



Iberoamerican Journal of Entrepreneurship and Small Business

PROPOSAL FOR A FINANCIAL MANAGEMENT MODEL APPLIED TO A SMALL BUSINESS IN THE FERTILIZER SEGMENT

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Purpose: This is an applied research in regard to proposing a model of financial management, applied to a company in the agricultural fertilizer segment, capable of structuring all the financial information of the company in order to subsidize the process of Management and decision-making.

Method: A quantitative-qualitative method was conducted based on participant observation and action research techniques in a company specific to the agricultural fertilizer sector. The materials were collected together with primary sources (observation and interviews) of the company and secondary (company documents and financial information of the sector).

Originality/Relevance: The presented context exposes a theoretical-applied gap of instruments that help in "how" to construct and structure the financial information for SMEs in a feasible way to the entrepreneur or manager who does not have an educational formation in this area.

Results: The results of this study enable the creation of an empirical model of financial management that: i) demonstrates from the necessary organizational structure viewpoint; ii) the operational processes are inherent to the activity; (iii) the indicators should be used for the financial situation analysis and the decision-making process.

Theoretical/methodological contributions: These evidences can serve as parameters or insights for other companies of the segment of fertilizers and other small companies, as well as researchers in the organizational scope.

Keywords: Financial Management; Business Diagnostics; Financial Indicators; Performance Panel; Management Process.

Received on: 01/07/2019 / Approved on: 07/19/2019
Responsible editor: Profa. Dra. Vânia Maria Nassif
Translator: Raquel Müzel Geraldini
Evaluation process: Double Blind Review
Doi: <https://doi.org/10.14211/regepe.v8i3.1375>

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1. INTRODUCTION

It is known that the longevity of Brazilian small and medium-sized enterprises (SMEs) is less than 5 years for more than 80% of the start-up companies (Conceição, Saraiva, Fochezatto, & Aniceto França, 2018; SEBRAE, 2016). Nevertheless, for those who remain in the market, few SMEs are able to achieve a growth rate or reinvestment of capital that allows their development in the medium and long term (Serrasqueiro, Leitão, & Smallbone, 2018).

One of the main causes of this problem is the absence or the weak formalization of its managerial processes (Santini, Favarin, Nogueira, Oliveira, & Ruppenthal, 2015). It is remarkable that different academic and market studies report that a small fraction of small and medium-sized entrepreneurs know, in fact, the financial situation of their companies and how to analyze and create strategies to solve problems or potentialize opportunities (Escrivão Filho, Albuquerque, Nagano, Philippsen Junior, & Oliveira, 2017).

The literature on corporate finance has its mainstream formed and developed on the foundation of large corporations (Vilarinho, Lopes, & Sousa, 2018) that present structured, audited and published accounting-financial systems, such as (Rahman, Belas, Kliestik, & Tyll, 2017). Nevertheless, these empirical studies are guidelines to understand what decisions are made, their causes and reflexes from a comparable and standardized information structure (Lousada, & Valentines, 2011).

On the other hand, when turning to the SMEs, works such as Hall, Costa, Kreuzberg, Moura and Hein (2012), Moreira, Encarnação, Bispo, Angotti and Colauto (2013) and Vilas Boas and Morais (2014) present the accounting information limitations applied to the SMEs. Vogel and Wood Jr. (2013) and Formenti and Martins (2015) emphasize that the small and medium entrepreneur is aware of the need to implement financial indicators, but this does not always occur in practice. Works such as Panucci-Filho and Cherobin (2011), Pimenta and Silva (2017) and Jones and Jacinto (2013) present empirical applications of models that analyze the financial instruments in SMEs, highlighting their importance for the management process.



The presented context exposes a theoretical-applied gap of instruments that help one on "how" to construct and structure the financial information for SMEs in a feasible way to the entrepreneur or manager who does not have an educational training in this field. It is not, therefore, the development of new theories, but rather how to apply or make them more accessible to SMEs regarding the theoretical framework existing in the literature of corporate finances to assist managers and/or owners of SMEs to manage their companies' finances.

The importance of "how" to accomplish it can be understood in a similar way to what occurs in the Law Studies, in which, in addition to the theoretical bases of different rights (labor, tax, criminal, civil, business rights, among others) there is a theoretical structure about the "process" of each of these rights, that is, there is a field of instrumental knowledge and ordained to formalize the law operation (Almeida, 2018).

Not only does the Academy fulfill the proposition of what must be done, but also the theoretical instrumentation in managerial actions do that are simple and effective (Meyer Junior, Pascucci, & Murphy, 2012). Thus, the scope of this article is to propose a model of financial management applied to an SME that operates in the agricultural fertilizer segment.

Although case studies do not allow the generalization of the studied phenomenon (Yin, 2015), this methodological strategy allows a greater interaction with the investigated object (company) in order to externalize its context and empirically discuss the results. This methodological strategy has the value of enabling reflections for other companies of similar size for this or different business segments (Nadin, & Cassell, 2006).

In Brazil, there are more than 18 million companies (legal companies), of which more than 95% are SMEs, according to the Brazilian Federal Revenue. SMEs account for 27% of national GDP and 52% of jobs in the country (SEBRAE, 2016). Therefore, actions that contribute to the longevity and sustainability of this type of productive organization meet the economic development of the country.

It is instigating that the economic and social representativeness of SMEs does not make them the main object of the corporate finance study. However, it is consolidated in practice that 88% of the companies outsource their accounting process (Vilas Boas, & Moraes, 2014). The analyses are treated as simple tax



obligation (Moreira et al., 2013) and many companies use elaborated indexes without the standards and rigors postulated by the accounting (Hall et al., 2012).

It is possible that the difficulty of accessing the financial information presented by the academics, as well as the scarce formalization, standardization and reliability of such, due to lack of a robust accounting structure, be the obstacles to research proposition. Additionally, the academic effort to deliver "representativeness" and "validity" of results can direct investigations to a broader number of companies, therefore becoming the main focus in large organizations.

In view of this scenario, this research was developed from the questioning of the company's own entrepreneur being investigated: How should I organize and manage the financial area of my company? Despite the simplicity of the question, it is challenging to find the answer pragmatically in any of the classic manuals on corporate finance, whether national or international.

From a quantitative-qualitative research based on participant observation techniques and action research, the general goal is to propose a model of financial management, applied to a company in the agricultural fertilizer segment, capable of structuring all financial information of the company with the objective of subsidizing the management process and decision-making.

As intermediate goals, we have: i) to demonstrate it from the necessary organizational structure; ii) the operational processes inherent to the activity; (iii) the indicators that should be used for the analysis of the financial situation and decision-making.

