.1.1.2.1 Market complexity

Analysing the cases, it was possible to interpret that some of the factors considered by Kraljic to understand the situation of the companies were not in line with the context of small food companies in Latin America. In the region, there are other scenarios that increase the complexity of the supply market, Kraljic suggests the evaluation of the monopoly condition, the degree of technology and/or the substitution of material (Kraljic, 1983). However, these factors are not characteristic of this food market, as the low specialisation of raw materials, (the supply of functional products such as coffee, vegetables, milk, among others (Fisher, 1997) and the high availability of suppliers reduce the risk of supply, the scarcity of supply in the case of the companies analysed is more associated with the seasonal problems of raw materials, as the problems of

food insecurity in Latin American countries are strongly related to seasonal phenomena, which in turn increase the price index. (FAO, 2020)

The financial weaknesses of manufacturing companies are mostly generated by cash flow incompatibilities, slow cycle time in the accounts payable process or conflict between finance and supply policy (Johnson & Flynn, 2015). The aforementioned represents a threat to supply, because of the impediment to adopt the strategy of vertical integration (Johnson Flynn, 2015), and also the impediment to buy in large quantities or anticipate purchases that could avoid bottlenecks and interruptions. The lack of liquidity in the HORECA sector was not expressed as an alarming factor, because in this type of companies the cash return is fast, the frequency of their purchases is high and the purchase volumes are low, which generates a shorter lead time between the payment to suppliers and the payment from customers. On the other hand, this financial situation in the HORECA sector can also be linked to relationship strategies, as authors such as Wilson and Roy expressed that buyer-seller relationships that involve commitment and trust help the buyer financially (Wilson, 2009).

Another factor that increases the level of complexity of the market that emerged from our study is the order size restrictions. Interviewees' reports allowed us to associate this factor with two possible causes: 1) the low flexibility of suppliers to sell at low volumes due to the low dependence on the purchasing company 2) the scale production of packaging material or plastic utensils prevents low volume orders due to cost issues. In the literature review, it was found that one of the market drivers was the lifecycle of the products (Pressey, 2009), which was brought down to the food context as the shelf life, as the raw materials in this area are characterised by being perishable and this could imply a greater complexity of the market. However, during the cases' analysis, it was observed that this parameter was not as representative, because, in the context of small companies, the purchase and inventory volumes are low due to the low production capacity, which in turn facilitates the use of products before the expiry date. However, the shelf life becomes a relevant parameter to consider as a restriction if an overstocking strategy is pursued.

The analysis of power dynamics in the context of food SMEs shows that there is no strong dependence on suppliers, since SMEs are not on the same level as large customers to demand attention from their suppliers (Lee, 2009). However, a tendency was identified in the interviewed companies, most of them keep the Use Range low and do not use formal contracts, in order to avoid dependence on their suppliers. This strategy is possible thanks to the particularities of the market e.g., acquisition of functional products, characterised by a highly competitive market, which allows them

as they mentioned to have option A, B and C in order to avoid any risk of supply. However, despite the efforts to avoid dependency on suppliers, power asymmetries became visible in the analysis of the results, as the problems of lack of credit options and low flexibility in purchasing volumes reflect the power position off the suppliers. Even as discussed in the findings, the HORECA sector has related bargaining power to the low resolution of their demands and the low relevance given to their business by their suppliers.

5.1.1.2.2 Strategic Importance

The results of this research work evidenced only two factors to be considered in the strategic importance or business impact axis. The first, mentioned in all the cases for both manufacturing and HORECA is the Impact on Cost. Companies indicated, as mentioned in the previous section, on which raw materials or inputs they spend most of their budget, but most of them have not yet identified the percentage that they spend on each one. In Chapter Findings Section Cross Case Analysis, when discussing the formalization in Purchasing Management, was described that most of the companies do have a cost register, but the data is not used for further analysis. Having some data already available as in cost register companies could identify the % of total purchase costs that each item or category of purchase represents and this value could be used when discerning the impact on the business, however, some companies also noted there is lack of capabilities or time to dedicate to this activity and analysis.

The second aspect is the Impact on Quality, the added value in the final product provided by good ingredients is mentioned at 100% in HORECA and 60% in manufacturing companies studied. This factor is more complex to measure in numerical terms than the Impact on Cost and has more components in its evaluation. Indeed, the definition of quality is broad and can integrate the analysis of the impact on shelf life of the final product, the impact on the taste of the product, the impact on the visual aspect, which will have more or less weight depending on the business sector and the product considered. Regarding the fact that price is more mention than quality in Manufacturing Companies, it can be explain by the high % of annual budget spend in purchasing, therefore an increase in costs significantly affects the profit margin, putting the quality as not as relevant as the price. In HORECA both factors are equally mentioned, could be that the value of quality is more easily appreciated in HORECA by the final customer.

5.1.1.3 What are the purchasing strategies for items considered critical?

Among the purchasing strategies reported in the literature, the implementation of lean procurement is found as a tool that drives logistical improvements (Wilson 2009), the latter was identified through the analysis of the findings, where it was found that manufacturing companies carry out JIT (Just in Time) strategies, a technique on which the lean methodology is based (Wilson 2009), using mainly planning tools that facilitate the monitoring and control of purchases (such as: requisition forms, inventory control forms, purchasing module in ERP tool or forecasts and optimisation of purchases through purchase registration forms in excel), additionally in the HORECA sector, the application of this strategy was also evidenced but with a higher purchase frequency, as their business is characterised by day-to-day business environment, As a tool for the implementation of the JIT strategy, companies in the HORECA sector make use of relationship and communication strategies, which allow them to request purchase items once they are needed, this coincides with Wilson 2009, who mentions that the fast and frequent exchange of information is related to the success of lean procurement in SMEs. On the other hand, as expressed by the interviewees, this strategy is not mostly oriented towards cost reduction, as suggested by Wilson 2009, it is developed by most companies to prevent food spoilage. However, it should not be ignored that this strategy also has an impact on cost, as keeping inventory low and reducing volumes of raw material losses undoubtedly translates into lower costs. On the other hand, implementing this type of strategy may be limited by the logistical costs related to transporting small purchase orders (Wilson 2009), which may be the reason why most of the interviewees from the HORECA sector include distribution facilities in the selection criteria.

Another strategy suggested in the literature is the security inventory, a strategy that ensures sufficient stock to prevent any potential supply risk (Kraljic, 1983). This strategy was mentioned in the interviews under the name of overstock strategy, which refers to the anticipation of purchases to face seasonal shortages of purchase items, although it is a useful strategy to deal with seasonality, this strategy is conditional on supplying non-perishable raw materials or having a sufficient cold chain for the preservation of purchases. Given this limitation, a new finding emerges in the interview report that can be seen as an extension to the literature, the implementation of an overproduction strategy, developed by companies that had seasonal problems, were supplied with perishable raw materials and their finished product could be easily stored, from which they implemented firstly an overstock strategy and secondly used the excess inventory immediately for the overproduction of their final product, this

facilitated the reduction of raw material inventory, but the increase of final product inventory in order to increase the security of supply and satisfy demand.

As reported in the findings (chapter 4), the companies that reported having the most financial resources were the same companies that explored the implementation of a vertical integration strategy. However, the analysis identified that the implementation of this strategy represented a success case for one of the companies (it brought more flexibility in management and allowed to cope with raw material shortages due to seasonality), while for the second one it represented a setback (it increased financial weaknesses and forced to put the project on hold). This difference could be due to the size of the company, because despite having capital, the difference between the income of both companies was representative, as their classification was different, one of the companies was considered as a medium-sized company close to becoming a large company and the second as a small company. From this it can be inferred that economic maturity is necessary to venture into this strategy, because as it has already been exposed in the literature this strategy brings value especially to large companies, which can assume the cost of applying a make strategy instead of buy (Johnson Flynn, 2015).

The analysis of supplier base optimisation strategies showed that the implementation of single sourcing is commonly used by companies when the change of raw materials implies a significant change in the quality of the final product. However, according to the literature, this type of strategy could increase the risk of supply interruption and limit access to competitive prices (Wilson 2009), which is why the interviewees said that having parallel sourcing allowed them to have a backup alternative in the event of any supplier failure. Among the optimisation strategies, the least mentioned was multi-sourcing, the latter may be due to the fact that SMEs are supplied in small lots, and sourcing from multiple suppliers would imply increases in supply costs (Wilson 2009).

Among the strategies that the SMEs mentioned they implemented are the ones that fall into the category of Relationship Strategies. Working on having good and open communication with the suppliers is proven helpful to face power imbalances, reducing risk and uncertainty (Ellegaard 2006), this is confirmed for the companies that did implement the strategy, finding also in one case that the suppliers were more open by sharing market information in relation to the seasonality of the market. In the case of HORECA, where a greater motivation of the supplier to work together was observed, the majority also used supplier relationship strategies, but without being considered as a partnership. What is difficult to apply still for these companies is Single

Sourcing and Long-term Relationships, as these companies are relatively short time in the market, their interest to reduce costs in order to be competitive keeps them in a constant search for cheaper or better quality/attention suppliers, and the fear of “marrying a supplier”, the few cases that maintain long-term relationships do so because of a stable quality strategy. These findings are in accordance to what is found in the literature that for small companies, the companies that tended have stable and close supplier relationships, ensured consistency of supplies and the frequency of quality and delivery problems was very low. (Ellegaard, 2006). To end the discussion on relationship strategies it was found that none of these companies implemented supplier development as a strategy, these can be explained by the fact that the majority of their suppliers are of major or same size, and because of the lack of resources both monetary and managerial to invest in these programs.

Horizontal Collaboration is a strategy found in the literature that could help these firms to overcome their financial constraints, economies of scale, and limited resources, improving purchasing and firm performance (Zaridis et al., 2020), but was not implemented by these companies except for one in HORECA. The company mentioned that they collaborate among a group of competitors sharing regarding suppliers’ prices and quality, is important to mention that none of the companies interviewed explore horizontal collaboration in joint purchasing of raw materials, missing the opportunity to access volume discounts or better purchasing conditions.

5.1.2 RQ2: How is the organisational structure of procurement management in small enterprises?

In large companies, the degree of centralisation of purchasing functions is an important aspect of the supply structure and the allocation of supply functions to skilled personnel is considered a must for more efficient and effective performance in purchasing management (Johnson Flynn, 2015). However, the scenario for small companies is not the same and such initiatives become unfeasible. For these companies, the allocation of purchasing functions is attributed to the CEO as a secondary role or is shared with trusted individuals with no experience in supply. What would be expected according to Johnson and Flynn is that the hiring of supply-focused staff would increase as the company grows (Johnson Flynn, 2015), behaviour that was evidenced in the particular case of the medium-sized company, which was considered to be the outlier in terms of the assignment of purchasing to a specialized role ('procurement officer').

In this study it is confirmed that the SME owner is mostly responsible for various administrative functions, including those related to purchasing, which on the one hand gives him an advantage in terms of understanding the cross-functional connections of the company (Ellegaard, 2006). However, this also prevents them from carrying out all the characteristic functions of purchasing management, allocating their limited time mainly to basic functions such as purchase requisition, supplier selection and purchase receipt. This lack of time and resources prevents the development of functions that add value to their management, such as short/ medium, and long-term forecasting of requirements, inventory control, cost-effective management of purchases, among others (Johnson Flynn, 2015).

In particular, for Latin American SMEs, the strategic execution of a cost analysis could make the difference, as it was found that many of the companies already record their costs in Excel spreadsheets but limit their analysis to an accounting.

On the other hand, the flow of information, both internally and with external suppliers, can be benefited by a communication method that documents all stages of management, from the beginning of a need to the payment element, by means of paperwork or computer tools that allow the automation of document generation (Monczka, 2009). In the context of small Latin American companies studied, this registration and documentary control is not a characteristic element, because as was exposed in the findings the degree of documentation is low and the use of computer tools is almost null.

The formalization of purchasing associations can occur in two ways according to the literature, through legal contracts and through simple agreements, where the legal contract is the one recommended by various authors, as the setting of conditions, warranties and guarantees, according to the literature, allows price control, encourages continuous improvement and reduces the risk of supply (Lysons & Farrington, 2020). However, in the scenario of the small companies studied in this work, the implementation of formal contracts is non-existent. This practice does not necessarily imply a risk of supply, but rather adds value because, as interviewees expressed, avoiding the lock-in with a supplier gives them the flexibility to move from one supplier to another without ties, in case of any product shortage or market uncertainty that leads to price increases. Since these companies operate in an environment where there are no major market concentrations due to the low specialty required for their purchased items, this gives them the possibility to partner with the best option. Continuous improvement and compliance can be encouraged by other mechanisms such as the development of relational strategies that increase the trust

placed in each other through friendship or historical relationships. Additionally, the development of long-term relationships is also possible, with the possibility of demanding the agreed conditions without the need to implement a legal contract, since in Latin American countries, such as Colombia, consensual or verbal contracts are fully valid under the law (CSJ, Cas. Civil, 1989).

5.1.3 RQ3: How procurement performance management in SMEs is evaluated?

Performance evaluation of internal purchasing management is not a recurrent activity in SMEs in food sector in South America, causing a lack of evaluation of the efficacy of the purchasing management strategies already implemented by these companies. The few companies that do carry out internal evaluation of their purchasing performance, evaluate it by tracking purchasing cost savings, using tools such as cost record which. Key Process Indicators (KPIs) remain difficult to implement as they involve procurement management record keeping (cost sheets, supplier evaluation records, warehouse sheets), require the supply management professional know how and the dedicated time to the continuous monitoring of the results (Baneliené, 2021). This low monitoring of management can be correlated with the degree of development of purchasing management, because as reported by the author Tontini G, performance evaluation requires a degree of maturity in the management of resources within an organisation, as it is necessary to control inventories, good planning and monitoring of suppliers, in order to identify compliance of the minimum standards required (Tontini et al. 2016). In other words, for food SMEs to monitor performance, they would need to start with higher formalisation of their purchasing management, which will lead to significant improvements in performance.

5.1.4 RQ4: How is supplier selection and evaluation performed in food SMEs?

To answer this question, we break it down into two parts, firstly supplier selection and then supplier evaluation.

