Business intelligence as a supporting tool for management accounting

Business intelligence como ferramenta de suporte para contabilidade de gerenciamento

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ABSTRACT
Used as a tool for decision making, Management Accounting has great importance in the management of organizations, as it is through it that economic and financial information of the company reaches the responsible manager. However, with an increasingly competitive job market, the need to maintain rapid and intelligent
management becomes essential to the success of a business, so Information Technology is a great asset to narrow the path among those seeking and access if you want to arrive. The objective of this paper is to activate the importance of Management Accounting, proposing the use of the Business Intelligence method as a support tool, facilitating the answers, analysis and data organization. This research is characterized by bibliographic, descriptive and qualitative, where its development was focused on a demonstration of the use of the BI tool in a cash flow spreadsheet, in order to project a closer contact with the procedure and result. proposed by the tool. You can conclude how important is the importance of synergy between business sectors, the accuracy of the information and the need to know your business, to know where you can intelligently get to make use of the tool and collected information.

**Keywords:** management accounting, business intelligence, information technology, decision making.

1 INTRODUCTION

Opening a business is a risky activity. In the midst of changing market conditions, more than ever, planning is needed to reduce the chances of failure in your investment. In the last decades, the business environment has undergone great changes due to the increase in competitiveness and the emergence of new technologies, making its
management more complex (GUERREIRO et al., 2007). According to IBGE (2017), the total number of companies active in Brazil was 5 million in 2017, the worst result since 2010, when it totaled 5.1 million.

According to a survey carried out by the Brazilian Micro and Small Business Support Service SEBRAE (2016), the causes of company closings are quite diverse. Among the most cited, high taxes, low demand, financial problems and administrative and accounting problems. On average, 25% of companies close their businesses due to deficiency in management, administrative or accounting problems, disability, society and logistics. According to Souza et al. (2003), this is caused by the increase in management complexity and results in greater needs and requirements regarding the management of companies, especially in the planning, execution and operational control procedures.

According to Marion (2008, p. 23), “accounting is the great instrument that assists management in making decisions, as it collects all economic data, measuring them monetarily, recording them in the form of reports, which contribute to making decision-making”. With this, the accountant takes an even more important form than the most common views, being a source of tax information, becoming a fundamental part in the analysis and decision process of the administrator within the company. It is the Management Accounting who identifies and informs the economic and financial situation of the entities. Crepaldi (2008) considers that management accounting is a branch of accounting that aims to provide instruments to company administrators to assist them in their management functions.

However, for the administrator, the financial statements sometimes become complex and difficult to understand, and are no longer used to their full potential. For Stroehrer (2005), the lack of understanding of accounting logic often turns the financial reports prepared by the accountant into a mere fulfillment of legal obligations, instead of supplying the administrator or the owner with useful information for the decision-making process. For this reason, it is extremely important that the form of communication between the areas is as clear as possible, using tools that consolidate the data in a way that allows a better analysis by the professional responsible for identifying the information and using it.
With this, more than ever, there is a need to combine Management Accounting with strategic planning. Business Intelligence (BI) is a methodology that uses technology as a tool in order to use information obtained in the company in a way that assists administrative and strategic decision making. According to Primak (2008), if implemented correctly, BI becomes a “gold mine” for the company, as it helps in the most different situations, such as decision making, work optimization, cost reduction, elimination of duplication of tasks, foreseeing the growth of the company as a whole and contributing to the elaboration of strategies.

Based on this, the objective of this work is to highlight the importance of management accounting in conjunction with Business Intelligence, punctuating tools that facilitate the interpretation of the administrator responsible for receiving accounting data, translating the information in a way that the interpretation is simple and facilitates the decision making process. In addition to this, also assisting new entrepreneurs in the implementation of these methods that simplify data visualization, analysis, organization to better manage their companies, identifying opportunities, problems and points for improvement within the company.

2 THEORETICAL FRAMEWORK
2.1 MANAGEMENT ACCOUNTING

Management accounting is the set of processes that identifies, measures, analyzes and communicates financial information that will be used by management in planning and controlling the company, thus ensuring that its resources are used appropriately (PADOVEZE, 2012). Basically, it informs necessary data for the administrative sector in order to identify and interpret each one of them in the best way.

On the other hand, Management Accounting discloses its information to managers of the organization in order to assist planning, control and decision making. It emphasizes decisions that will affect the future, relevance, segment-level reporting, among others. This is not mandatory. Crepaldi (2008) adds that the use of accounting information as a tool for the administrator is the fundamental point of Management Accounting. However,
it is necessary to direct the process of producing financial operating information according to the information needs of the company's internal individuals.