The fertilizer segment or plant nutrition is integrated into the agribusiness chain value, being the main supplier of agrochemicals for the agricultural production in Brazil (Barros, & Silva, 2008). The plant nutrition industry consists of business manufacturers of products in the segments of foliar fertilizers, biofertilizers, organic fertilizers, organominerals, soil conditioners, mineralizers and plant substrates (Abisolo, 2016).

The plant nutrition industry revenues have reached R\$ 5.2 billion in 2015, a growth of 13% compared to the previous year, facing an economic retraction presented by the Brazilian economy during the same period. In addition to that, its social importance is highlighted, employing 14.400 employees in 2015 (Abisolo, 2016).



This market accounted for 414 registered and active companies in the year 2015, consisting predominantly of micro businesses and small companies, representing 73.7% of the total plant nutrition companies (Abisolo, 2016)

Despite the SMEs representativeness in the fertilizer sector, it is observed a process of market concentration with the formation of increasingly larger economic groups (Barbalho Júnior, & Callado, 2008). As the sector is directly dependent on imported products and agrochemicals (Dias, & Fernandes, 2006), competitiveness, regulatory and foreign exchange dynamics as well as foreign trade require the companies' effectiveness, agility and successful managerial processes (Reis, Fernandes, & Nakata, 2018).

Therefore, the choice of the company currently in study represents a relevant sector to the country in different dimensions, being poorly explored in the organizational studies, so the results constructed here can contribute to the literature focused on SMEs, especially on how to operate the financial management of companies. Additionally, it brings specific managerial contributions to SMEs that may eventually help in the longevity of these organizations.

To better organize the study, this article was structured in five sections in which, in addition to this initial section, will deal with the theoretical foundations regarding financial decisions, methodological procedures, research results with the proposition of the financial management model and final considerations. The references conclude the study.

2. THEORETICAL FRAMEWORK

Financial management is an indispensable element towards the administrative process. Ross, Westerfield and Jaffe (2002) state that the role of the financial administration is to create value in investment activities, capital structure and company's liquidity management.

2.1 Organizational Structure

According to Mintzberg (2003), the organizational structure can be defined as the way by which the work is divided into different tasks and, subsequently, how the



coordination between these tasks is performed. As stated by the author, an organizational structure is essentially based on the way the authority is distributed in the organization.

SMEs, when properly structured, have a lean organizational structure (Gonzalez-Loureiro, Sousa, & Pinto, 2017) and a shorter decision-making process, allowing a faster flow of information and better communication quality (Reis et al., 2018). These characteristics are necessary to keep the fertilizer sector afloat, which is characterized by strong competition from large companies and it causes great influence deriving from macroeconomic variances (exchange variation, requires of fertilizers, agricultural commodities costs) (Barbalho Júnior, & Callado, 2008; Dias, & Fernandes, 2006).

2.2 Processes and financial activities

Gitman (1997) and Assaf Neto (2014) presented the key activities of the financial administration: (i) financial analysis and planning, (ii) investment decisions and (iii) financing decisions.

The analysis and financial planning have as a fundamental goal to evaluate and develop the company cash flow, guaranteeing the needed resources to achieve these goals (Gitman, 1997), highlighting the expansion needs and possible upcoming disasters (Assaf Neto, 2014), as well as establish methods by which financial goals must be achieved (Ross et al, 2002).

In relation to investment decisions, Gitman (1997) and Assaf Neto (2014) state that they determine the combination and type of assets contained in the company's balance sheet, that is, the amount of resources applied in circulating and permanent assets and also the choice of which assets to acquire, when they must be replaced, modified or liquidated.

The financing decisions, in turn, refer to the combinations and the individual sources most suitable for financing, considering short and long term (Gitman, 1997; Assaf Neto, 2014).

Thus, this section aims to provide tools to successfully perform financial analysis and planning as well as investment and financing decisions.



2.2.1 Analysis and financial planning

An inefficient management of working capital reflects negatively on the organization cash flow (Zouain et al., 2011) and has a great representativeness in the annihilation factors of SMEs (Santini et al., 2015). Carvalho (2015), highlighted the importance of working capital for the performance of companies, since a large part of the capital of SMEs is invested in circulating assets (receivables, inventory and cash).

The working capital management comprises of a set of decisions that aims to ensure the proper achievement of the company's policies, directing and optimizing the portion of capital applied in its operational cycle (Assaf Neto, 2014). To define a suitable (optimum) working capital volume, the company operational specifics and its environment should be obeyed, aiming to maximize its return and minimize its risk (Assaf Neto, 2014). This need is evidenced in the fertilizer segment once the country demand, mainly in relation to soybeans and maize, yields in the sector the volatility of the international price of these commodities (Barbalho Júnior, & Callado, 2008).

The definition of the appropriate level becomes more complex in environments subject to seasonal factors. Zouain et al. (2011) observe that seasonality imposes challenges on financial administrators, implying higher levels of receivables and inventory, since revenues will be concentrated in specific times of the year. Barbalho Júnior and Callado (2008) comment that seasonality in the consumption of fertilizer leads to the existence of idle capacity during part of the year, increasing the costs of inventorytaking and raw materials.

Therefore, the importance of the cash budget is highlighted. Maduekwe and Kamala (2016) state that budgets are often used for business monitoring, performance measurement, future planning and improvement in decision-making process.

The seasonal stagnation of the sector negatively affects the company's short-term debt (Erdogan, 2018). Thus, the management of receivables is particularly important for SMEs, since they represent a large portion of their investments (Martínez-Sola, García-Teruel, & Martínez-Solano, 2014), promote sales and finance working capital (Lin, & Chou, 2015).



Atnafu and Balda (2018) have shown that a high level of inventory management increases the competitive advantages of SMEs by improving their performance. Pillai (2014) stressed that, despite the recognized importance of inventory management, in practice, decisions of much of the SMEs are based solely on intuition.

Inventory management, for Ivanovich and Viktorovna (2016), involves both the operational and strategic goals of a company, and that for efficient inventory planning, a good forecast of production and sales is required. Thus, it is important to focus on recognized tools for forecasting, replenishment and general handling of inventory (Ngubane et al., 2015).

The ABC classification is a recognized inventory classification method. Based on the Pareto principle, inventory is classified into three groups according to the required investment. In group A there are 20% of all items, and these represent 80% of the total amount invested in inventory. In group B, there are 30% of all items, representing approximately 15% of the total amount invested in inventory. The remaining items are in group C, representing approximately 5% of the amount invested (Iqbal, Malzahn, & Whitman, 2017).