Firstly, the supplier selection is considered a key function of purchasing management as it is mentioned in most of the cases as an activity carried out by the purchasing manager for both manufacturing companies and the HORECA sector. Data analysis

evidenced that quality and price were the most frequently mentioned aspects to consider when selecting suppliers. In line with those of greatest strategic importance as analysed in the discussion for Spend Classification. These factors are confirmed in most cases, with quality being the most frequently mentioned factor in line with Ellegard's finding (Ellegard, 2006) for small firms in various industries. However, we found that factors such as order size and access to credit or loans were mentioned by only one firm, even though they were mentioned as critical supply market complexity issues. We observe even fewer factors than those reported by Ellegaard (Ellegard, 2006) in his study of orientations for small firms, for instance immediate availability of products, distribution facility is a factor mentioned as important only for the HORECA sector whose purchasing frequencies are higher and therefore seek to reduce the associated logistical costs.

Responsiveness was not a factor mentioned by the companies in this study because the products purchased in general are not highly specialized and suppliers do not have supply problems except when variations due to seasonal characteristics occur. Secondly, supplier evaluation is not considered a relevant function by the companies in this study, as it is not mentioned in the list of purchasing manager's tasks by most of the companies. However, there are some factors that they consider when discerning whether or not a supplier performs well or poorly and whether or not they would work with the supplier again. Such as in supplier selection, the most important factor in supplier evaluation is quality, specifically at delivery since is consider part of the materials reception process, which is a basic purchasing function as mentioned in the Findings Section. In HORECA's case, price volatility is also a relevant factor, and given the frequency of purchases makes it necessary to keep a tighter control of prices than in manufacturing companies.

Nonetheless, as supplier evaluation is not considered a key activity, there are no records of supplier evaluation or follow-up, so that evaluation is in most cases entirely empirical, by memory and in an informal manner and opportunities for improvement, that can avoid having to wait for a significant failure before deciding to change the supplier, may be missed.

5.2 Revisiting the Kraljic's matrix for SMEs in the food sector in developing countries

This chapter section is devoted to the proposal construction of a revisited Kraljic matrix based on the findings in this study. The key issues related to supply market complexity and the impact on value or strategic importance of the purchasing items,

are identified thanks to the case analysis presented in the previous chapters and are here described per SC stage, manufacturing and HORECA. Following, the strategies per quadrant are also based on the findings of the study as well as suggestions from literature.

5.2.1 Supply Market Complexity – Manufacturing

For the construction of the Supply Complexity axis, findings regarding the Seasonality and Financial Weakness factors are taken into account as these were mentioned in 80% of the cases, followed by the Order Size Restriction confirmed in 60% of the cases, the Bargaining Power in 40% of the cases and the shelf life was only mentioned in 20% of the cases. These last two were considered due to the relevance in literature as discussed previously.

With this information, it was possible to assemble a pair wise comparison matrix to define the assignment of weights to each factor or criterion in the definition of the complexity of the supply. To assess the importance of one criterion with respect to the other, Saaty's 9-point scale (Saaty, 2003) was used, in which 1 represents equal importance, 3 moderate, 5 strong importance, 7 very strong importance and 9 extremely important. Seasonality and Financial Weakness were mentioned an equal number of times; thus, it is rated 1 with respect to each other, 4 with respect to order size, 9 with respect to shelf life and 5 with respect to Bargaining Power. Order size being mentioned more often than shelf life and bargaining power was rated 5 and 4 respectively, finally, shelf life being mentioned less often than bargaining power was rated 1/3. Therefore, the supply market complexity could be determined as shown in the Table 5.1.

Comparison matrix					
vs	Financial Weakness	Seasonality	Order Size	Shelf Life	Bargaining power
Financial Weakness	1.00	1.00	4.00	9.00	5.00

Seasonality	1.00	1.00	4.00	9.00	5.00
Order Size	0.25	0.25	1.00	5.00	4.00
Shelf Life	0.11	0.11	0.20	1.00	0.33
Bargaining power	0.20	0.20	0.25	3.00	1.00
Totals	2.56	2.56	9.45	27.00	15.33

Table 5.1 - Supply Complexity Pairwise Comparison Matrix (Manufacturing).

The consistency of criteria is evaluated through the consistency ratio (CR), which is the ratio of consistency index (CI) to random index (RI) for the same order matrices. In order to obtain the CI it is needed to calculate the Consistency Measure (C.Measure) first, by multiplying the pair wise comparison matrix by the weight vector (average vector). Then λ is calculated by the average of the C. Measure vector, and with the value of λ the CI is calculated by the following formula, being n the number of criteria considered.

$$CI = \frac{\lambda - n}{n - 1} \quad (5.1)$$

The RI is defined by the quantity of criteria, since n=5 the value is 1.120. The consistency ratio was checked and found to be correct, with a CR of less than 0.1 (Saaty, 2003). The results are shown in Table 5.2.

Normalized matrix						Average Vector	C. Measure Vector
vs	Financial Weakness	Seasonality	Order Size	Shelf Life	Bargaining power		
Financial Weakness	0.39	0.39	0.42	0.33	0.33	0.373	5.372
Seasonality	0.39	0.39	0.42	0.33	0.33	0.373	5.372
Order Size	0.10	0.10	0.11	0.19	0.26	0.149	5.285
Shelf Life	0.04	0.04	0.02	0.04	0.02	0.033	5.098
Bargaining power	0.08	0.08	0.03	0.11	0.07	0.072	4.990
Totals	1.00	1.00	1.00	1.00	1.00	CI	0.056
						RI	1.120
						CR	0.05

Table 5.2 - Normalized Supply Complexity Matrix, Average/Weigh Vector y CR Calculations (Manufacturing)

Once the weights have been defined, we develop the rating scale for each criterion (from 0 to 3), which must be selected by the company according to the purchased item. In the Table 5.3 the rating scale for the criteria Financial Weakness is presented, the affirmations written describe the capability of the company to meet financial obligations with the suppliers of a specific purchasing item.

Financial Weakness	
0	I have the financial capacity to meet my obligations to suppliers.
1	I do not have resources of my own, but I have access to supplier credit.
2	I do not have resources or access to supplier credit, but I have access to bank credit.
3	I am unable to meet obligations to suppliers, I am short of funds.

Table 5.3 - Financial Weakness Scale Evaluation.

In the Table 5.4 the rating scale for the criteria Seasonality is presented, the affirmations written describe the risk of the seasonality of a specific purchasing item.

Seasonality	
0	There is no seasonality problem
1	Seasonality exists, and it is not high or occurs in a very short period of time that does not affect me much.
2	Seasonality is high
3	Seasonality is very high and also my raw materials are very perishable.

Table 5.4 - Seasonality Scale Evaluation

In the Table 5.5. the rating scale for the criteria Order Size is presented, the affirmations written describe the order size criticality of a specific purchasing item.

Order size	
0	No order size is required from the supplier.
1	There is a minimum order size, but it is in line with my production capacity, and I get it back in a short period of time.
2	The order size is large, I have a medium-term return.
3	The order size is too large for me, I have a long-term return.

Table 5.5 - Order Size Scale Evaluation

In the Table 5.6 the rating scale for the criteria Shelf Life is presented, the affirmations written describe the shelf life management criticality of a specific purchasing item.

Shelf life	
0	I have no shelf life problems with this raw material or inputs.
1	I have to preserve in cold chain, currently I have the capacity to do so.
2	I do not have the capacity to preserve this raw material/input.
3	It is impossible for me to preserve this raw material/ input, therefore I have to buy it just in time (fresh ingredients).

Table 5.6 - Shelf Life Scale Evaluation

In the Table 5.7 the rating scale for the criteria Bargaining Power is presented, the affirmations written describe the power asymmetries with the suppliers of a specific purchasing item.

Bargaining Power	
0	There is no dependence on the supplier (easily substitutable).
1	The supplier depends as much or less on us as we depend on it (equal power position).
2	The supplier is moderately or unimportant for us (there are several options and substitutes), but we are not a priority for the supplier.
3	The supplier is very important to us (high dependency due to being a single supplier, shortages or quality requirements) and we are not a priority for the supplier (does not deal with complaints in a timely manner, does not give flexibility, we do not represent a significant % of their sales, etc.).

Table 5.7 - Bargaining Power Evaluation and scale positioning

Once the company selects the valuation for each criterion, it can proceed to calculate the supply complexity with the following formula:

$$\text{Supply Complexity} = \sum i * j \quad (5.2)$$

where i is the scale positioning of the factor and j the weight already calculated as the average vector in Table 5.2.

Using the raw material milk from Yogurt Company as an example, the supply complexity is calculated assigning a value for each criterion given the tables 5.3, 5.4, 5.5, 5.6 and 5.7,

- Financial Risk: The value assigned is 3, since the CEO mentioned the high risk of mismatched expenditures and income *“My suppliers give me no credit support, none of them give me credit, all of them strictly cash. I do have to grant credit to my clients. I do give them credit for 30 days.”*
- Seasonality: The seasonality risk for this specific product is relevant considering the climate conditions of Colombia, the value assigned is 2.

“Here, because of the weather conditions, there are landslides, so there is a shortage of powdered milk in, for instance, at the beginning of the year like in August, so we deal with that situation and try to keep a little bit more in stock.”

- **Order Size:** Order size was evaluated as 2 *“We had milk suppliers from whom we had to buy large quantities of milk, which was too much for us and the return was not in the short term.”*
- **Shelf Life:** Since the company did not claim to have any shelf life risk, but the raw materials require refrigeration the value assigned was 1.
- **Bargaining Power:** It was evaluated as 3, since the suppliers shown a higher power given by the size of the supplier, and the lack of access to credit, and also that although there are other suppliers available the company chooses to work with the same one *“I have a supplier for milk, why change something that already works?”*

Using the values assigned per each criteria the supply risk is calculated using the equation 5.2, giving as a result of 2,4 out of 3, positioning the Milk as a high supply risk item.

5.2.2 Supply Market Complexity – HORECA

Due to the differences between the statements of HORECA and manufacturing, a different assessment of the supply complexity axis was established for this sector. Here the factors Seasonality, Order Size, Shelf Life and Bargaining power are considered, the weight given to each factor was found equally using the Saaty scale. Because they were mentioned the same number of times, Shelf Life and Order Size are rated 1, equally important to each other, while Seasonality, being mentioned most often together with Bargaining Power, is rated 5 or strong importance with respect to the first two. The results are shown in Table 5.8.

Comparison matrix				
vs	Seasonality	Order Size	Shelf Life	Bargaining power
Seasonality	1.00	5.00	5.00	1.00
Order Size	0.20	1.00	1.00	0.33
Shelf Life	0.20	1.00	1.00	0.33
Bargaining power	1.00	3.00	3.00	1.00
Totals	2.40	10.00	10.00	2.67

Table 5.8 - Supply Risk Pairwise Comparison Matrix (HORECA)

The CR was measured as in the Manufacturing section, with an RI of 0.9 for this case since the number of criteria is 4. The Supply Complexity Normalized Matrix, Average Vector and CR are shown in Table 5.9.

Normalized matrix					Average	C. Measure
vs	Seasonality	Order Size	Shelf Life	Bargaining power		
Seasonality	0.42	0.50	0.50	0.38	0.448	4.056
Order Size	0.08	0.10	0.10	0.13	0.102	4.014
Shelf Life	0.08	0.10	0.10	0.13	0.102	4.014
Bargaining power	0.42	0.30	0.30	0.38	0.348	4.048
Totals	1.00	1.00	1.00	1.00		

CI	0.009
RI	0.900
CR	0.010

Table 5.9 - Supply Complexity Matriz Normalizada , Average y CR (HORECA)

The rating scales within each criterion were done in the same way as for the Manufacturing sector. Once the company selects the score for each criterion, it can proceed to calculate the supply complexity with the formula (5.2).

5.2.3 Strategic importance – Manufacture and HORECA

For the assessment of the axis of strategic importance or impact on value, the two most frequently mentioned factors were considered: the impact on cost in 100% in both cases and the impact on quality in 6/10 manufacturing companies and 6/6 HORECA. Given the incidence of these two parameters, the impact on quality was assigned a weight of 40% and the impact on cost a weight of 60% for Manufacturing, and an equal weight or 50-50 for the HORECA Sector.

In the same approach as for the supply complexity axis, a rating scale from 0 to 3 was defined for each criterion. The cost impact assessment is quite objective and will

require companies to use their cost records to classify the items, using an ABC criterion, based on the Pareto principle or 80/20 rule. Quality impact assessment is more subjective and may even have sub-criteria, but for practical and generality purposes we will consider quality at a general level.

In the Table 5.10 the rating scale for the criteria Impact on Cost is presented, the value is assigned according to the ABC Classification of the specific purchasing item.

Impact on Cost	
1	Falls into category C (items representing together the last 20% of the costs).
2	Falls into category B (items that together represent the second 30% of the costs).
3	Falls into category A (items that together represent the first 50% of the costs).

Table 5.10 - Impact on Cost Scale Evaluation

In the Table 5.11 the rating scale for the criteria Impact on Quality is presented, the affirmations written describe the impact on final product quality due to an specific purchasing item.

Impact on Quality	
0	Imperceptible impact
1	Low impact
2	Medium impact
3	High impact

Table 5.11 - Impact on Quality Scale Evaluation

Once the company selects the valuation for each criterion, it can proceed to calculate the Strategic Importance with the following formula:

$$\text{Strategic Importance} = \sum i * j \quad (5.3)$$

where i is the scale positioning of the factor and j the weight already established.

Using the raw material milk from Yogurt Company as an example, the strategic importance is calculated assigning a value for each criterion given the tables 5.10, and 5.11.

- Impact on Cost: The value assigned is 3, since the CEO mentioned “Of what is spent on purchases, about 80% is for milk, the rest goes to flavours, colours, carafes, other things.”

- **Impact on Quality:** The value assigned is 2, since it has a medium impact on quality when comparing with the flavours and probiotic micro-organism cultures as mentioned by the CEO *“I don't use national flavours or cultures because they are a bit ordinary, the ones I use are very good Italian cultures, the flavours I use are German and Swiss.”*

Using the values assigned per each criteria the strategic importance index is calculated using the equation 5.3, giving as a result of 2,6 out of 3, positioning the Milk as a item. with a high strategic importance,

5.2.4 Revisited Kraljic's Matrix

Based on the previous considerations to determine the level of supply market complexity and strategic importance, the matrix can be now built. Given that Supply Complexity and Strategic Importance will have a rating between 0 and 3, the Kraljic matrix was constructed, allowing the purchase items to be placed in 4 quadrants or categories.