He also complements that for this structure to be adequate, it is necessary to refer to three financial statements: the balance sheet, the income statement and the cash flow. These must be complemented with other financial statements, some of which are mandatory for legal and tax purposes (PADOVEZE, 2012).

2.2 BASIC FINANCIAL STATEMENTS

Thus, for Padoveze (2012), for the purposes of Financial Accounting, the traditional Accounting statements are the Balance Sheet, the Statements of Income statement, the Statements of Accumulated Profits or Losses, Statements of Changes in Stockholders' Equity and the Explanatory Notes.

According to him, the Balance Sheet is the most important accounting statement, since, in theory. Using the national currency as a measurement standard, the Balance Sheet has the function of demonstrating the company's equity situation on a specific date, where it presents its assets, liabilities and its net worth (MEDEIROS, 2009).

The Statements of Accumulated Profits or Losses shows the changes made to the balance of accumulated profit or loss accounts, within Shareholders' Equity. In accordance with article 186, § 2 of brazilian Law No. 6,404 / 76, this statement “must indicate the amount of the dividend per share of the share capital and may be included in the statement of changes in shareholders' equity, if prepared and published by the company." The Statement of Changes in Equity is not mandatory, but, as it is complete, it is extremely important for the companies that use it, as it demonstrates the movement of all equity accounts in a given period, also helping in the preparation of the cash flow (SALES AND CORREIA, 2014).

The Explanatory Notes, in turn, in addition to being important, are of great need for analysis of the financial statements, as they aim to provide transparency, transmitting analytical details of several accounts that present synthetic values, being responsible for detailing some complementary information that was not placed in other statements (CHING, MARQUES AND PRADO 2010).
2.3 CASH FLOW

According to Almeida (2000), in an operational way, Cash Flow is the record of financial transactions in the business. It is a process of circular movements, where the company uses cash to produce goods, services or receipts. This is documented by the Cash Flow Statements that inform a general position of the moment of the company's life, based on an analysis of the relative proportions of each section of the same.

Thus, the main objective of the cash flow is to project, through the inflow and outflow of financial resources in a given period (which may be day, week, month, quarter, etc.), the need for a strategic movement that provides a balance in cash flow, such as taking out a loan or investing a balance. This is because, from the knowledge of past movements, it is easier to project for future movements, thus having a basis of how the company behaves (PIVETTA, 2005).

Still according to Pivetta (2005), cash flow also aims to facilitate the due dates so that there are no delays, visualize and manage the account balance in the best way, being able to create a fund for eventual needs and / or, in case of high balances, investing in a way that does not hinder its flow, seek balance between cash inflows and outflows, as well as analyzing in the best way and in a timely manner the need to search for more advantageous credits, among others. This is because, with a well-structured cash flow, it is possible to have a short and medium term view on the company's performance, being able to increase the efficiency in its planning through statistical data, giving the capacity of decision making faster in any difficulties or opportunities.

2.4 ACCOUNTING AS AN INFORMATION SYSTEM

In addition to being a legal issue, accounting is essential for decision making. However, in search of effectiveness, other methods are needed to facilitate this process. In this way, the Information System promotes this facility, as “it is a set of interrelated components (human, material, technological and financial) that collects, processes, stores and distributes information for decision making”. In this way, Accounting is characterized as an information system, where, through its financial data, informed by
financial statements to those interested (whether internal or external), it supports and assists in decision making (MONTEIRO, 2013, p. 21).

Even though it is not so clear, it can be said that Accounting, in the beginning of the evolution of accounting science, was born as an information system. In the managerial sphere, the integration between them becomes extremely important, since Management Accounting uses various data and information from other systems, in order to complement its reports and make them effectively useful for the decision-making process. It can be defined basically as the information system that controls the equity of an entity (PADOVEZE, 2012).

Silva and Cordeiro Filho (2015) affirm that the basis of the entire process of control, evaluation and strategic planning of a company is the Accounting Information System. For Monteiro (2013), Accounting is one of the main sources of information for those known as stakeholders (investors, employees, financiers, suppliers, customers, government, etc.). For this reason, it must contain a series of requirements: Objectivity, dealing with facts in themselves, without personal influence or interpretation; Intelligibility, transmitting information so that it can be interpreted; Relevance, it should be useful for the purpose itself, in this case, decision making; Opportunity, linked to availability; Profitability, being financially viable, so that the information does not have a higher cost than the benefit of using it; and Credibility, it must contain reliable data for those who use them.