2.2.2 Investment Decisions

Investment decisions are considered the most important to be taken by companies. They involve the entire process of identifying, evaluating and selecting the alternatives of resource applications in anticipation of promoting future economic benefits (Assaf Neto 2014).

There are methods to economically analyze investment alternatives. Classically, three stand out (Chittenden, & Derregia, 2015):

- i) Payback periods;
- ii) Net Present Value (NPV);
- iii) Internal Rate of Return (IRR).

The Payback period method corresponds to the time required for a project cash input to equal its initial investment (Assaf Neto, 2014).

The Net Present Value is considered a sophisticated investment analysis technique and it is calculated by means of cash flow deducted by the interest rate



required for the investment. In order for a project to be accepted, its NPV must be greater than or equal to zero (Assaf Neto 2014).

IRR corresponds to the discount rate at which the NPV equals to zero (Patrick, & French, 2016). If the found value is greater than the desired opportunity cost, the investment proposal (Copiello, 2016) is accepted.

2.2.3 Financing Decisions

The cost of capital is of paramount importance, both for investment and financing decisions (Nascimento, 2013), consisting of the cost of equity (K_e) and the cost of debt (K_d) (Assaf Neto, 2014).

The (K_e) can be calculated using the Capital Asset Pricing Model (CAPM). This model establishes a linear relationship between the return of an asset and the return of the market, establishing a return that compensates the risk assumed (Assaf Neto, 2014).

The (K_d) can be defined according to the company's onerous liabilities identified in loans and financing transactions. The debt interest has financial charges tax deductibility (Assaf Neto 2014), provided the company is taxed by real profit, which is not frequent in SMEs (Paula, Costa, & Ferreira, 2017).

After calculating the costs of each financing source, it is essential to determine the total cost of capital, also known as attractive rate of return. For the calculation of total cost of capital, the formula 01 is used which brings the Weighted Average Cost of Capital (WACC), (Assaf Neto, 2014):

$$WACC = W_j \times K_i + W_j \times K_e \quad (01)$$

Where: K_i = Debt Interest; K_e = Cost of equity; W_j = relative share (proportion) of each capital source in total funding.



2.3 Indicators/Performance Panel

To assess growth and predict the possibility of bankruptcy in small businesses, the use of financial indicators is essential (Lukason, Laitinen, & Suvas 2015). Leoneti, Nirazawa and Oliveira (2016), Vogel and Wood Jr. (2013) present the difficulties encountered by SMEs when using traditional performance indicators, highlighting factors such as lack of strategic planning, organizational problems and the absence of an efficient management system.

Maté-Sánchez-Val, López-Hernandez and Mur-Lacambra (2017) highlight that SMEs with financial indicators far from their benchmarks incur costs because they are out of balance. Therefore, managers must make changes in order to equalize them.

There are several useful indicators to assess the situation of a company that can be classified into four groups: liquidity, activity, indebtedness and structure and profitability (Assaf Neto, 2014). In practice, we intend to evaluate the decisions reflection taken by a company about its liquidity, asset structure and profitability (Assaf Neto, 2014).

The literature on financial management is scarce regarding the application of indicators or models related to SMEs, which may be from the accounting limitations presented by Hall et al. (2012), Moreira et al. (2013), Vilas Boas and Morais (2014). However, some of the indicators presented by Santos (2015), Lukason et al. (2015), Assaf Neto (2014) and Martins et al. (2015) applicable to a medium-sized company are presented in Figure 1:

Type	Indicator	Formula ^a	Goal	Author
Profitability	Residual Return on Investment (RROI)	$RROI = ROI - WACC$	Identify the spread of the company's operations against the weighted cost of fundraising.	Assaf Neto (2014)
	Return on Investment (ROI)	$ROI = \frac{Net\ Operating\ Profit}{Investment} \times 100$	Measure the company's investment return rate.	Martins et al. (2015)
	Return on Equity (ROE)	$ROE = \frac{Net\ Income}{Average\ Shareholders'\ Equity} \times 100$	Measure the rate of return reached by the company's partners.	Lukason et al. (2015)



Profitability	Gross Margin (GM)	$GM = \frac{Gross\ Profit}{Net\ Revenue} \times 100$	Identify the company's gain in relation to operational activities.	Santos (2015)
	Operating Margin (OM)	$OM = \frac{EBIT}{Net\ Revenue} \times 100$	Identify the company's gain based on operational, administrative and commercial activities.	Santos (2015)
	Net Margin (NM)	$NM = \frac{Net\ Income}{Net\ Revenue} \times 100$	Measure the company's gain in relation to the partners.	Santos (2015)
Cash flow	Asset Turnover (AT)	$AT = \frac{Sales}{Total\ Assets} \times 100$	Measure total assets productivity in relation to sales.	Lukason et al. (2015)
	Revenue Growth (RG)	$RG = \frac{(Revenue_t - Revenue_{t-1})}{Revenue_{t-1}} \times 100$	Identify the company's net revenues variation.	Santos (2015)
	EBTIDA Margin (EM)	$ME = \frac{EBTIDA}{Net\ Revenue}$	Measure the cash generated by the company's activities in relation to net revenue.	Assaf Neto (2014)
	Interest Coverage Capacity (ICC)	$ICC = \frac{EBIT}{Financial\ expenses}$	Assess the availability of company resources for the discharge of financial expenses.	Santos (2015)
Capital Structure	General debt (GD)	$GD = \frac{Total\ Gross\ Debt}{Total\ Assets}$	Identify the composition of the asset financed by a costly liability.	Santos (2015)
	Short-Term Debt (STD)	$STD = \frac{Short\ Term\ Debt}{Total\ Gross\ Debt}$	Evaluate the company's debt structure for the time to liquidate the obligation.	Santos (2015)
	Shear Effect Coefficient (SEC)	$SEC = \frac{Treasury\ Balance}{Net\ Revenue}$	Intended to evaluate the possibility of shear effect (overtrading) occurrence.	Assaf Neto (2014)
Liquidez	Current Liquidity (CL)	$CL = \frac{Current\ Assets}{Current\ liabilities}$	Assess the company's ability to honor its short-term obligations.	Assaf Neto (2014)
	Need for Working Capital (NWC)	$NWC = \frac{(OA - OL)}{Net\ Revenue}$	Measure the need for working capital (operational assets minus operational liabilities) in relation to revenue.	Assaf Neto (2014)
	Average Term Storage (ATS)	$ATS = \frac{Average\ inventory}{Cost\ of\ Sold\ Products} \times 360$	Indicates the average time required for complete company	Assaf Neto (2014)



			inventory renewal.	
Average Payment Term (APT)	$APT = \frac{\text{Supplier Purchase}}{\text{Purchase}} \times 360$		It is the average time period, in days, between the date of purchase and your actual payment.	Assaf Neto (2014)
Receipt Average Term (RAT)	$RAT = \frac{\text{Accounts receivable}}{\text{Sales Revenue}} \times 360$		It is the average time period, in days, between the date of sale and its effective receipt.	Assaf Neto (2014)
Short Term Financial Balance (STFB)	$STFB = \frac{\text{Net Working Capital}}{\text{Net Revenue}}$		Indicates the company's financial slack	Santos (2015)

Notes: The accounts/headings for the calculations must be withdrawn from the financial statements

Figure 1 – Formulas and goals of the financial indicators.