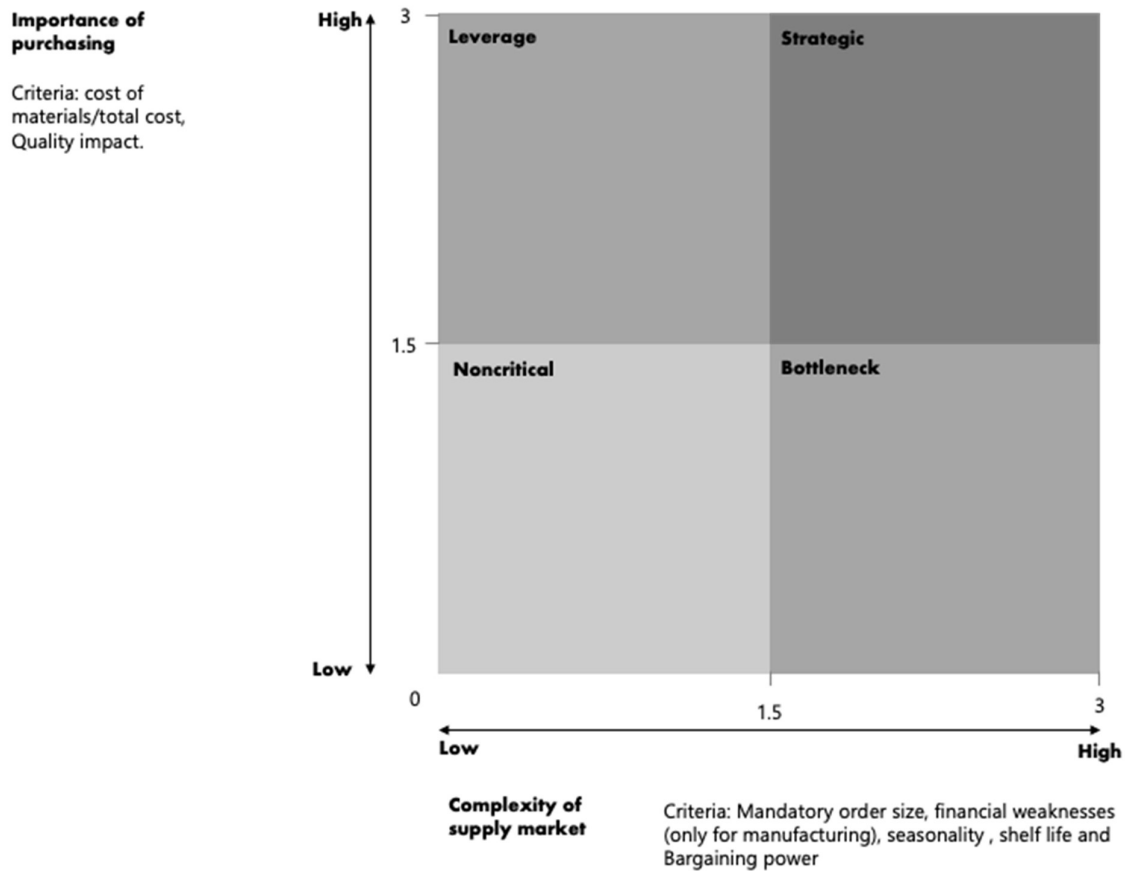


Table 5.12 - Proposal of axes for the Kraljic's matrix

The first quadrant corresponds to the items that because of the high importance to the business activity and a high complexity of the supply market should be considered Strategic Items since the business activity depends highly on them and are of high risk for the company. Inside the second quadrant the Leverage Items are located, which have a significant impact on the business, but the supply risk is considered low. The third quadrant gathers the Non-critical Items, these purchases have low impact on business activity and are found in abundance. In the last quadrant the Bottleneck Items are presented, these purchases have a low business importance, but are characterised by the high supply risk.

5.3 Procurement Category Management Proposals

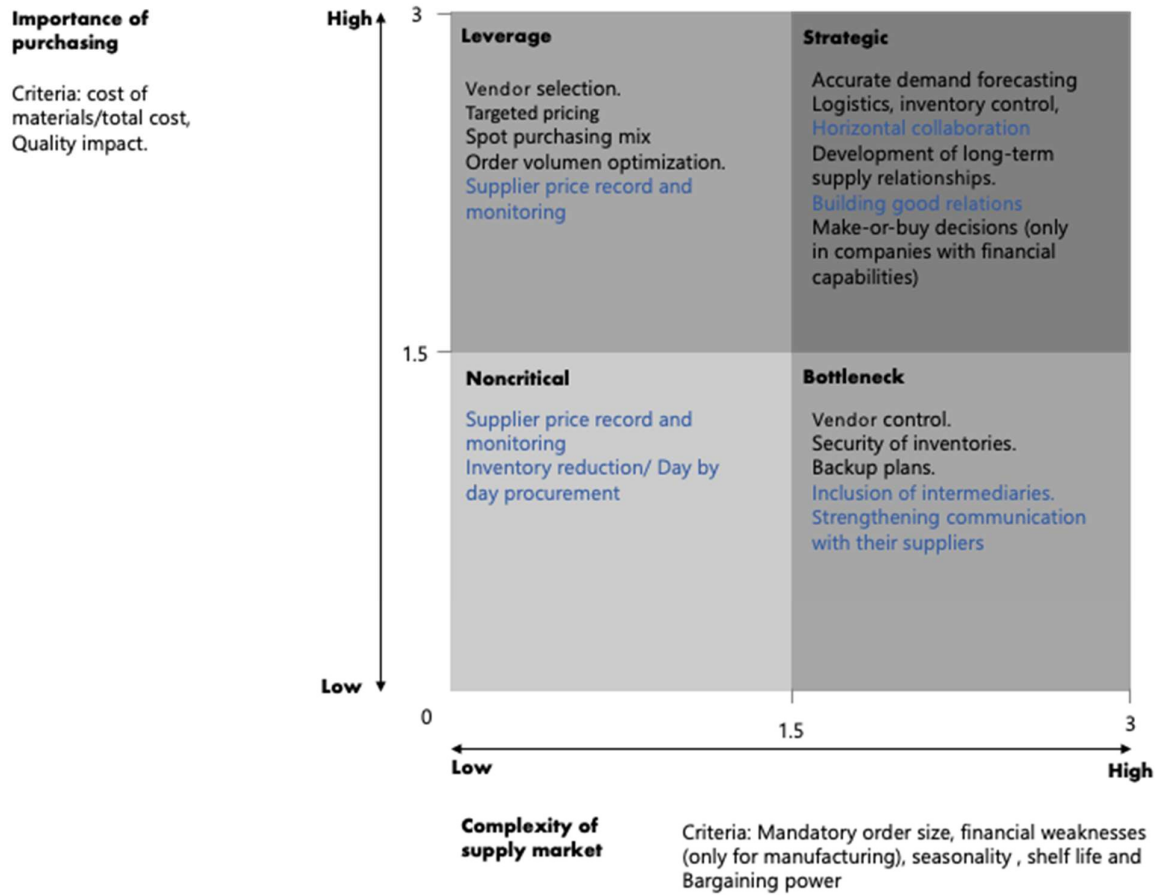


Table 5.13 - Proposal of management strategies per quadrant

The management strategies are identified in Figure 5.13, considering Kraljic’s proposals in his study and the proposals suggested in this research (highlighted in blue), the strategies per Procurement Category are described below.

5.3.1 Strategic Items

Within Kraljic's proposals we first analyse the ones conceived for Strategic purchasing items, those with a medium to high supply complexity and strategic importance. The first task proposed is Accurate demand forecasting, which can be carried out by these companies as it is strategic for them, even more so taking into account seasonal variations in supply. However, given the scarcity of resources, the demand forecasting can be done maintaining updated sales records and production data as an initial step.

Next we find Logistics and Inventory Control, keeping a correct and up to date record of goods will help planning to minimise the risk of outages.

A strategy suggested by Kraljic, but which due to the scarcity of human resources is difficult to achieve, is to carry out a Detailed market research, as a solution we suggest the search for Horizontal collaboration with small entrepreneurs in the field to compare prices and quality of suppliers. In addition to seeking collaboration in information sharing, it is advisable to use clusters or groups, including existing SME associations, to develop good relationships and to explore horizontal collaboration in joint purchasing of raw materials to access volume discounts and facing the order size restrictions.

Another Kraljic's strategy is the Relationship Strategy, working on communication and good relationship with the supplier could be more open by sharing market information in relation to the seasonality of the market, thus replacing the need to have dedicated resources for the detailed market research strategy. The good relationship strategies as previously mentioned would be helpful in the face of the power imbalance with the larger companies and contribute to the creation of a support network between small and medium-sized companies. However, Strategic alliances or Partnerships with suppliers are not a strategy currently addressed in most of them due to the bargaining power, as the dependence from the supplier towards these companies is low. It is suggested by this work to opt for a Single sourcing strategy and Long-Term Relationship Strategy, when quality is significantly important, and the supplier has demonstrated good performance to maintain quality standards.

The Make or buy decision found within Kraljic's strategies, is proposed for mainly medium-sized companies, which have the financial capabilities to develop another business unit from which to supply.

5.3.2 Leverage items

Inventory Reduction and Higher Purchase frequency, as mentioned in the Discussion Section, is pursued already by some of these companies, this coincides with Kraljic's proposal for this procurement category, referred to as Optimization of Purchasing Volumes. Another strategy mentioned by Kraljic is the Contract spot purchasing mix, the companies in our sample do not have contracts but mentioned using spot purchasing proving this strategy to be feasible. Regarding Targeted pricing, these companies follow a cost reduction strategy, but without the necessary bargaining

power to negotiate as proposed by Kraijlic, taking price into account when selecting suppliers alongside quality.

Vendor selection can be exploited to the fullest by constantly working on the search for better suppliers, buying in a small scale until deciding to engage in a Long-term relationship with them, maintaining a Back-up whose quality and performance has already been tested. A key aspect suggested in this work, to be taken into account in vendor selection, is to look for suppliers with the possibility of Win-Win collaboration or smaller or equal size companies with which a power relationship can be established, because as presented in the Findings Chapters, size is related to power dynamics. Price Monitoring with price records as part of the vendor evaluation and selection is another recommendation to consider.

5.3.3 Bottleneck items

Kraijlic suggests as a strategy for the bottleneck elements, Volume insurance, but even through a premium cost, this first strategy is beyond the possibilities of SMEs, because as already mentioned, the lack of liquidity and the disadvantageous position of power does not allow them to make this type of agreement. Within the management of these purchases, it is feasible to include the other strategies proposed in the Kraijlic matrix, Supplier control or Evaluation, Backup plans and Security of inventory (as long as the characteristics of the product allow it), already implemented by the companies interviewed. Supplier monitoring could be oriented for this SME context towards an evaluation of the treatment, reliability and loyalty in the exchange, in order to monitor the history of relationships (Ellegaard, 2009). On the other hand, two of the strategies mentioned by the companies could reduce the risk of supply for these items of low strategic importance, the first is the Inclusion of intermediaries to reduce power imbalances or the obligation to buy at a specific volume and the second is to Strengthen communication with their suppliers to achieve real-time monitoring of their purchases, as some of the companies, despite being in a disadvantageous position, had direct communication with the supplier and used their soft skills to achieve better service.

5.3.4 Non-Critical items

Understanding the context of food SMEs and the strategies mentioned by the companies, it was possible to determine the feasibility of the strategies presented by

Kraljic. He mentions that a simple market analysis and an Optimisation of purchasing and inventory volumes is enough to achieve a good management of this category (Kraljic, 1983), both strategies could be carried out, but would require a greater effort in terms of formalisation for these companies, which is why they are not recommended for this type of company, as it is more useful to focus resources and time on items that represent a greater criticality. As a suggestion, the registration of supplier prices is proposed in order to always opt for the best option in terms of costs and the implementation of a day by day procurement or JIT approach as a tool for inventory reduction (lean procurement), with the understanding that once the necessary management maturity is achieved, it is possible to migrate towards the approach suggested by Kraljic.

5.4. Complementary Purchasing Management Proposals

Different opportunities were identified for the sectors analysed, starting from the measurement of purchasing performance, it was identified that manufacturing SMEs can make use of their cost records as an analysis tool for monitoring savings, where the variation of costs per item and the influence of management in this variation can be identified, this alternative performance measurement can also be implemented by the HORECA sector, but would require the construction of cost records.

On the other hand, a potential opportunity found in the selection of suppliers is the inclusion of factors such as Relationship/Networking capability, mentioned by Presey in the literature (Presey et al, 2009), which promote the development of relationship strategies. Also, it is advisable to look for suppliers with Win-Win Collaboration potential, which is already being applied by some of the companies in the manufacturing sector, the formation of a support network between small companies is something from which they can benefit, and it is something feasible considering that most of the companies are within associations of MSMEs which can enhance trade relations between their partners. Similarly, with regard to evaluation and follow-up, it is advisable to address more relationship factors such as rapid attention to complaints and queries, always seeking to work with suppliers with whom the aforementioned relationship strategies can be addressed. Finally, like other authors, radical organisational changes in the purchasing function to adopt business practices are suggested as far as its resources allow (Ellegaard, 2006), which will provide tools to facilitate the implementation of purchasing strategies, supplier selection and monitoring, which would lead to significant improvements in performance.

6. Conclusion and future development

The purpose of the thesis was to investigate how purchasing management in food SMEs is carried out. A state of the art literature review allowed us to understand firstly that although there is interest in the study of purchasing in SMEs, there is very limited research that focuses on the food sector. In addition to this, thanks to the literature review, it was possible to find that the development of portfolio models and their adaptability to SMEs has not been a recurring theme in the research, thus the need to tailor these models to small and medium-sized food companies as a key tool in the definition of purchasing strategies. It was also understood that there was a need to expand the literature on topics such as purchasing performance assessment, power imbalances and their mitigation alternatives, as well as supplier selection and evaluation, including possible actions that can be implemented to manage supplier failure and promote the building of long-term win/win relationships. In addition, the literature review analysis evidenced that previous studies have been mostly on European countries, leaving aside developing countries, such as those located in Latin America, which are characterised by an economy highly influenced by the participation of SMEs.