Source: Elaborated by the authors.

Despite the works presented by Panucci-Filho and Cherobin (2011), Pimenta and Silva (2017) and Jones and Jacinto (2013), the implementation of these solutions for each company is not trivial or easy to accomplish. How to elaborate this information for SMEs, especially for the fertilizer sector, presents a practical experience that allows to serve as a support, a beacon or even comparison for other realities, as presented by Santos (2015).

3. METHODOLOGY

The present study consists of a case study. According to Yin (2015, p. 32), "a case study is an empirical investigation investigating a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly defined."

The option of the case study, in particular the chosen company, was due to its organizational characteristic being often found in SMEs. The company does not have a formal organizational structure in conformity with Antonik (2004), who states that SMEs often do not organize themselves efficiently and adequately. Its administration is carried out by the owners, having a centralized decision-making process, according to Almeida and Wernke (2018) and Alves, Silva, Tavares and Dal-Soto



(2013). In addition, it does not have financial assessments and performance indicators that allow adequate management of available resources, which is typical of SMEs (Leoneti et al., 2016).

The systematization of the company's financial organization process took 4 steps as shown in Figure 02.

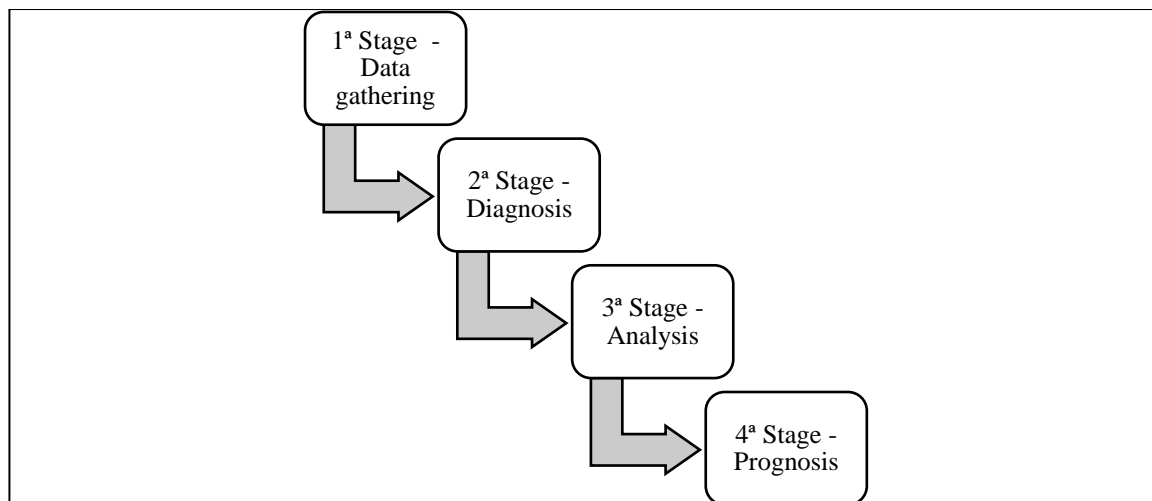


Figure 2 – Stages of the systematization of the financial organization process. Source: elaborated by the authors.

First stage consists of data gathering in order to determine which stage of financial management maturity the company stands: Preliminary, intermediate or advanced stage, as presented by Rodrigues (2014). According to Yin (2015), the sources of evidence (data) most used in a case study are: documentation, records in archives, interviews, direct observations, participant observation and physical artifacts.

The period for material collection to the present study was carried out between January and July 2017. Table 1 presents the position, company lifespan and the number of interviews performed with each of the interviewees. The interviews were not standardized, once each interviewee was asked about his specific sector.



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Interviewed Position	Company Number of Years	Interviews Attendance
Partner/Company President/Commercial and Production Director	8 years	1
Partner/ Council President /Former Operations and Finance Director	2.5 years	6
Chief Financial Officer/Legal Director	1 year - Legal Director, 4 months responsible for Financial Department	5
Controller Manager	1 year	2
PPC Supervisor	6 years	4

Table 1 – Summary of interviewees: position, number of years with the company and number of interviews.

Source: Elaborated by the authors.

To perform the interviews, a semi-structured report was used, with open questions, individually applied, "in loco", in an isolated way, in order to map out and understand the organizational structure, to scale down the productive capacity and identify existing products and processes.

In addition to the interviews, documents such as budget, Income Statement Result (ISR), Balance Sheet (BS), cash flow statements, inventory report, monthly sales and forecast, cost estimate spreadsheet were analyzed. "Performance" meetings were also attended where the company's commercial and financial sectors were analyzed monthly and board meetings as well. The entire data collection process took place between January and July 2017.

Through the interviews and documentary analysis it was possible to analyze the current structure of the company management and therefore, for better organization, the content analysis categories selected for the present study, in agreement with the topics presented in theoretical framework, are shown in Figure 3.

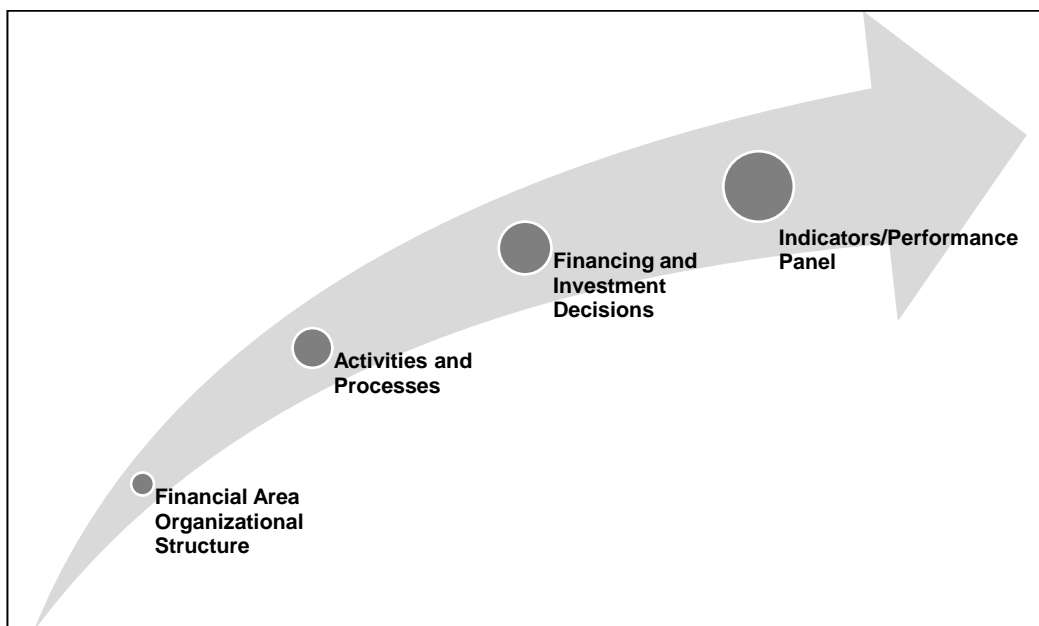


Figure 3 – Analysis Categories.
Source: Elaborated by the authors.

The 2nd stage consists in the realization of the company's diagnosis, comparing the existing processes to the studies presented by Santos (2015), Lukason et al. (2015), Assaf Neto (2014) and Martins et al. (2015). Thus, a framework was elaborated with the proposed actions (diagnosis) for the adequacy of the processes.

A performance panel comparing the company's indicators to the industry average and Benchmark allowed the analysis of the Organization's financial performance (3rd stage).

Finally, a prognosis was presented (4th stage) in order to optimize the financial management process, contributing to business longevity.

4. RESULTS AND DISCUSSION

In this section, the company and the four stages of the financial organization process systematization will be presented.



4.1 The Company

The investigated company is headquartered in São Paulo state countryside. It has a subsidiary in the state of Pernambuco. It was constituted by an agronomist and local farmer in October 2008, with its own headquarters that houses the Central office and the distribution center.

In 2013, it expanded its physical structure by manufacturing its own products. In the same year, he also opened up a laboratory for agronomic analysis.

In 2014, a new partner joined the company, who now is the Director of Operations and Finance. He is currently the Board Chairman, while the founding partner is the President of the company, as well as the Commercial and Production Director.

Specializing in plant nutrition, with more than 60 products in its portfolio for soil and foliar application, including a certified line for organic farming. Most of the products are manufactured by the company, from imported and domestic raw materials. There is still a small imported amount ready for distribution.

In the year 2016, the company presented a portfolio of 257 customers, amongst them are resellers, cooperatives and direct consumers, commercializing their products in 17 Brazilian states and the Federal District.

There had been a rapid growth of the company. Revenues increased 12 times from 2009, with revenues from R \$1.7 million to R \$20.4 million (nominal values) in 2015. However, after such growth, the company suffered a significant drop of 32% between 2015 and 2016, ending the year with revenues of R \$13.7 million.

The company has an organizational structure which financial area, holds accountable the chief financial Officer (CFO), who takes charge of the entire administrative area. In addition to centralizing the typical functions of the area, such as Controller, Financing and Treasury divisions, it also encompasses the HR, Legal and General Service sectors.

The Controller department, in addition to Accounting and Financial Management, comprises the Information Technology (IT) section, Commercial, Warehouse, Planning and Production control (PPC).

Funding and imports transactions are the Treasurer's accountability. Despite presenting an organizational structure with the Controller Department apart from the



Treasury, as emphasized by Gitman (1997) and Ross et al. (2002), in practice, this does not occur, once the owners centralize the decision-making process, as Presented by Almeida and Wernke (2018), Alves, Silva, Tavares and Dal-Soto (2013).

4.2 Data Gathering

Subjective information was obtained through performed interviews and observations of the company's daily routine. This information, obtained in the interview, is of crucial importance for evaluating the management processes degree of maturity present in the company.

It is a consensus among the interviewees that the company organization chart is changed frequently, with changes in positions, functions and also people, without an efficient structuring, as presented by Antonik (2004).

The analyzed reports show high values invested in inventories (23% of the circulating assets) and receivables (47% of the circulating assets) due to the term sales and seasonality periods, influencing the cash and forcing the company to get in debt by borrowing money from the bank, confirming what was presented by Martínez-Sola et al. (2014).

The owner states, in response to the interviews, that the biggest difficulty faced in recent months by the company is the reduction of revenues. This fact could also be observed by evaluating the company's reports.

One of the biggest difficulties faced by the company on this topic mentioned by him, in meetings and interviews is related to information, or rather the lack or quality thereof. Stating that this problem

(...) drastically affects the company's working capital management, to the extent that without the correct cash data, inventory, payable and receivable accounts, it becomes very difficult to make adequate planning and correct management of working capital.

The interviews revealed difficulties in the working capital management, a factor of great representativeness in the annihilation rate of the SMEs as presented by Santini et al. (2015). This finding reinforces the empirical work presented by



Panucci-Filho and Cherobin (2011). It is observed that the working capital management is accomplished intuitively, which according to Orobia, Byabashaija, Munene, Sejjaaka and Musinguzi (2013) is natural for small businesses, although not desirable.

The seasonality of sales is responsible for the major challenges encountered in the working capital management (Zouain et al., 2011). The company's invoicing takes place twice a year, the first in May and the second in September. As observed in the work presented by Pimenta E Silva (2017), to mitigate the effects caused by seasonality, we use the advance of receivables and credit lines with drafts and bank guarantee, increasing the levels of inventories and receivable drafts, as described by Zouain et al. (2011).

It is important to emphasize that, with the reduction of the revenue flow, there is an extension of the financial cycle, due to the storage average time and the invoicing average term (IAT) will be longer. In fact, they will extend the need for working capital, which should be financed with long-term sources, forcing the company to resort to short-term revolving credit (Assaf Neto, 2012).

Alves et al. (2013) argued that one of the biggest challenges faced by small companies is to predict changes in the market and anticipate them. Therefore, the biggest difficulty faced in making the cash budget was the elaboration of the sales plan in relation to its volume and payment terms, in consonance with the empirical work presented by Panucci-Filho and Cherobin (2011).