A qualitative research methodology was applied, multiple case studies, in two countries in Latin America. Among the lessons learned from the implementation of this qualitative method is the identification of strengths but also weaknesses implied by its use in the study. Firstly, this approach favoured the understanding of the context, thanks to the flexibility in the semi-structured protocol which did not limit in any way the responses of the interviewees, most of whom were open to providing quality and detailed information. In addition, it was found that conducting the interviews in the native language allowed for a better connection with the interviewee and a better interpretation of the answers. However, this method implied a greater effort in the search for the sample to be investigated, since being a time-consuming method aimed at companies with limited time resources, few businessmen were willing to collaborate in the study, which restricted data availability. In addition, continuous follow-up was required for all those who confirmed their participation in

the study to ensure their attendance at the interview, which increased the time spent in this phase of the research. We experienced a lot of time consumed in classifying the responses according to the components selected in the coding, as the responses were open-ended, requiring analysis and consensus among the researchers to classify them while maintaining the same analytical criteria.

With regard to the theoretical implications of this study, it can be concluded that it allowed the evaluation of existing theories in previous research, in a context that has not been extensively studied (Latin American food SMEs), allowing the confirmation of the theory, for example, the strategic importance of purchasing due to the fact that the percentage of the budget allocated to purchasing by these companies. On the other hand, the low level of development and formalisation of the purchasing management was also exposed, confirming that the role of the purchasing manager is a secondary role, with very basic or limited functions, and that the CEO is the main person in charge of this management. Another point that could be confirmed is that price and quality are the most important factors when selecting and evaluating a supplier.

In addition, the study favoured the construction of new theories from the expanding literature, starting with the findings that cost impact and quality impact are the relevant factors in defining the strategic importance of the purchase item. On the other hand, it was found that market complexity is largely related to seasonal phenomena, which increase the price index of the purchasing items, to the financial weaknesses of the companies, which are mostly generated by cash flow incompatibilities, to the order size restrictions of the suppliers, and to the power of the suppliers towards them. With regard to the last aspect mentioned, it was possible to identify a common strategy among the companies, that of keeping the Use Range low or avoiding "marrying a supplier", with the aim of maintaining a constant search for cheaper suppliers or suppliers with better quality/attention/fulfilment, which allowed us to understand that the low formality in contracting is conceived as an action that adds value to management by reducing the risk of supply.

From a practical point of view, the development of the research allowed the revision of the Kraljic's Matrix as a proposal applicable to the context of SMEs in the food sector in Latin America, which can be seen as a new contribution to the literature, as this implied the customisation of the model to the context studied. The proposal provided in this study, additionally represents an important contribution to the managers of this type of companies, as it shows how to implement the developed proposal and the recommended strategies for the evaluated context, as well as providing opportunities for complementary improvements for purchasing management in order to take advantage of the resources and tools that these companies already have. For example,

the use of quota records to track savings and cost reductions, and thus measure purchasing performance that is currently not realised.

Prior to making suggestions for future research, it is worth pointing out the limitations of the study. The first one is related to the limited amount of research prior to ours focused on food SMEs, which required an adaptation of the study to the available literature. On the other hand, the data selection and collection due to the fact that the study was focused on a selected group of companies, which were concentrated in two countries and two specific sectors, can also be seen as a limitation in the generalisation of the results to the context of food SMEs in Latin America. Finally, having limited time for the development of this research, made it impossible to apply and validate the revised matrix in a concrete scenario. An area for future research would be to expand the research to a larger number of interviews in order to evaluate the agro-industrial sector, other Latin American settings and the different stages of growth of SMEs. Therefore, it would be possible to validate the similarities and differences in the management of purchases in the agro-industrial sector compared to those already evaluated in this study (HORECA and Manufacturing), and to have greater certainty about the possibility of generalising the results to the agro-industrial sector. Finally, it is recommended for future steps the applicability of our proposed revision of the Kraljic's Matrix, in order to evaluate the validity and its possible benefits in the performance of small and medium sized food companies.

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A. Appendix A – Interview Protocol

Questions about the company (introduction)

1. What is the number of fixed employees the company has?
2. What is its annual sales turnover?
3. What products does your company offer?

Questions about the organisational structure and administrative management of procurement:

4. Who does purchasing in your company?
5. What are the functions performed by the purchasing manager?
6. What kind of documents do you use for purchasing management?
7. Which IT tools do you use for purchasing?
8. How do you evaluate the performance of the purchasing manager?

Questions about the Purchasing portfolio:

9. What percentage of your annual budget is spent on purchases?
10. What do you purchase and which of these purchases generate the largest expenditure for the company? Do you know what percentage of the purchasing budget you allocate to each product/service purchased?
11. How do you determine the budget allocation to each product/service purchased?

Questions on the Classification and Analysis of Procurement Expenditures:

12. Have you identified purchases of products or services that are most critical for the company? What factors (aspects) do you take into account to classify them as critical?

13. What actions do you take when making the purchases that are classified as critical?

Questions about Supplier Management:

14. What aspects do you take into account when choosing a supplier and how do these aspects vary according to the product or service purchased?
15. What methods of evaluation or performance monitoring do you use with suppliers?
16. What actions do you take in the case of repeated supplier failures?
17. What is the size of your suppliers in relation to your company?
18. What difficulties have you experienced in purchasing management that could be attributed to the size of your company?

B. Appendix B – Coding Table

Table B.1- Role of the purchasing manager and Functions of the purchasing manager (part a)

Topic	Component	Ice Cream Company	Pasta Company	Cassava Rolls Company	Chips Company	Veg Burger Company
Role of the purchasing manager	CEO	X I used to keep the accounts myself, but now I am handing them over to someone else, who takes care of all the administrative work.	X I do the procurement myself	X I play all the instruments in the orchestra, including the purchases.		X purchases are made by me and my mother
	Person of Trust, member of the board of directors					X purchases are made by me and my mother
	Supply Professional				X "Purchasing is carried out by the Supply Chain manager".	
	Administrative Staff	X I used to keep the accounts myself, but now I am handing them over to someone else, who takes care of all the administrative work.				
Functions of the purchasing manager	Supplier Selection	X I select based on the quality first and foremost	X I select suppliers on the basis of quality first and foremost, I do not mind if the price is higher.	X I choose my suppliers according to stable quality		X I choose my suppliers at the farmers' market
	Negotiation with suppliers					
	Contract management					
	Planning (Annual Budget)				X "we make an annual budget, we do it in December every year, in which each area has its own budget"	
	Purchase Request to Supplier	X I place my orders before stock runs out	X "I make the orders to the suppliers through whatsapp and calls".	X "we ask for a quotation by phone or via whatsapp, especially now that there is a lot of variation in cassava prices".	X we order on a weekly basis	
	Purchasing Logistics	X sometimes we purchase at the supplier's site				X "We buy in the national farmers' market, the purchasing management is to go there and look for the best possible price".
	Purchasing Reception	X most of the products are brought to us, not all suppliers have a point of sale.	X we are looking for suppliers who can bring the product to us	X "We control the quality of the product when it arrives".		X "For grains and pulses we have a supplier who brings them to our door".
	Inventory Control		X I have a deposit control sheet		X we have to control the inventory because we must have a minimum stock of 8 days of raw materials.	
	Payment Management	X bank transfers are made, or we pay in cash when we go to the shop.	X I'm in charge of the payment			X "We make payments from the vegetable supplier in 60 days or so, he is the only one who gives us a term".
	Projection of purchases (forecast)				X a purchase planning is made with a monthly master production plan of the commercial area.	
	Follow-up of shortages				X I keep monitoring how suppliers are behaving with us.	
	Supplier evaluation					
	Registro de costos	X ".we have a raw material cost record from which the cost of the final product is calculated."	X "I have a cost spreadsheet."	X "I have a costing system that I perfected over time in an Excel."	X We record the costs and month by month, we make an analysis of how much of a given raw material was purchased and if we are going to meet the budget or not.	
Cost analysis				X A purchase pareto is made, where the cost of each product is taken into account.		

Table B.2-Role of the purchasing manager and Functions of the purchasing manager (part b)

Topic	Component	Sausages Company	Coffee Producer	Snack Company	Yogurt Company	Chocolate Company
Role of the purchasing manager	CEO	X the owners themselves manage the purchases	X I am the manager and I manage everything myself	X Yes, I am the person in charge of purchasing.	X How it is a microenterprise, I handle procurement	X "I do the purchasing management myself"
	Person of Trust, member of the board of directors					
	Supply Professional					
	Administrative Staff					
Functions of the purchasing manager	Supplier Selection	X I choose suppliers according to quality and price.	X I select according to coffee samples brought to the winery by the growers.		X I have established suppliers that I have previously selected	X others came to us offering their services and today we have a list of suppliers to whom we turn monthly"
	Negotiation with suppliers			X I do the negotiating		
	Contract management					
	Planning (Annual Budget)					
	Purchase Request to Supplier		X we make the purchase order by email or by whatsapp	X I have a person who helps me by managing purchase orders with each supplier (assistant).	X Sometimes I go to the points of sale. Or if not I order by phone via whatsapp depending on the requirements.	X "We request what we require by calls, for example, chocolate, toppings, milk cream, butter and coloring, whatever is needed is requested by phone or WhatsApp"
	Purchasing Logistics				X Sometimes I go to the points of sale. Or if not I order by phone via whatsapp depending on the requirements.	
	Purchasing Reception	X upon receipt, the temperature is measured and the product is checked.	X the product is checked every time it is picked up, it is very visual.	X the traceability of the products must be verified once they arrive through the invima requirements.		X "all suppliers provide home delivery service and we take care of the reception
	Inventory Control					
	Payment Management					
	Projection of purchases (forecast)					X "I forecast what my expenses are going to be for the following month and that helps me to make decisions"
	Follow-up of shortages	X faults are registered in a record of products received				X "I keep a record of faults where I write down if it arrived expired, even if the packaging says that it is valid, or if it
	Supplier evaluation				X I have my sheets	
	Registro de costos		X cost register in excel for accounting purposes	X I use excel for cost analysis		X "I have an Excel where I place all the purchase invoices weekly"
Cost analysis			X I use excel for cost analysis		X the following month, for example, if there was a supplier who was bought twice in that month, I investigate what happened there and how I can optimize the management "	

Table B.3 Degree of Documentation and IT Tools (part a)

Topic	Component	Ice Cream Company	Pasta Company	Cassava Rolls Company	Chips Company	Veg Burger Company
Degree of Documentation	Contracts					
	Formal purchasing quotations				X We do the annual budget, we do it in December every year, where each area has its own budget.	
	Formal written supplier quotations	X the company sends the quotation document				
	Existing suppliers' price database					
	Purchase Request					
	Payment orders					
	Comparative supplier selection sheets				X selection through audits according to the quality programme, with monitoring sheets	
	Goods Receipt forms		X "I have a cost spreadsheet."		X we handle internal documents of raw materials to be uploaded to the inventory system	
	Existing suppliers' price database	X "... we have a database of supplier price history."		X "I have a comparative Excel by raw material of the purchase prices of each supplier"		
	Purchase Orders				X we use purchase orders	
	Receipts/Invoices	X we handle invoices, strictly legal	X we receive invoices when the product arrives	X Yes, we handle credit notes and invoices.	X yes, we handle invoices, all legal	X we need an invoice from the supplier
Cost Spreadsheets	X I have an excel where I calculate the cost of the final product from the raw material cost.	X I have an excel cost sheet	X "I have a costing system that I perfected over time in an Excel."	X We record the costs and month by month, we make an analysis of how much of a given raw material was purchased and if we are		
IT Tools	ERP	"I am developing the purchasing system"			X "We use an ERP that has different modules, including purchasing module"	
	Spreadsheets	X I have an excel where I calculate the cost of the final product from the raw material cost.	X I have an excel cost sheet	X "I have a costing system that I perfected over time in an Excel."		
	Email					
	WhatsApp/Messenger		X "I make the orders to the suppliers through whatsapp and calls".	X "we ask for a quotation by phone or via whatsapp, especially now that there is a lot of variation in cassava prices".		X I contact suppliers by whatsapp

	Not reported in literature
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Table B.4- Degree of Documentation and IT Tools (part b)

Topic	Component	Sausages Company	Coffee Producer	Snack Company	Yogurt Company	Chocolate Company
Degree of Documentation	Contracts					
	Formal purchasing quotations					
	Formal written supplier quotations					X "what we do is approve the quotation that the supplier sends us"
	Existing suppliers' price database			X	X "Here we have some forms where suppliers are qualified, these forms are used for both selection and evaluation"	
	Purchase Request		X	X I have a person who generates purchase requests		X "my brother, who is in charge of production, gives me a monthly requisition form"
	Payment orders					
	Comparative supplier selection sheets				X	X "Here we have some forms where suppliers are qualified, these forms are used for both selection and evaluation"
	Goods Receipt forms	X records of products received				X "we have a register where I write down the conditions in which the raw material arrived"
	Existing suppliers' price database					
	Purchase Orders			X we generate purchase orders		
	Receipts/Invoices	X of course we use invoices is necessary for tax purposes	X accounting office receives invoices	X we only handle purchase orders and invoices.	X "Legally you have to have an invoice for everything, both to sell and to buy"	X Ellos te envían la factura electrónica
	Cost Spreadsheets		X cost register in excel for accounting purposes	X "I use Excel for cost analysis"		X I also have an excel file where I am placing these invoices on a weekly basis.
IT Tools	ERP					
	Spreadsheets	X yes, we use an electronic excel spreadsheet.	X cost register in excel for accounting purposes	X "I use Excel for cost analysis"		X I also have an excel file where I am placing these invoices on a weekly basis.
	Email		X we make the purchase order by email or by whatsapp	X we don't use a system, all by mail chat or mobile phones.		X "what we do is approve the quotation that the supplier sends us by email"
	WhatsApp/Messenger		X we make the purchase order by email or by whatsapp	X we don't use a system, all by mail chat or mobile phones.	X I place orders via telephone via whatsapp depending on the requirements and sometimes to find out if there have been price increases I write to them.	X "suppliers take the order, either by call or by WhatsApp"
	Not reported in literature					

Table B.5 -Performance Evaluation (Internal) and Supplier Selection (part a)

Topic	Subtopic	Component	Ice Cream Company	Pasta Company	Casaca Rolls Company	Chips Company	Veg Burger Company				
Performance Evaluation (Internal)	N.A.	KPIs (Cost, Quality, Time, Supplier)									
		Procurement Budget Compliance				X	"Month by month, we make an analysis of how much of certain raw material was purchased and if we are going to meet or not the budget"				
		Savings and cost tracking	X	"choose the cheapest supplier, if it is cheaper one and the next day another".	X	"there were adjustments in the price, ... we reached a person who sells us at a very good price the vegetables."	X	"In my system, I have registered the prices at which I buy, I see more or less the rate at which it is increasing or decreasing, this helps me to look for new suppliers, with better prices and improve my management."			
		Not measured					X	"We have a hard time tracking savings because products are seasonal and have significant fluctuations in price".			
Supplier Selection	Factors	Quality	X	"I measure quality by testing my recipe using your product (raw material)"	X	"we look for our product to have quality in taste and visual because we sell something different, it does not matter if the price of the raw material is high".	X	"first they must have a stable quality"	X	"we choose the suppliers that comply with the technical data sheet we have for each raw material"	
		Confidence through recommendations									
		Attention to your needs									
		Consulting and expertise from the manufacturer									
		Networking facilities									
		Single source supplier									
		Immediate product availability									
		Financing facilities									
		Relationship history					X	"I have been in the business for several years and for me it is essential to maintain a good relationship with suppliers"			
		Supplier reputation					X	"for me it is important that they are a serious company, that they do not have a bad reputation, that I know them"			
		Order size									
		Win Win Collaboration Potential						X	"I am interested in sharing information with my suppliers, I look for the supplier to be a collaborator not just a payment collector"		
		Ease of Distribution or Proximity			X	"we're looking for someone who can bring us here, not go looking"					
		Quality Habilitations									
Financial capacity to produce											
Price	X	"with respect to packaging my clientele cares more about price than quality, that is why I get the best option in price" (talking about packaging)	X	"Part of the search process was also to see if we could get a cheaper option, because we used to buy in supermarkets and today we found a person who sells at a really good price"	X	"I have to call practically four suppliers, I have even looked for new suppliers, and in that hustle and bustle I am getting better prices"	X	Que tengan un buen costo.	X	"We always look for the lowest price because every cost has an impact on the final cost" "we want to be competitive" "it's our reality, we are a small company and that's what we look at the most."	