It was also found that inventory planning is carried out according to the quarterly sales forecast provided by the commercial department. A high value invested in inventory was found due to unrealized sales. This raises the need to improve sales forecasting to optimize inventory and production planning, as pointed out by Ivanovich and Viktorovna (2016).

Inventory management is based on intuition, as presented by Pillai (2014), inexistent tools that optimize the cost of storage as proposed by Mokhtari (2018). According to interviewees, there is a high level of inventory depending on items with minimum purchase of imported raw material that due to costs and replenishment time require larger orders.

Another important finding is the absence of the rate of return calculation required by the capital owners, which according to Assaf Neto (2014) is fundamental



for the financial administration of a company, making it impossible, essential calculations such as NPV and IRR.

The lack of planning for investment decisions is evident since there are no tools to evaluate the results of the investments made. As presented by Moreira et al. (2013), it was found that the accounting statements are treated as a mere tax obligation, hence, it was also possible to observe the absence of financial indicators, reinforcing what was presented by Leoneti, Nirazawa and Oliveira (2016), Vogel and Wood Jr. (2013) in relation to the difficulties of SMEs in using traditional performance indicators.

Similar to the empirical work presented by Jones and Jacinto (2013), the survey of the data presented contributes to diagnose the financial state of the company into account, thus allowing diagnosing it in order to keep it solid in the market.

4.3 Diagnosis

From the results found through qualitative evaluation, Figure 4 summarizes the main opportunities for improvements with their respective proposals for actions.

Improvement Opportunities	Action Proposals
Organizational Structure	<ol style="list-style-type: none">1. Separation of Financial Department from other areas of the Administrative Division2. Target the Controller Department of the Treasury in practice, as it is in the organization chart3. Establish a definitive organization chart based on functions to be performed
Management of Working Capital, Planning and Control	<ol style="list-style-type: none">1. Adequacy of information, regarding its quality and time2. Use of financial indicators
Capital Budget	<ol style="list-style-type: none">1. Separating the cash generated by the variation of investments and financing2. Improve the quality of revenue forecasts and costs
Accounts receivable Management	<ol style="list-style-type: none">1. Seek greater diversification of regions, cultures and customers2. Better distribution of deadlines and revenues3. Seek new credit alternatives with customers
Inventory Management	<ol style="list-style-type: none">1. Need for better inventory planning2. Improve sales forecasting3. Evaluate the use of inventory management tools such as the ABC system
Financing and investment decisions	<ol style="list-style-type: none">1. Define the rate of return required by capital owners2. Implement in-company models for valuation and selection of investment alternatives



	3. Carry out calculations of the costs of equity, third parties, total and financial leverage degree
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Figure 4 – Summary of Opportunities for Improvement and Proposals for Actions.
Source: Elaborated by the authors.

The diagnosis (2nd stage) was initiated from the organizational structure of the financial area. Considering the particularities (and limitations) existing in the organization and directing to proposals for necessary actions, and backed up in literature review, a new organization chart model is presented in Figure 5.

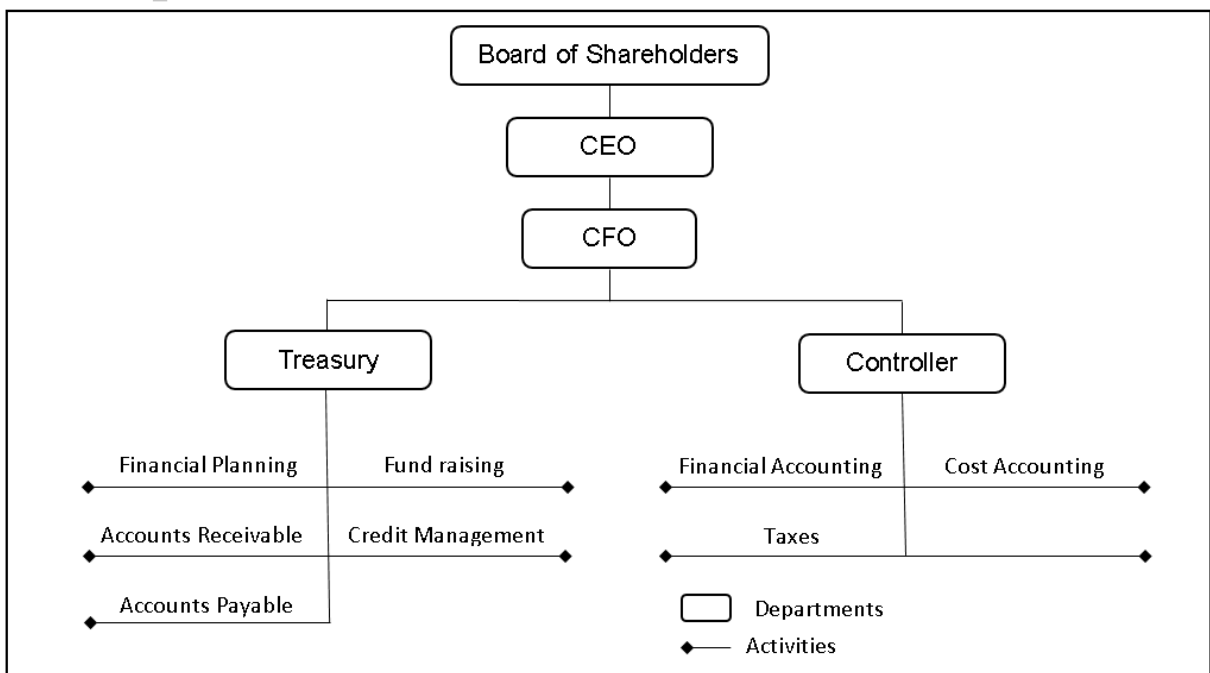


Figure 5 – Proposal for Financial Department Organization Chart Model
Source: Elaborated by the authors.

The financial area of the company is formally divided between Treasury and Controller. In Treasury the activities of financial planning, fund raising, cash management and credit are concentrated. The controller department deals with taxes, accounting (financial and costs) as well as data processing.

The Division of tasks follows the model proposed by Mintzberg (2003). It was divided among the main organizational functions, providing basis for managerial action (Marin-Idarraga, & Cuartas-Marin, 2013) from the segregation of activities and according to their characteristics and need for resources (Daft, 2003).

Despite the existence of a departmentalized structure that regards the creation of performance metrics by areas, some departments are treated as activities. Thus, it



maintains a lean structure as demonstrated by Gonzalez-Loureiro et al. (2017) and a shorter decision-making process, according to Reis et al. (2018). This assertion becomes essential for SMEs where resources are limited.

With the departmentalization and segregation of activities it is possible to analyze the expenditures by department, allowing therefore, a greater management of themselves and hence, the cost budget and expenses become more assertive.

Despite the challenges imposed by seasonality in the working capital management as presented by Zouain et al. (2011), their effects are mitigated by a cash budget that considers the sales budget as a function of the crop cycle (concentrated in two periods of the year – May and September) and also the cost budget which suits to this particularity better will allow a more effective monitoring of the business as presented by Maduekwe and Kamala (2016).

Through the diversification of new customers and new markets, we seek a better management of receivables with the distribution of sales deadlines and periods of revenue minimizing the effects presented by Zouain et al. (2011) in which the company is obliged to carry out the advance of receivables and credit lines with drafts as collateral, increasing the levels of receivable drafts and inventories.

The demonstratives have significant values allocated in inventory; thus, its management is linked to the sales budget, with monthly adjustments due to performed sales, aligning the inventory level with the market need.

To ensure inventory accuracy, the same process was classified according to the ABC criterion as presented by Iqbal et al. (2017). The use of the ABC system enhances the company's inventory control, prioritizing the most valuable items and the procedures necessary for its control (Gitman, 1997). It is understood that the greater inventory accuracy, more precise the resupply deadlines control and sales budget monthly monitoring are sufficient to equalize the inventory levels.

As presented by Nascimento (2013), the calculation of the rate of return required by capital owners is fundamental for both investment and financing decisions.

For the K_e calculation, the CAPM model was used as presented by (Assaf Neto, 2014). For the risk-free assets (R_f) rate of return it was considered 11.13% referring to the CDI from May 23, 2017. The market prize was considered a value of 6%, average of the sector.



The beta coefficient (β) was determined through the analysis of companies in the fertilizer sector and the chemical industry. For the value of β (deleveraged) 0.47 was used for the sector average. This value was obtained on May 23, 2017 referring to the last three years with daily variations.

The value of 13.95% was obtained for the Cost of Equity for the company. In sequence, it was possible to calculate the Total Cost of Capital through the WACC formula presented by Assaf Neto (2014), obtaining the value of 19.24%.

Table 2 shows the financial indicators calculated for the company. The selection of indicators for the Performance Panel was based on the model proposed by Santos (2015), Lukason et al. (2015), Assaf Neto (2014) and Martins et al. (2015), counting on indicators of income derivable from labor/capital, profitability, cash generation, indebtedness and liquidity.

PAINEL DE DESEMPENHO

Categories	Indicators	Periodicidade	Target ^a	2016	Sector ^b	Benchmark ^c
Profitability	RROI	Year	##	-33.7%	-53.0%	2.0%
	ROI	Monthly	##	-14.5%	-3.4%	13.6%
	ROE	Monthly	##	-31.1%	-45.9%	26%
Profitability	Gross Margin	Monthly	##	66.4%	18.2%	43.6%
	Operating Margin	Monthly	##	-0.04%	5.1%	63.9%
	Net Margin	Monthly	##	-22.5%	-6.9%	31.6%
Cash Generation	EBTIDA Margin	Monthly	##	-0.04%	10.1%	76.2%
	Asset Turnover	Monthly	##	54.0%	138.3%	320.0%
	Revenue Growth	Year	##	-32.7%	4.0%	14.8%
	Interest Coverage Capacity	Monthly	##	-0.002	0.5	4.3
Debt	General Debt	Monthly	##	55.2%	29.3%	7.9%
	Short Term Debt	Monthly	##	57.4%	59.0%	21.7%
	Financial Leverage	Monthly	##	2.1	0.8	n.d. ^d
Liquidity	Current Liquidity	Monthly	##	1.8	1.7	3.4
	Need for Working Capital	Monthly	##	1.2	0.1	-0.3
	Short Term Financial Balance	Monthly	##	0.6	0.1	0.62
	Shear Effect Coefficient	Monthly	##	-0.6	-0.04	0.1
	Average Storage Term	Monthly	##	373.1	91.9	14.1



Notes: ^aStill to be defined; ^bAverage of six companies in the Chemical Industry sector registered at BOVESPA, two of them are from the Fertilizer Industries, which are the companies Fertilizantes Heringer S. A. and Nutriplant Indústria e Comercio S. A.; ^cBest value observed among all companies in the Chemical Industry sector. ^dNo data available.

Table 2 – Performance Panel.

Source: Elaborated by the authors.

4.4 Analysis

Based on presented results in Table 2, it was possible to carry out an analysis of the financial situation of the company (3rd Stage), comparing it with other companies in the sector and with the Benchmark. We used the sector average results and benchmark as a way to evaluate the company before the market peers in regard to what was presented by Maté-Sánchez-Val et al. (2017) in which SMEs with financial indicators far from their benchmarks incur in costs for being unbalanced.

From the Gross Margin, it was observed that the company has proportionately lower costs compared to others, which gives it a better result. On the other hand, its Operating Margin is below the sector, suggesting that the result is being compromised by a higher level of operational expenses (administrative and commercial). This result is aggravated by financial expenses, reducing the Net Margin to levels below the sector.

With a negative Operating Margin, its reflection will be extended to the Residual Return, Return on Equity and Return on Investment. With such result, there are no resources for financial expenses payment, implying an inability to cover interests, forcing financial expenses to be paid off from new debts, increasing debt as noted on general and short-term debt indicator.

Short-Term Debt represents more than half of the total debt, compromising the cash management and the company liquidity that, according to Matias (2007), the company presents the shear effect. Consequently, it uses costly short-term credits to finance its Need for Investment in Working Capital (NIWC), making its businesses dependent on these liabilities maintenance (Assaf Neto, 2012).

According to Matias (2007, p. 41), overtrading (shear effect) "means the act of doing business above the Need for Working Capital financing capacity resulting from these businesses".



The company has a desirable LC index (> 1) according to Assaf Neto (2012). However, this effect stems from a high working capital due to accounts receivable and it is powered by the inventory low turnover against the average standard industry and the benchmark. As inventories turnover is low, the asset turning is also low, implying a lower revenue generation towards its potential.

Likewise, Short-Term Financial Balance appears to be at an optimum level in relation to benchmark. However, this value also comes from the high working capital of the company invested in circulating capital, but with low turnover, again evidenced by the Storage Average Term.

Forte, Barros and Nakamura (2013) found strong evidence about financial leverage in Brazilian small and medium-sized companies, showing that there is an inverse relation between profitability and the degree of leverage of an SME.