Table B.7 Supplier Evaluation (part a)

Topic	Subtopic	Component	Ice Cream Company	Pasta Company	Casava Rolls Company	Chips Company	Veg Burger Company
Supplier Evaluation	Factors	Quality in delivery	X "one day the same product arrives in the same packaging and it goes wrong (raw material importer case?)"	X "best powder came to us with different quality than what we used to buy".	X "we are controlling the raw material".		X "They should be honest with what they are selling, for example, add calpas in the bag." "since they always put the nicot stuff, and sell us in a closed bag, we can't be sure of what we are getting".
		Quality according to production performance	X "check how your ice cream is coming along".				
		Delivery conditions (Delivery Time and Delivery Quantity)				X Que nos cumplan con la disponibilidad del producto	
		Reliability in payment, financing				X "How do they deal with us, there are some that you tell them that you can't pay them today and they don't deliver, others that do, that is part of the evaluation, that they are a collaborator not just a collector".	
		Attention to your needs				X "How do they deal with us, there are some that you tell them that you can't pay them today and they don't deliver, others that do, that is part of the evaluation, that they are a collaborator not just a collector".	
		Consulting and expertise of the manufacturer					
		Price Volatility	X "Today in the morning there is a price, in the afternoon there is no more, and the next day the price goes up, I look for options or I buy from another city".				
		Non-compliance with contract					
	GMP Audits				X evaluación a través de auditorías con visitas, con planillas de seguimiento		
	Formality	Evaluation/monitoring records			X "In the reception Excel I make a column of observations, but a lot is also of memory, of raw material we have 20 suppliers and it is much easier to control this way".	X "I do the evaluation through audits with visits, with monitoring form"	"It is not very possible to do this, because the supply is not very well developed".
		Negotiation		X "the supplier is complained to and we talk to him about what happened, we try to talk and reach a solution" (best case).		X "we seek a resolution with the supplier, we have very large and very serious suppliers that meet all our requirements. If necessary, we issue a credit note and the supplier re-delivers a product with the required quality"	
	Actions in case of bad performance	Changing supplier - Not totally, lowering volumes, getting a back up supplier	X "I'm looking for options, I'm buying from another city".		X "I always try to have an alternative supplier".		
		Changing supplier - Totally		X "in case the supplier continues to fail, other suppliers are sought".			X "I used to buy once from that supplier and then no more".
		Implementing sanctions					
		Investment in supplier development					
		Constant Failure but No actions					
		No Failure					

Table B.8 - Table B.7 Supplier Evaluation (part b)

Topics	Subtopic	Component	Sauvages Company	Coffee Producer	Snack Company	Yogurt Company	Chocolate Company	
Supplier Evaluation	Factors	Quality in delivery	"the temperature is measured and the product is verified".	X "It is verified every time it is received, it is a very visual evaluation."	X "We are governed by Inyima with traceability and there is another person who is in charge of that part".			
		Quality according to production performance					X "We have done tests ourselves to determine the shelf life of the product with different raw materials."	
		Delivery conditions (Delivery Time and Delivery Quantity)				X "We worked with a supplier and on several occasions they defaulted on orders."		
		Flexibility in payment, financing				X "what forms of payment they receive if they don't receive cash check they give us credit, credit card, all those things and based on that then a score was drawn."		
		Attention to your needs						
		Consulting and expertise of the manufacturer						
		Price Volatility						
		Non-compliance with contract						
		GMP Audits				X "We see how the product is stored at the supplier, and that the personnel are properly uniformed".	X "With the food regulator, once a year we can visit the plant as an audit in some way. Depending on the result, we can decide to change the supplier consistently or to understand that it was just a mistake."	
	Formality	Evaluation/monitoring records		"we don't have a program".		X "format is devaluing what he is offering us and also assessing us how he is not offering it and whether we can continue with it."	X "What we do have is a register where I write down if it arrived expired even if the packaging says it is valid, or if it arrived without being batched, without having an expiration date"	
	Actions in case of bad performance	Negotiation						
		Changing supplier - Not totally, lowering volumes, getting a back up supplier						
		Changing supplier - Totally	"the complains are made and in case of recurrence, we look for another supplier".	X	"I change it."	X "if it no longer solves me, the decision to change is taken."		
		Implementing sanctions				X "if we have an outstanding balance, we cannot cancel it until it is resolved".		
		Investment in supplier development						
Constant Failure but No actions								
No Failure					X "With my current suppliers everything is fine, they don't usually let me down. I had one that stopped selling to me little by little because my volumes were small".	X "I only had a problem once with Colanta, but they solved it right away and it never happened again".		
		Not reported in literature						

Table B.9 -Spend Analysis (part a)

Topic	Subtopic	Component	Ice Creams Company	Pasta Company	Casava Rolls Company	Chips Company	Veg Burger Company					
Spend Analysis	N.A.	% of expenditure allocated to Purchases	less than 50%				X	"we could estimate around 40%"				
			50 % or more	X	55 to 65% of the cost of the final product		X	55% of costs for raw material inputs that we require to operate	X			
			not identify			X	"We have not identified this, we survive on what we sell, everything is in expenditure, such as advertising, etc., we have not yet made any profit"	X	"we don't have a budget, is a lot of day to day, the management is done only by myself"			
		Identifications of purchase items	X	the supplies are dairy products, flavourings, colourings, emulsifiers, packaging, etc.	X	what flour, eggs, vegetable powders, packaging, etc.	X	Amongst the purchased items are casava starch, cheese, packaging ...	X	we establish which material to buy and how much we will need in tonnes to develop a certain amount of finished product.	X	what we buy are mainly the greens
		% of budget per purchase item identified	X	"I check what I need, what I have, what I have to buy".				X	Determining how much each product consumes through the master production plan and the cost and budget plan.		"Our venture is still very small and I can't make a sales projection yet to see how much to buy and when it is cheapest".	
		Identification of the most costly purchases and the motive	Purchase Volume	X	milk because that's what I use the most	X	"Flour is the main expense, plus you have to buy 10 packs of 25 bags to get a discount".		X	each raw material has a different contribution margin, depending on what we are going to need, the one that represents the highest cost is the raw potato.		
				Uncertainty of the market: impact on price variations, due to atypical climatic conditions, changes in government that bring new				X	"at the price of a bag of starch today, I would previously buy 3 bags of starch" "there is a drought that is affecting the crops"			
			High Price	X	emulsifier is consistently expensive	X	"a single package corresponds to 30% of the cost"					
			Seasonality This is due to price peaks during certain times of the year.							X	"What I spend the most money on are the green vegetables, they can't be stored" "The products are seasonal and there are significant fluctuations in the price"	

Table B.10 Spend Analysis (part b)

Topic	Subtopic	Component	Sausages Company	Coffee Producer	Snack Company	Yogurt Company	Chocolate Company					
Spend Analysis	N.A.	% of expenditure allocated to Purchases	less than 50%				X	Around 40% is allocated to purchasing				
			50 % or more	X	on average 70%		X	Around 65%	X	"Approximately, I would say between 50 and 60%".		
			not identify			X	I can't give you any numbers, I don't have a budget					
		Identifications of purchase items	X	mainly beef and pork, which are the main ingredients of San Juan chorizo.	X	coffee is purchased directly from the farmer and disco as fuel for the machines.	X	Yes, raw materials such as cheese	X	milk, flavour, colour, crops, cereals, these things.	X	Yes, cocoa, creams, packaging, dye, fruit fillings. Equipment maintenance is also part of the expenditure.
		% of budget per purchase item identified				X	The budget is allocated according to the commercial expansion plan.		X	About 80% of it is for milk. The rest goes, what are flavour, colour, crops, cereals these things.		I have not identified it, but I can tell you that 25% goes to packaging, but the rest we do not know
		Identification of the most costly purchases and the motive	Purchase Volume	X	the milk generates a higher cost because of the quantity used, the volume purchased is quite high				X	Milk powder. This percentage for each type of raw material is done on a volume basis.		
				Uncertainty of the market: impact on price variations, due to atypical climatic conditions, changes in government that bring new				X	"they have imposed many taxes lately, for example, you have to pay a tax to the FEDERAN livestock farmers' fund, all this has increased the price a lot, an increase of more than 100%"	X	Lately, with the increase of the dollar, the cost has increased, because the packaging is manufactured here, but the raw materials to do it are brought from elsewhere.	
			High Price	X	energy, as everything is mechanical, costs a lot of money, and the fuel for the machines is the disco.					X	The packaging without a doubt, we are focusing lately on boutique chocolate shop, so for us it is important that the packaging is of very good quality.	
			Seasonality This is due to price peaks during certain times of the year.				X	"The products that cost the most are cheese, the weather in Colombia varies a lot, there is a lot of summer, a lot of winter, so this affects the productivity of the milk, and therefore the production of cheese is lower".				

Table B.11- Supply Market Complexity (part a)

Topic	Subtopic	Component	Ice Cream Company	Pasta Company	Casasa Rolls Company	Chips Company	Veg Burger Company	
Supply Market Complexity	Spend Classification	Product Availability	X "Generally the biggest issue is the availability of products, there are products that I can buy elsewhere, but as my policy is quality I don't do it"..... 80% of my recipe is from 1 supplier He manages the market here in Paraguay and he gets to do and undo".			X raw materials of vegetable origin, potatoes, bananas and oil are critical because they do not have a fixed price all year round, instead they are seasonal.	X "We have products that are very sensitive to seasonality, prices and so on" "In a certain season the prices of carrots and beetroot go up, prices depend on supply and demand".	
		Supplier Concentration Monopoly conditions	X "There are 2 to 3 suppliers that manage the market (packaging inputs ice cream buckets)"					
		Seasonality: impact on product availability and prices		X "Eggs are scarce and very expensive depending on the season, during Easter week they go up due to seasonal demand"		X raw materials of vegetable origin, potatoes, bananas and oil are critical because they do not have a fixed price all year round, instead they are seasonal.	X "We have products that are very sensitive to seasonality, prices and so on" "In a certain season the prices of carrots and beetroot go up, prices depend on supply and demand".	
		Logistics costs (transport)		X "It is very difficult to find egg suppliers willing to offer the logistics to the factory"				
		Production capacity of suppliers						
		Financial weakness: cash flow inconsistency, low liquidity		X because we don't have credit, the flour supplier doesn't give it to us, if I need to make 100 kilos of noodles today, I have to have money to buy 100 kg of flour to make that production	X "If I had 5 million extra I would buy because I know that it is going to continue to rise".	X So we have been investing a lot in agriculture and at times we experience cash flow problems. However, through the different bank credits, we are able to have that cash flow, so we really need to plan well so that the raw material arrives at the right time.	X We are incurring more problems in terms of financing, because we buy in cash, but the companies where we are going to sell to pay us in installments.	
		Suppliers bargaining power	X "You can't negotiate with them.... Because they have very high demand", "they don't pay attention to our complaints because they sell the same, that's why I'm telling you, they are a very big importer and they control the market".	X "They didn't want to sell to us, they didn't answer our message because they only want to sell in large quantities."			X "We have no bargaining power, I can't tell a chard producer that I will buy a certain amount of parcel of land on a monthly basis.	
		Substitution Possibilities	X There is a product called glucose and that would be a derivative as it is a sugar, right? to replace it I ask the technician and I say, look, I lack this product, what can I do, and he tells me well, apply a little more sugar, that much per cent, but that has the disadvantage that instead of lasting you a year it lasts you 2 months.	X "Some suppliers have offered us powdered eggs, but that doesn't work for us."				
		Storage risk (shelf life)					X what I struggle with the most are the greens, they can't be stored for a longer time.	
		Mandatory Order Size	X "I don't have a quick turnaround on the bucket issue, I'm going to buy in bulk..." "You can't negotiate with them.... Because they are in high demand"	X "We are forced to buy 10 packs of 25 bags of containers to get a discount They didn't want to sell to us, they didn't answer our message because they only want to sell in large quantities."	X "there are difficulties in volume purchases in the packaging component, sometimes we end up having a two-year stock, it is a frozen investment"			
Uncertainty of the market			X "at the price of a bag of starch today, I would previously buy 3 bags of starch" there is a drought that is affecting the crops, is uncertain when is going to end"					

Table B.12 Supply Market Complexity (part b)

Topic	Subtopic	Component	Sausage Company	Coffee Producer	Snack Company	Yogurt Company	Chocolate Company	
Supply Market Complexity		Product Availability	X there are periods of the year when pork is normally in short supply	X "There are periods when the disco becomes scarce, you can't get it and you have no way to dry your coffee." "The coffee is seasonal and you can't buy the same amount all the time". el café es estacional y no se puede comprar siempre la misma cantidad	X The weather in Colombia varies a lot, there is a lot of summer, a lot of winter, so that affects the productivity of the milk, and therefore the production of cheese is low.	X I don't use national flavours because they are a bit regular as I am in Colombia, for example, the flavours I use are German, Swiss and Dutch, the crops are Italian." "Sometimes here because of the climatic conditions there are landslides. So there tends to be a shortage of powdered milk in, for example, at the beginning of the year like in August, so we take that situation into account and we try to stop a little bit more on existence."	X We use red fruit pulp and they are not supplying it as they used to, i.e. they are sending it abroad, you go to supermarkets and you can't get this pulp anywhere. In Colombia, the price of butter and cream has gone up a lot. It used to cost 9000 pesos and now it costs 22000 pesos, so many confectioners are making their own butter, but I can't because my butter and cream have to be UHT.	
		Supplier Concentration Monopoly conditions	X "There are very few suppliers of pork with the required sanitary authorization"			X Milk powder, which is made here by the big companies, is made by Colanta, a cooperative of dairy farmers that is at the forefront of the country and ProLacta, which is another big company.		
		Seasonality impact on product availability and prices	X there are periods of the year when pork is normally in short supply	X "There are periods when the disco becomes scarce, you can't get it and you have no way to dry your coffee." "The coffee is seasonal and you can't buy the same amount all the time". el café es estacional y no se puede comprar siempre la misma cantidad	X The weather in Colombia varies a lot, there is a lot of summer, a lot of winter, so that affects the productivity of the milk, and therefore the production of cheese is low.	X "Some periods here because of the climatic conditions there are landslides. So there tends to be a shortage of powdered milk in, for example, at the beginning of the year like in August, so we take that situation into account and we try to stop a little bit more on existence."	X In Colombia, the price of butter and cream has gone up a lot. It used to cost 9000 pesos and now it costs 22000 pesos, so many confectioners are making their own butter, but I can't because my butter and cream have to be UHT.	
		Logistics costs (transport)						
		Production capacity of suppliers						
		Financial weakness: cash flow inconsistency, low liquidity	X Working capital is usually our problem. Because you need funds to allocate, as the return is slow because you have to over stock packaging.	X Yes, of course, money, financing at the end of the day is often not enough, there is not enough to buy everything you need, if you have to go as according to your possibilities.	X So always being a small supplier, they want us to pay them in cash or in advance and it is difficult, we give 60 day credit to our customers, so we also ask for it, this makes it difficult to buy in volume and to overstock	X Lack of credit help, none of them give me credit, all of them strictly cash. I do have to trust my clients. I do give them credit for 30 days.		
		Suppliers bargaining power					X Lack of credit help, none of them give me credit, all of them strictly cash. I do have to trust my clients. I do give them credit for 30 days.	
		Substitution Possibilities						
		Storage risk (shelf life)	X "maintaining an inventory is complicated because we do not use preservatives, we have to buy constantly and it runs out quickly (Coke meat)		X You have to be very well prepared to know in what time period you can buy and since you can't store for long period you have to immediately process eats so that a shortage does not catch you out.			X The pulp, even if it is pasteurised, even if it says that it expires in 6 months, I have tried it, I have brought quantities and they have been damaged. No matter how much I keep them refrigerated, they are damaged. You have to buy it weekly every time you are going to use that pulp, you buy it weekly.
		Mandatory Order Size	X Working capital is usually our problem. Because you need funds to allocate, as the return is slow because you have to over stock packaging because of the order size.			X MILK. I use 56 packages of 25 kg in a month, about 250 kg. The supplier told me no, that it was no good for them, that they work with 1 tonne for example. So for me, 1 tonne is too much. _____ they started to make excuses, that the volumes were too small, that we should buy more, so we were practically like that they were eliminating us from their group of clients. So as a result of that, the supplier was changed.	X We always have to deal with the issue of packaging. In order for the price to be lower we have to buy 500 units.	
Uncertainty of the market						X Lately, with the increase of the dollar, the cost has increased, because the packaging is manufactured here, but the raw materials to do it are brought from elsewhere.		

Spend Classification

Table B.13 Stategic Importance, Dependence of the Supplier and Usage Rate (part a)

Topic	Subtopic	Component	Ice Cream Company	Pasta Company	Cassava Rolls Company	Chips Company	Veg Burger Company	
Strategic Importance		Impact on Quality	X "There are products that I can buy elsewhere, but as my policy is stable quality I don't".	X "We cannot present something that does not look good or that does not have a good color, no matter that the price of the raw material is higher".	X "I can only buy from the producer, not from fractionators because my starch cannot be contaminated with flour" (because it is for collars).			
		Impact on Cost	X 60% of my purchasing budget goes to milk and emulsifiers.	X "There are products that are critical because of their cost, for example, a single package represents 30% of the cost and flour has a very high price".	X "cheese, average price of cheese, high standard price".	X each raw material has a different contribution margin, depending on what we are going to need, the one that represents the highest cost is the one potatoes.	X "we always look for the lowest price because every cost has an impact on the final cost, and we want to be competitive"	
		Inventory Cost	X "I don't have a fast recovery time with the bucket containers, large volume...".		X "There are difficulties in volume purchases on the packaging side, sometimes we end up selling in two years, it's the investment that is standing still".			
		Competitive differentials created						
Dependence of the Supplier		Size of the supplier (supplier of bigger size)	X "... are in high sales demand".	X "flour is a large and well-known supplier".	X "Egg and starch suppliers are bigger".	X We have very large and very serious suppliers who will meet all our requirements in case of need.		
		Size of the supplier (supplier of smaller size)						
		Possibility to apply sanctions for non-compliance						
	Motivation to work together	Solution/ attention to complaints	X "They don't pay attention because they sell the same, that's why I'm selling you, they manage the market" (Brazil importer case).				X We have very large and very serious suppliers who will meet all our requirements in case of need.	
		Financing possibilities		X "With the (small) suppliers of powders and vegetables we do have credit, only with the big companies we don't have credit".	X There are suppliers that I will say look, today I don't have money to pay you and they directly deliver us products and there are others that will say, send me such and such and I will pay you, I don't know, next week such and such a day and they will send you without any problems.	X of course, there are some that give me flexibility in payment.		
		Flexibility in volumes and frequency of purchases						
		Access to discounts						
Usage Rate		Critical procurement suppliers scarcity	X "There are 2 to 3 suppliers that manage the market (packaging inputs) ice cream buckets					
		None or low facility to change suppliers or little	X "there are products that I can buy elsewhere, but as my policy is quality I don't do it" (raw material ice cream) "there are 2 to 3 suppliers that manage the market (packaging inputs)".		X "I can only buy from the producer, not from fractionators because my starch cannot be contaminated with flour" because it is for collars.			
		Formal contracts with suppliers						
		Supplier development programmes						

Table B.14- Strategic Importance, Dependence of the Supplier and Usage Rate (part b)

Topic	Subtopic	Component	Sausages Company	Coffee Producer	Snack Company	Yogurt Company	Chocolate Company		
Strategic Importance		Impact on Quality	X "By changing supplier the raw material changes and that affects the taste of the product".			X I don't use national flavors because they are a bit regular as I am in Colombia, for example, the flavors I use are German, Swiss and Dutch, the crops are Italian."	X So it is not so easy for me to replace suppliers. I know that my supplier gives it to me because they are a factory that has a long life. I have to be very careful because it can affect my product in one way or another.		
		Impact on Cost	X generates a higher cost for the quantity used, the volume purchased is quite high.	X energy, as everything is mechanical, costs a lot of money, and the fuel for the machines is the cisco.	X "The products that cost the most are cheese, the weather in Colombia varies a lot, there is a lot of summer, a lot of winter, so this affects the productivity of the milk, and therefore the production of cheese is lower".	X Milk powder, the price has increased a lot, more than 100% increase due to taxes.	X 25% goes to packaging, we are lately focusing on a boutique chocolate shops, so for us it is important that the packaging is of very good quality.		
		Inventory Cost	X "our disadvantage is that to work well one needs to buy packaging in quantity and it is money that remains standing when not used over a period of time".				X the packaging always we see ourselves with the issue. That in order to lower the price we buy more and keep it in stock.		
		Competitive differentials counted							
Dependence of the Supplier		Size of the supplier (supplier of bigger size)	X they are large exporting meat companies	X cisco suppliers are multinationals, they are giant companies.		X Milk powder, which is made here by the big companies, is made by Colanta, a cooperative of dairy farmers that is at the forefront of the country and Profelche, which is another big company.	X Most of the critical suppliers are large (colanta, packaging, cocoa).		
		Size of the supplier (supplier of smaller size)		X coffee growers are small and medium-sized	X There are none bigger, maybe a few of the same and many small ones.				
		Possibility to apply sanctions for non-compliance			X the suppliers' accounts are pre-paid, if we have an unpaid balance we cannot cancel until we have solved the problem.				
		Motivation to work together	Solution/attention to complaints	X for these suppliers it is also important for us to tell them about the conditions under which their product arrives.					X The suppliers are willing to allow the food engineer to visit them once a year as an audit in some way...Incidentally, the big companies, as they have many employees, have very good service. So when I needed a technical sheet, they have given me an answer in less than 30 minutes ... I thought that when I knocked on the door of big companies and asked for information, it would take days, but no
			Financing possibilities						
			Flexibility in volumes and frequency of purchases						
Access to discounts									
Usage Rate		Critical procurement suppliers scarcity	X "there are very few suppliers of pork with the required sanitary authorization".			X are bigger, as I say powdered milk, here it is made in big companies,			
		None or low facility to change suppliers or little	X "there are very few suppliers of pork with the required sanitary authorization".			X are bigger, as I say powdered milk, here it is made by few big companies,			
		Formal contracts with suppliers							
		Supplier development programmes							

Table B.15 Statigic Importance, Dependence of the Supplier and Usage Rate (part a)

Topic	Subtopic	Component	Ice Cream Company	Pasta Company	Casaosa Rolls Company	Chips Company	Veg Burger Company	
Sourcing Strategy	N.A.	Supplier Base Optimization	Single Sourcing	X "There are products that I can buy elsewhere, but as my policy is quality I don't do it (80%)"				
			Parallel/Dual			X I have an alternative supplier." "I try not to get married to just one"		
			Multiple Sourcing			X "If I have to buy casaosa starch today, I contact at least 4 suppliers to find the cheapest one".		
		Supplier Relationship	Long term relationship			X "I have been in the business for several years and I maintain a good relationship with the suppliers" "an occasional supplier can solve a temporary problem but it creates a big problem for me afterwards" "once I have a quality product, I keep the supplier"		
			Short term relationship	X "I'm looking for options, buying from other sites (in the face of importing suppliers that raise prices), I'm fighting every day with this issue of suppliers".				
			Supplier development programmes					
		Good Relationship Strategy			X "I have been in the business for several years and I maintain a good relationship with the suppliers", "I share information with the suppliers", "I have a good relationship with the suppliers", "in terms of being a partner".			
		Lower the inventory, day to day purchasing (lean)			X "I practice a lot of just in time, in the case of cheese, I keep low inventory, I buy for 10 days and then I have to restock".	X We have to have a minimum stock of 8 days of raw materials. Good planning is required so that the raw material arrives at the time it is needed, no more and no less.		
		Vertical Integration				X What we do is cultivate 240 hectares of potato per year to protect ourselves, by 2030, to have 5000 hectares of vegetable production to be divided between banana, maize, potato and with that amount we would be practically self-sufficient.		
		Horizontal Collaboration						
Over stocking/ over production								
None		X	we lack planning (buying eggs)?			X "I can't join with someone else to buy because I need the invoice in my name for tax reasons" "It would be brilliant if there was a co-operative".		

Table B.16 Statigic Importance, Dependence of the Supplier and Usage Rate (part b)

Topic	Subtopic	Component	Sausages Company	Coffee Producer	Snack Company	Yogurt Company	Chocolate Company	
Sourcing Strategy	N.A.	Supplier Base Optimization	Single Sourcing	X it is not convenient to be changing suppliers, looking for better prices, but rather to maintain the relationships with them.			X Why change something that already works, I have 4 suppliers, one for milk, one for sugar, one for packaging and one for crops.	X I made my list of suppliers when I started and I never changed them again.
			Parallel/Dual			X We open an account for them, just 5%, and then we open the quota so that they become a main supplier. Initially, all suppliers are sporadic.		
			Multiple Sourcing					
		Supplier Relationship	Long term relationship	X por venir de proveedor cambia la materia prima y eso incide en el sabor del producto. No es conveniente estar cambiando de proveedor, buscando mejores precios, sino mantener las relaciones.			X why change something that already works	X I made my list of suppliers when I started and I never changed them again.
			Short term relationship			X We open an account for them, just 5%, and then we open the quota so that they become a main supplier. Initially, all suppliers are sporadic.		
			Supplier development programmes					
		Good Relationship Strategy						
		Lower the inventory, day to day purchasing (lean)						X is purchased weekly each time the pulp is to be used is bought weekly
		Vertical Integration						
		Horizontal Collaboration						
Over stocking/ over production		X	buy extra slices before it gets scarce	X You have to be very well prepared to know in what time you can buy and store and over process so that a shortage does not catch you out what we do is that we increase the purchase of cheese and process it faster.	X Try to ensure that we never run out of powdered milk, i.e. that there is always enough left over to be able to use in case of a shortage.			
None								

No reportado en literatura

Table B.17 -Horeca Role of the purchasing manager (part a)

Topic	Component	Pizza Restaurant	Sandwich Catering	Barbecue Restaurant
Role of the purchasing manager	CEO	X Normally we both take care of it because we are both owners of the pizzeria, so either one of us can do the shopping.	X I do it myself	X Well, nowadays and 4 years ago, just like when it all started, I do all of it, the purchasing, administration, marketing and supplier business.
	Person of Trust, member of the board of directors			
	Supply Professional			
	Administrative Staff			

Table B.18 -Horeca Role of the purchasing manager (part b)

Topic	Component	Home made Restaurant	Ice Cream Restaurant	Fast Food Restaurant
Role of the purchasing manager	CEO	X I usually manage everything, I'm the oldest in this field.	X we often do the supplier negotiations ourselves	X My mother does all the purchases in the branch in sincelejo and I do in the one in bogota.
	Person of Trust, member of the board of directors			X My mother does all the purchases in the branch in sincelejo and I do in the one in bogota.
	Supply Professional			
	Administrative Staff		X currently there is a person who is an administrative director that we already have that once the main negotiation has been done, which we, the owners, do ourselves, she manages the purchase	