The Value presented by the Financial Leverage was 2.1 which would represent an exceptional return for shareholders, that does not occur in practice, since both ROE and ROI are overdraft. Therefore, the debt cost is higher than its return. Assaf Neto (2014) shows the Financial Leverage calculation by dividing the return on equity (ROE) by return on investment (ROI), i.e., Financial Leverage = ROE/ROI .

4.5 Prognosis

From the analysis of the performance panel, it is recommended to re-evaluate the company's inventory sizing. The high level of inventory associated with a low turnover contributes to the company's decapitalization. This revaluation occurs through increased inventory accuracy and precise control of the resupply deadlines linked directly to the sales budget.

The inappropriate sizing of inventories, in addition to influencing the Storage Average Term, which, coupled with a high Invoicing Average Term, also implies a very extensive operational cycle. Consequently, the NWC (Need for Working Capital) expands, and the company tends to be financed with short-term resources (Martins et al., 2015).



In the same way, there is the need to reassess the sizing of administrative and commercial expenses in order to adjust them to the industry standard or benchmark. It is essential that the company decrease its operating expenses so that it can achieve better results.

Working Capital also needs to be reassessed, and it is necessary to replace short-term debts for long-term debts by renegotiating with lenders. The focus is also on the Treasury balance (TB) redesign, once, being positive the need for working capital of the company, its TB should also be positive, as presented by Assaf Neto (2012).

It is also noteworthy the importance of underutilized assets identification (investments) in the company and that they have the ability to generate revenues or to be sold, thus allowing a surplus generation of revenues.

Figure 6 shows the steps, consolidating the 4 phases previously presented.

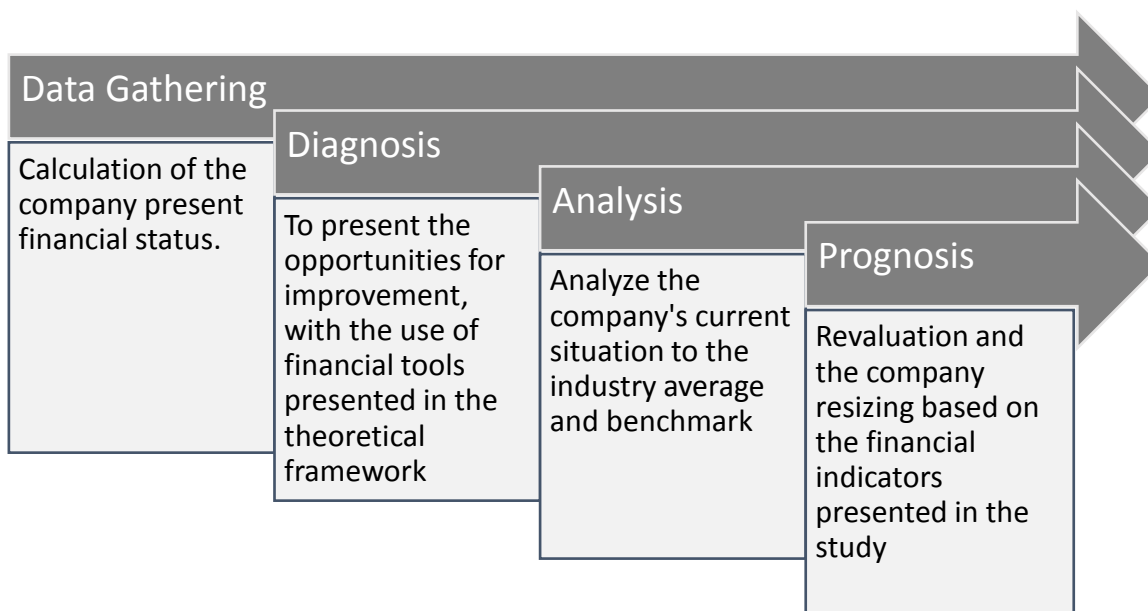


Figure 6 – Consolidation of the 4 phases presented

Source: Elaborated by the authors.



Figure 6 summarizes the steps of "how" a small business can build its financial management model, based on data collection, the current situation diagnosis, information analysis and prognosis.

5. FINAL CONSIDERATIONS

The motivation to accomplish this work was to elaborate a model of financial management applied in a small/medium-sized company located in the countryside of the state of São Paulo, in order to understand how to organize and manage the company financial area, amalgamating a process divided into 4 stages (information gathering, diagnosis, analysis and prognosis).

Based on the internal collection of information and backed by the theoretical Framework (1st Stage), the diagnosis of the current situation of the financial administration of the mentioned company was carried out (2nd Stage).

It was found a lack of proficiency in the management area, which is a characteristic of most of Brazilian companies of the same size. In this sense, an organization chart was assembled with departments and activities that fit the characteristics and needs of SMEs.

It was presented as a "Performance Panel". The aim was to present the company's real financial situation (3rd Stage), ratifying the information obtained from the interviews and other sources.

These indicators show that the company has a large bottleneck in its administrative, commercial and financial expenses that end up consuming its entire result. This entails a situation of high debt, low liquidity and shear effect.

Based on this information, the manager may adopt measures that make it possible to remedy the processes that do not present the desired results, adjusting the indicators of profitability, profitability, cash generation, debt or liquidity, once,



knowing each component of the indicator, it is able to manage them in order to bring them closer to benchmark, acting proactively towards management strategies (4th Stage).

Additionally, the work presented the importance of using a structure of indicators, a management system operating correctly with quality information, thus allowing to thoroughly evaluate all investment alternatives.

The researched literature presented several indicators besides those exposed in this work. However, for the specific case here dealt with, taking into account the size of the company and its limitations imposed on the fertilizer segment, which is characterized by large companies' strong competition and influence of macroeconomics variables, it is understood that the indicators proposed herein are sufficient to enable the best monitoring and analysis of the company financial and economic reality.

Thus, the work presented, in practice, a guide on how to organize and manage the financial area of a small business, developing indicators in order to allow an efficient management of financial resources, increasing their chances of perpetuating in the market.

This research is focused solely on a small and medium-sized company in the fertilizer segment. As a way of continuing this work, it is suggested that new studies be conducted in SMEs, comparing companies of the same sector and also of different sectors so that it is possible to obtain and compare information, and thus, to seek solutions that are more appropriate to such undertaking.

It is worth noting that these contributions and conclusions are contributing to the literature of SMEs with techniques that improve of companies competitiveness in the sector, or even indirect contributions, such as the creation of jobs and income for families linked to this very sector were proposed specifically for the company in question and therefore may not be ideal in other cases.



Similarly, the temporal question of work is emphasized, when the results are based and valid only for the period in which the information was collected, therefore limiting the present study.

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