Appendix B – Coding Table

Table B.19 HORECA Functions of the purchasing manager (part a)

Topic	Component	Home made Restaurant	Ice Cream Restaurant	Fast Food Restaurant
Funciones del Responsable de Compras	Supplier Selection	X I am the one who managed everything, the part of choosing the suppliers as well.	X supplier search there are times when we have been supported by the administration, but we (the owners) do it ourselves.	
	Negotiation with suppliers		X the main negotiation is with us, the owners.	
	Contract management			
	Planning (Annual Budget)			
	Purchase Request to Supplier		X once negotiated, she takes care of the purchase (administration).	X But in the case of Bogotá, for example, where we have two bread suppliers, there is one that delivers on Mondays, Wednesdays and Fridays, which means that we receive the order 48 hours in advance. So the purchase management has to be a bit more organised.
	Purchasing Logistics		X So, then we don't have as much staff as someone in charge of purchasing, someone in charge of dispatching, but it's practically one person who does the process.	
	Purchasing Reception	X I handle everything by phone (by whatsapp) and they bring me all the supplies here.	X The received is registered in the system. So, then we don't have as much staff as someone in charge of purchasing, someone in charge of dispatch. purchasing, someone in charge of dispatching, but it is practically one person who does the process. And the person in charge of purchasing is Doris. She is in charge of checking the expiry dates, of checking that the records are up to date.	
	Inventory Control		X ERP has an inventory module, transcribes invoices into the system.	X The kitchen staff sends the shopping list and the inventory, and from there, we are able to check the status or suddenly we run out of stock of a certain product, and then we decide what to buy,
	Payment Management		X she takes care of the payment, the receipt, all that. (Doris)	
	Projection of purchases (forecast)			X We decide what to buy based on the expected demand, it is not the same to buy for the weekend as for the weekdays. As the software also tells us Fridays and Sundays are the days with the highest sales and it is more difficult to buy, we know what quantity to buy exactly.
	Follow-up of shortages			
	Supplier evaluation			
	Registro de costos		X ERP transcribes invoices into the system.	
Cost analysis				

Table B.20 HORECA Functions of the purchasing manager (part b)

Topic	Component	Pizza Restaurant	Sandwich Catering	Barbecue Restaurant	
Funciones del Responsable de Compras	Supplier Selection		X of course, selection of suppliers	x what I do is to compare suppliers in several respects.	
	Negotiation with suppliers				
	Contract management				
	Planning (Annual Budget)				
	Purchase Request to Supplier	X contact the supplier ...my wife calls them, orders from them	x	Contact with suppliers	x by whatsapp we make the order to the supplier or by telephone call
	Purchasing Logistics		X	go and buy what is needed	x I can see which suppliers are closer and so on, then I can go and get them from there.
	Purchasing Reception	X they don't bring us the product here to the shop, we go	X	receive orders that have delivery	x is visually verified at the delivery because one can see it at first glance.
	Inventory Control				x Yes inventory control always on what is rather frozen.
	Payment Management		X	I make the payments, I do the complete management	x I make the bank transfer and send the voucher to the supplier.
	Projection of purchases (forecast)				
	Follow-up of shortages				
	Supplier evaluation				
	Registro de costos	X analysis is made precisely to verify whether there has been an increase in the prices of supplies. We have to adjust our product without lowering the quality and in order to earn a profit.			x I compare when it cost me 1 year ago and when it cost me now, so I know that there are seasons as they are food products, there are also seasons when it is cheaper and there are seasons when it is a little bit higher the cost
Cost analysis	X analysis is made precisely to verify whether there has been an increase in the prices of supplies. We have to adjust our product without lowering the quality and in order to earn a profit.			x The spreadsheet is to know in which season it is going to go up or prepare to know in which season the cost will go up. So, when it is in season, good quality, good cost, we freeze it to have it available in the cold season.	

Table B.21 HORECA Degree of Documentation and IT Tools (part a)

Topic	Component	Home made Restaurant	Ice Cream Restaurant	Fast Food Restaurant
Degree of Documentation	Contracts			
	Formal purchasing quotations		X si hacemos (presupuesto anual)	
	Formal written supplier quotations			
	Existing suppliers' price database			
	Purchase Request			X We manage an internal purchasing form in which the employees give us the actual inventory and we cross-reference it with the sales system we have, and then in the same form we make the request for the ingredients they need for the next day.
	Payment orders		X ERP is integrated	
	Comparative supplier selection sheets			
	Goods Receipt forms	X all legal, we ask for an invoice from the supplier	x legal invoices	X electronic invoicing is what is used
	Existing suppliers' price database			X in the software, raw material inputs and outputs are recorded.
	Purchase Orders			
Receipts/Invoices		X The system places a purchase order		
Cost Spreadsheets				
IT Tools	ERP		X We manage an ERP, an invoicing system where everything is integrated, it is called odu, it is free software.	X we use a software called piropos that is totally complete, you manage inventory, all the income and expenditure of raw materials, the truth is that it is a spectacular tool.
	Spreadsheets			
	Email			
	WhatsApp/Messenger	X I handle everything by phone (by whatsapp) and they bring me all the supplies here.		
	Supplier APP	X plier runs an application called bee, where they directly write down all your bills and give you points.		

Table B.22 -HORECA Degree of Documentation and IT Tools (part b)

Topic	Component	Pizza Restaurant	Sandwich Catering	Barbecue Restaurant
Degree of Documentation	Contracts			
	Formal purchasing quotations			
	Formal written supplier quotations			
	Existing suppliers' price database			
	Purchase Request			
	Payment orders			
	Comparative supplier selection sheets			
	Goods Receipt forms	X invoices are handled, some electronic invoices	x I always ask for invoices from suppliers	x legal invoice, receipt of payment
	Existing suppliers' price database			
	Purchase Orders			
Receipts/Invoices			x large companies require a purchase order from me.	
Cost Spreadsheets	X excel is used for accounting transactions, for accounting purposes.		x I compare when it cost me 1 year ago and when it cost me now, so I know that there are seasons as they are food products, there are also seasons when it is cheaper and there are seasons when it is a little bit higher the cost	
IT Tools	ERP			
	Spreadsheets	X excel is used for accounting transactions, for accounting purposes.		x I work with Excel only
	Email			
	WhatsApp/Messenger	X Contact with suppliers is made by WhatsApp	x list of purchases through the whatsapp group, which will be updated as we go along.	x by whatsapp we make the order
	Supplier APP			
	Not reported in literature			

Table B.23 -HORECA Performance Evaluation (Internal) and Supplier Selection (part a)

Topics	Subtopic	Component	Home made Restaurant	Ice Cream Restaurant	Fast Food Restaurant
Performance Evaluation (Internal)	N.A.	KPIs (Cost, Quality, Time, Supplier)			
		Procurement Budget Compliance			X We control that the expenditure on raw materials does not exceed 35%
		Savings and cost tracking			
		Not measured	X we do not	X No, we don't have as much staff as someone in charge of purchasing	
Supplier Selection	Factores	Quality	X I only buy if I recognise the brand, the best brands are Argentinian, they are of good quality but they are expensive.	X "We test the dough to make sure that it tastes good, that it has a good texture, that it has a good texture which we normally that the dough has a good taste, that it has a good texture that we normally have".	X we are at least 100% linked to the quality of the product, more than the price I particularly focus on the quality of the product
		Confidence through recommendations			
		Attention to your needs			
		Consulting and expertise from the manufacturer			
		Networking Facilities			
		Single source supplier			
		Immediate product availability			
		Financing facilities			
		Relationship history	X I have been working with them (beverage provider) since I was doing catering in a school many years ago		
		Supplier reputation			
		Order size			
		Win Win Collaboration Potential			
		Ease of Distribution or Proximity		X "if you are required to make a daily purchase and also have to deal with transportation, you would spend a lot of gasoline".	
		Quality Habilitations		X " You have to buy from suppliers that are registered, due to a matter of INVIMA (Colombian regulatory body), because the issue of dairy products is very risky"	
Price	X But not leaving aside the price (inputs and raw materials), the most humble clients ask me for the cheapest brand of soda (drinks that are resold).	X At a certain point, price has a big impact. In disposable products we used to care about a good logo, in the pandemic we had to buy whatever was available	X I can get a product that is not as recognised but with a lower price as long as it has quality.		

Table B.24 HORECA Performance Evaluation (Internal) and Supplier Selection (part B)

Topics	Subtopic	Compenent	Pizza Restaurant	Sandwich Catering	Barbecue Restaurant
Performance Evaluation (Internal)	N.A.	KPIs (Cost, Quality, Time, Supplier)			
		Procurement Budget Compliance			
		Savings and cost tracking			
		Not measured	X We do not measure	x I really don't	x a detailed analysis that explains everything we do in purchasing, not
Supplier Selection	Factores	Quality	X because we try to keep the quality standards of our pizza high, when input costs go up, we can't lower the quality, but we look for other ways to get around the situation like making a thinner slice , I choose vilaseca because it is vacuum packed and has a long shelf life	x but the bread I only have one because it is the only one that has the quality that I require, obviously there are many bakeries in the country but that is the only one with the taste that I like, for this product quality matters a lot.	x quality always comes first, the cheapest is the most expensive.
		Confidence through recommendations			X we always talk among colleagues, we say, look, here it is
		Attention to your needs			
		Consulting and expertise from the manufacturer			
		Networking Facilities			
		Single source supplier			
		Immediate product availability			
		Financing facilities			x friendship is very important, to get credit with acquaintances.
		Relationship history		x the way in which we treat each other is always taken into account.	x friendship is very important, to get credit with acquaintances.
		Supplier reputation	X A traditional brand that is a brand with goodwill		X we work with the best brands, important and renowned companies.
		Order size	X Coca Cola and Postobón gave us the modality of putting a ceiling on our purchases, that is, it must be more than 50,000 pesos, so we buy from the distributor		
		Win Win Collaboration Potential			
		Ease of Distribution or Proximity	X Mac pollo is located close to where we are located and the motorbike will bring it to you quickly.	x that they can make delivery so that we can avoid that trouble.	X that it is not far from us
		Quality Habilitations			
Price	X We have not tried other places because the truth is that they are more expensive and the price is terrible, we stayed with vilaseca, they give us a good product we are looking for good packaging, not so ecological because they are very expensive.	x Mainly the price, obviously the price at which they sell but also the service they can deliver so we avoid that problem.	x we check which one is the most expensive, which one is the cheapest, but quality always comes first.		

Table B.25-HORECASupplier Evaluation (part a)

Topics	Subtopic	Compenent	Home made Restaurant	Ice Cream Restaurant	Fast Food Restaurant
Supplier Evaluation	Factors	Quality in delivery	X For the flour we see if it does not come with any bugs.	X And then the purchasing person who is Doris has to check the expiry dates, to check how the records are up to date.	X We evaluate them at the moment when the product is delivered to us, if there is also a price control and a quality control is carried out,
		Quality according to production performance		X "We test the dough to make sure that it tastes good, that it has a good texture, that it has a good texture which we normally that the dough has a good taste, that it has a good texture that we normally have".	
		Delivery conditions (Delivery Time and Delivery Quantity)	X The truck drivers want to trick you and not bring down all the product (soft drinks), so you have to be on top of them and check them one by one.		
		Flexibility in payment, financing			
		Attention to your needs			
		Consulting and expertise of the manufacturer			
		Price Volatility		Alinear a la izquierda	X I had a supplier, for example, who used to give me things at one price one day, then send them to me at a different price the next day. We always make a comparison between invoices, someone is 100% in charge of reviewing the suppliers' invoices
	Formality	Evaluation/monitoring records		not really to be honest	

Table B.26 HORECA Supplier Evaluation (part B)

Topics	Subtopic	Component	Pizza Restaurant	Sandwich Catering	Barbecue Restaurant	
			packaging, not so ecological because they are very expensive.			
Supplier Evaluation	Factors	Quality in delivery		x I control the quality when they deliver	x visual. It would be basically in the batch, colour and appearance of the product in my line of business. And it is also almost all of that, for example, visual, because at a glance I can tell.	
		Quality according to production performance				
		Delivery conditions (Delivery Time and Delivery Quantity)	x	The quantities are taken into account		x Yes, quantity of course
		Flexibility in payment, financing				
		Attention to your needs				x The method of evaluation in my industry, at least the one I take into account the most is Customer Service and Post Sales Service.
		Consulting and expertise of the manufacturer				
		Price Volatility			x I check from time to time to make sure that they do not vary the price too much or that the treatment is adequate.	x I'm always asking around, looking at the costs, to see if they were all around the same place or who raised their cost and why.
	Formality	Non-compliance with contract				
	Evaluation/monitoring records		As they are such recognised and traditional brands, we trust their processes.			

Table B.29-HORECA Spend Analysis (part a)

Topic		Subtopic		Homemade Restaurant	Ice Cream Restaurant	Fast Food Restaurant			
SPEND ANALYSIS	N.A.	% of expenditure allocated to Purchases	less than 50%		X	"around 30%"	X " is more or less between 32% and 35% max, If the percentage increases, we would have to cut off staff"		
			50 % or more						
			not identify	X	"I have not identified because there are days when I spend less and there are days when the drink arrives and I spend more"				
		Identifications of purchase items		X	"yes, and this depends on daily production"	X	"I buy the ice cream, toppings and everything needed to produce the Waffle Dough"	X "yes, we identify what we need to buy based on what we need to produce"	
		% of budget per purchase item identified							
		Purchase Volume							
		Identification of the most costly purchases and the motive	High Price	Uncertainty of the market: impact on price variations, due to inflation			X	"the price has been very variable due to inflation"	X "the current issue in colombia is inflation, for example oil in less than 6 months has increased by 200%"
				Typical high std cost	X	"flour, meat and eggs are very expensive right now in paraguay and I buy by brand"			X "Everything that has to do with proteins is what we spend the most on, because they are expensive."
				Estacionalidad			X	the price of fruit is seasonal, the ice cream also varies a lot, because of the milk issue.	

Table B.30 HORECA Spend Analysis (part b)

Topic		Subtopic		Pizza Restaurant		Sandwich Catering		Barbecue Company		
SPEND ANALYSIS	N.A.	% of expenditure allocated to Purchases	less than 50%	X	"the percentage ranges between 28 and 31%"		x	"At least 30 to 40% of the budget"		
			50 % or more							
			not identify			x	"the truth is that I have not identified"			
		Identifications of purchase items	x	"yes, based on the need of the pizzeria"	X	"yes, we have on the shopping list"	x	"Yes, we buy meat, sausages mainly"		
		% of budget per purchase item identified								
		Identification of the most costly purchases and the motive	High Price	Purchase Volume			x	"what is used the most is what I buy the most"	x	"meat, that's what I need most for barbecues"
				Uncertainty of the market: impact on price variations, due to inflation	X	"The costs of products all over Colombia used to go up annually, but now because of inflation they go up every month or every two months, things have gone up by 25 to 30%" "Flour is the most expensive, last year, at least 3 times in the year, it had price increases".				
				Typical high std cost						
				Estacionalidad					X	"Yes, what I spend the most on are the products that have a more fluctuating (seasonal) cost, as I mentioned"

Table B.31 HORECA Supply Market Complexity (part a)

Topic	Subtopic	Homemade Restaurant	Ice Cream Restaurant	Fast Food Restaurant
Supply Market Complexity	Product Availability	X "There are times when there are no products, at the moment in Paraguay our main concern is eggs, eggs cannot be brought from Argentina and local suppliers cannot supply them"	X the price of fruit is seasonal, the ice cream also varies a lot, because of the milk issue. Egg powder is also scarce because it is a product that we bring from Medellin and it takes a long time to arrive due to road problems.	
	Supplier Concentration Monopoly conditions		X there is only one supplier of egg powder in colombia, then I have no choice	
	Seasonality: Impact on product availability and prices	X "local egg suppliers are not able to supply enough, we are now in Easter week and it is a time when the chipas are consumed and eggs are scarce"	X the price of fruit is seasonal, the ice cream also varies a lot, because of the milk issue.	
	Logistics costs (transport)			
	Production capacity of suppliers			
	Suppliers bargaining power		X "there are many protocols to solve our claims, I don't have the power to say "if you don't solve my problem I won't buy from you"	
	Substitution Possibilities		X "the other option I have is to remove it from my formula and add ordinary egg, but ordinary egg would spoil my final product faster."	
	Storage risk (Shelf life)		X "the shelf life of the fruit and milk is very short, the milk for the price I buy short life which lasts 3 days"	X "the issue of food preservation is important in the case of fruit and vegetables, to avoid losing what you buy."
	Mandatory Order Size		X "I am forced to buy at least 2000 units of packaging to get good prices, if i bought half i would pay double. it is money that you are going to have frozen for a long time"	X "We have a packaging supplier that does everything according to our needs. So we don't buy it as often as the other inputs and the return on investment will be slower"
Spend	Uncertainty of the marke		X Egg powder is also scarce because it is a product that we bring from Medellin and it takes a long time to arrive due to road problems.	

Table B.32 HORECA Supply Market Complexity (part b)

Topic	Subtopic	Pizza Restaurant	Sandwich Catering	Barbecue Company
Spend	Product Availability	X "we have not been able to find a good peperoni on the market, we only found one supplier villa seca"	X "there are times when beef is scarce, there is no stock in the whole country" "I have only found good bread from one bakery that has the taste and quality I need"	X "since I buy products that come from the land, there are seasons (hot and cold season) when it is cheaper and with good quality and other seasons when there is less availability and the price is a bit higher". "There is also a seasonal scarcity of eggs and the price of eggs rises seasonally."
	Supplier Concentration Monopoly conditions	X "we have not been able to find a good peperoni on the market, we only found one supplier villa seca" "we have to adapt to it"		
	Seasonality: Impact on product availability and prices		X "there are times when beef is scarce, there is no stock in the whole country"	X "since I buy products that come from the land, there are seasons (hot and cold season) when it is cheaper and with good quality and other seasons when there is less availability and the price is a bit higher". "There is also a seasonal scarcity of eggs (Easter week)and the price of eggs rises seasonally."
	Logistics costs (transport)			
	Production capacity of suppliers			
	Suppliers bargaining power	X 3 times in a row and the last time they brought	X "I realise that they don't give me that much importance because I represent less than 1% of their sales, they don't give that much importance to my company, to my claims"	X "They don't give us importance because the size of the order is very low compared to a large churrascaria"
	Substitution Possibilities			
	Storage risk (Shelf life)			X "we buy dairy products on a weekly basis due to cold chain issues, we still don't have as much capacity to keep everything cold as we would like to"
	Mandatory Order Size		X ant to sell to me because they save their produ	X "In order to obtain the supplier's priority, we would have to buy in large volumes, because, for example, a large granchurras has a much higher turnover, and obviously asks for much more."
Uncertainty of the marke			X "the price is very volatile weekly or every two or three days the cost goes up or down"	

Table B.33 HORECA Strategic Importance and Dependence of the Supplier (part a)

Topic	Subtopic	Homemade Restaurant	Ice Cream Restaurant	Fast Food Restaurant		
Classification	Strategic Importance	Impact on Quality	X "The cooking oil is critical, because if I cook with a bad oil, the smell will permeate, so it destroys the product"	X "products affect the quality of the final product, so we see that it has a good taste and texture".	X "We are 100% interested in the quality of the purchased items, rather than the price"	
		Impact on Cost	X "raw materials can be expensive because we prioritise quality and buy only from expensive brands"	X the ice cream also varies a lot, because of the milk issue, in one year it varies practically from one year to the next.	X the cost is critical, protein is what generates the most expense and the cost of oil has increased by 200%.	
		Inventory Cost		X "I am forced to buy at least 2000 units of packaging to get good prices, if I bought half I would pay double. It is money that you are going to have frozen for a long time and generate more stock"	X "We have a packaging supplier that does everything according to our needs. So we don't buy it as often as the other inputs and the return on investment will be slower and increases inventory"	
	Dependence of the Supplier	Size of the supplier (supplier of bigger size)	X my beverage suppliers are much larger	X they are as big as colanta		
		Size of the supplier (supplier of smaller size)	X my cheese suppliers are companies like me	X Very small, such as fruit and vegetable shops in the neighbourhood.	X small, they are farmers' marketplaces, local marketplaces	
		Possibility to apply sanctions for non-compliance				
		Motivation to work together	Solution/ attention to complaints	X We have not experienced any problems with them, they respond to our complaints (large supplier).		X in sincelejo, as you have been with the supplier for years and years, you can talk to him and ask him to solve your problems.
			Atención a sus necesidades/ buena comunicación	X We have been working together for many years. I have the phone number of the supplier, supervisor and other managers and I contact them often.		X in sincelejo, as you have been with the supplier for years and years, you can talk to him and ask him to solve your problems.
			Financing possibilities			X a big supplier gives credit, they come, they give us a loan, but for 3 days.
	Flexibility in volumes and frequency of purchases				X in sincelejo we don't have to order in advance, if we order the night before, the baker will deliver the next day.	
	Access to discounts	X "If you are a good buyer they help you, they give you a fridge and gifts, if you use the supplier's sales application they give you points and through that you get benefits and discounts."				

Table B.34 HORECA Strategic Importance, Dependence of the Supplier (part b)

Topic	Subtopic	Pizza Restaurant	Sandwich Catering	Barbecue Company	
Classification	Strategic Importance	Impact on Quality X standard for our pizza, even if input costs go up,	x bakery that has the taste and quality I need, b	x "we must maintain quality, the quality of the inputs always comes first, cheap turns out to be expensive".	
	Impact on Cost	x "Flour is the most expensive, last year, at least 3 times in the year, it had price increases"	x "what is used the most is what I buy the most"	x cost is important, we always have to adapt costs every end of the year.	
	Inventory Cost				
Dependence of the Supplier	Size of the supplier (supplier of bigger size)	X All are bigger except the farmers' market	x I represent less than 1% of their sale	x they are bigger, a large granchurras has a much higher turnover, and obviously asks for much more.	
	Size of the supplier (supplier of smaller size)				
	Possibility to apply sanctions for non-compliance				
	Motivation to work together	Solution/ attention to complaints		x we don't fail each other, we solve everything (bakery)	x Yes, they are willing to solve the problem
		Atención a sus necesidades/ buena comunicación	X The supplier keeps us informed of any changes they make and also when we have an event we call the supplier and ask them for additional orders and they help us.	x good relationship with the bakery and never fail	X they care about its quality and ask for feedback so if the order was not good I tell them it was not good, right off the bat.
		Financing possibilities			x they tell us to pay in 15 to 20 days, so nothing is set in stone, but trust is the most important thing.
		Flexibility in volumes and frequency of purchases			
Access to discounts			x I have access to swaps (influencer, visibility of brand).		

Table B.35 -HORECA usage Rate and Sourcing Strategy (part a)

Topic		Subtopic	Homemade Restaurant	Ice Cream Restaurant	Fast Food Restaurant	
Usage Rate		Critical procurement suppliers scarcity		X there is only one supplier of egg powder in colombia, then I have no choice		
		None or low facility to change suppliers or little		X there is only one supplier of egg powder in colombia, then I have no choice		
		Formal contracts with suppliers				
Sourcing Strategy	N.A.	Supplier development programmes				
		Supplier Base Optimization	Single Sourcing			
			Parallel/Dual			X backup option, in restaurants we have to have pl
			Multiple Sourcing			
		Supplier Relationship	Long term relationship	x I have been working with them since I was doing catering in a school.		X in sincelejo we don't have to order in advance, if we order the night before, the baker will deliver the next day.
			Short term relationship			
			Supplier development programmes			
			Good Relationship Strategy	x if you are a good buyer they help you		X Since you have been with the supplier for years and years, you can talk to him and ask him to solve your problem.
		Lower the inventory, day to day purchasing (lean)				X we try to keep the purchase small in order to preserve vegetables and hamburger. we produce as quickly as possible (make the sauces) if I get these vegetables the next day they will be in production.
		Vertical Integration			X own production of ice-cream on stand-by, already acquired factories	
		Horizontal Collaboration				
		Over stocking/ over production	X	I buy and put it in the freezer, you have to take advantage when the cost is down and you have a little capital		
		None				

Table B.36 HORECA usage Rate and Sourcing Strategy (part b)

Topic		Subtopic	Pizza Restaurant	Sandwich Catering	Barbecue Company	
Usage Rate		Critical procurement suppliers scarcity		x "I have only found good bread from one bakery that has the taste and quality I need"		
		None or low facility to change suppliers or little				
		Formal contracts with suppliers				
		Supplier development programmes				
Sourcing Strategy	N.A.	Supplier Base Optimization	Single Sourcing	x "I have only found good bread from one bakery that has the taste and quality I need"		
			Parallel/Dual	plan A, plan B, plan C.		x I have to have a choice
			Multiple Sourcing		x For meat I have several suppliers, I have one main supplier and I have a list of suppliers that I use in case of need.	
		Supplier Relationship	Long term relationship			
			Short term relationship			
			Supplier development programmes			
			Good Relationship Strategy		x We have a good relationship with the bakery and never fail each other.	x "It is important to have friendship, communication, trust"
		Lower the inventory, day to day purchasing (lean)	x	We handle everything on a fortnightly basis, depending on stock and sales.	x I buy by need according to my shopping list.	x we buy dairy products weekly because of the cold chain.
		Vertical Integration				
		Horizontal Collaboration				x "we always share information about suppliers with colleagues, who has the best prices, the best quality"
		Over stocking/ over production				x "I have a cost sheet to know in which season it will increase and prepare for it. When it is in season, a good cost, we buy more of it and freeze so that we can have a better line for the cold season"
None						

Not reported in literature

List of Figures

Figure 1.1 Article Selection (From the first search).....	4
Figure 1.2 - Article Selection (From the second search).....	5
Figure 1.3 - Number of publications per year	6
Figure 1.4 - Number of publications per continent (All industry sectors).....	7
Figure 1.5 - Main contribution of the publications	8
Figure 1.6 - Methods of information gathering in the publications.....	9
Figure 1.7 - Number of publications per industry sector.	10
Figure 1.8 - Number of publications including food sector per industry.	10
Figure 1.9 – Main stages of the food supply chain. (Wagner et al., 2015)	11
Figure 1.10 - Distribution of publications by topics.	17
Figure 2.1 - Research Framework.....	21

List of Tables

Table 2.1 - Main gaps to be addressed in the study.	19
Table 3.1- General description of the cases under study	24
Table 3.2 - Size classification by annual turnover	25
Table 3.3 - Conceptual Framework – Macro Topic Formalisatio.....	26
Table 3.4 - Conceptual Framework – Macro Topic Portfolio Management.....	27
Table 3.5 - Conceptual Framework – Macro Topic Purchasing Performance	28
Table 3.6 - Information about the data collection process	32
Table 4.1 - Extract from the coding Table	35
Table 4.2 - Extract from the Horizontal Analysis – Supplier Selection (Manufacturing)	45
Table 4.3 - Extract from the Horizontal Analysis – Functions of the Purchasing Manager (HORECA).....	46
Table 5.1 - Supply Complexity Pairwise Comparison Matrix (Manufacturing).	68
Table 5.2 - Normalized Supply Complexity Matrix, Average/Weigh Vector y CR Calculations (Manufacturing).....	68
Table 5.3 - Financial Weakness Scale Evaluation.....	69
Table 5.4 - Seasonality Scale Evaluation.....	69
Table 5.5 - Order Size Scale Evaluation.....	69
Table 5.6 - Shelf Life Scale Evaluation	70
Table 5.7 - Bargaining Power Evaluation and scale positioning	70
Table 5.8 - Supply Risk Pairwise Comparison Matrix (HORECA)	71
Table 5.9 - Supply Complexity Matriz Normalizada , Average y CR (HORECA)	72
Table 5.10 - Impact on Cost Scale Evaluation.....	73
Table 5.11 - Impact on Quality Scale Evaluation	73
Table 5.12 - Proposal of axes for the Kraljic's matrix.....	75
Table 5.13 - Proposal of management strategies per quadrant.....	76

7. Acknowledgements

We would like to thank Professor Clarita Verónica Leon Bravo for being our guide on this path and for giving us the necessary basis for understanding purchasing management, knowledge that will be useful not only for the thesis but also for our professional development.

We would also like to thank the companies that took part in this study and the associations that supported the project, for without them this research would not have been possible.