2.5 INFORMATION MANAGEMENT

With an increasingly competitive job market and having much more advanced technologies, improvements in the availability of information and speed in changes in the area, which are developing rapidly and globally, are notable. More than ever, for companies to survive, it is necessary to keep up with these changes, improving their capacity to capture, absorb and solve the demands needed in this new environment (TAPSCOTT, 1997). For any organization's decision-making process, it is essential to manage information strategically, in a way that favors not only the company's survival, but also its organizational competitiveness. It is then that Information Management
appears with the responsibility to manage both internal and external resources to the organization (SILVA, 2007).

Moscove, Simkin and Bagranoff (2002, p.22) understand that "the company's success or failure is linked to the way information is managed and used". For Marchiori (2002), aiming for a future of his business, the professional responsible for managing this information must follow a continuous process in order to optimize it, having creativity in the creation, selection and evaluation of it, also managing and disseminating it in a way that achieves the outlined goal. This professional performs some fundamental activities for the management of processes, some of which are the identification of quality information used strategically for the success of the proposed business, personalizing the presentation of this information; the use of information systems in order to make them more attractive and interesting for the recipient; the development of a critical and analytical sense in order to understand the need and problems in information; and the administration, through information technologies, making an analysis of costs and quality.

2.6 INFORMATION TECHNOLOGY FOR MANAGEMENT

According to Rezende and Abreu (2002), Information Technology (IT) is a set of computational resources that has the purpose of generating information and knowledge through its manipulation. It consists of software, hardware, telecommunications systems and management of data and information. This tool is of great value to facilitate business management.

For Jerónimo (2011), there are two major groups of software for investment in IT systems, those aimed at improving some operational process of the business and those whose purpose is to improve information management and support decision making.

However, for the computerization of organizations' processes, in most cases, there are high costs and time demands, in addition to changes in the organizational structure that suffer strong cultural resistance, not always guaranteeing a satisfactory result, according to countless reports, both abroad and in Brazil (AUDY et al., 2000). So that this does not happen, it is necessary to initially know the economic reality of the company,
making an analysis of its real need and strategy, so that in fact it is used as organizational intelligence (REZENDE E ABREU, 2002).

2.7 BUSINESS INTELLIGENCE

According to Marius, Aref and Bilal (2009), the main objective of Business Intelligence (BI) is the union of data and information from different sources in order to facilitate knowledge, responding more clearly and quickly to the organization's needs. Thus, in addition to being able to format their own statements and spreadsheets, the user can also cross them with others of interest, in order to obtain a more complete analysis and in search of a better result from their use (MCGEEVER, 2000). This also makes it possible to create new information, sometimes fundamental, facilitating an increasing need of the organization: quality decision making. (CHAUDHURI; DAYAL; NARASAYYA, 2011).

Through the BI tools, it is possible to have a systemic view of the information in a way that facilitates the uniform distribution of the data among the users of the same, compiling large amounts of data in clearer and more useful information in decision making. Based on that, it is possible to cross-check data, view information in countless dimensions and analyze performance indicators (BATISTA, 2004).

According to Watson and Wixom (2007), the BI capacity has the role of transmitting agility to the entire organization, identifying and responding to changes in the company's internal and external environments quickly. However, consistent and reliable data sources are necessary, since it is through these that consultations, reports and application of strategies within the business will be made. In addition, according to Aristizabal (2016), the advancement of technologies has created, many times, the accumulation of information for the administrator, which ends up causing an overhead when it comes to interpreting and using the data. In this way, BI systems have been of great importance, since they help to compile information in a way that makes it more useful for the decision-making process.
3 METHODOLOGY

The purpose of this chapter, in the first instance, is to classify the research according to its procedure, approach and objective. The stages used for the development of the project will also be punctuated, as well as its chronological order. Finally, there is the study of the tool used and suggested to solve the exposed problem.

3.1 RESEARCH TYPE DEFINITIONS

The present work, regarding its procedure, had, as its main source, data from bibliographic studies, aiming at understanding the problem to be studied and concepts linked to it. The bibliographic research presents the initial idea that guided the investigation of the theme and analysis of the proposal. According to Lima and Mioto (2007), it “implies an orderly set of procedures for searching for solutions, attentive to the object of study, and which, therefore, cannot be random”.

As for the approach, this research can be defined as qualitative, as it is concerned with aspects of reality that cannot be quantified, understanding and explaining the dynamics of social relations (GERHARTDT E SILVEIRA, 2009). According to Neves (1996), qualitative research, in the course of its development, seeks to be directed, obtaining descriptive data through interactive contact with the researcher, who seeks to understand the phenomena presented in the studied situation and then situate his interpretation of this perspective.

The research was characterized, as to its nature, as descriptive, because, according to Gil (1999), it has as main objective to describe the characteristics of certain groups as well as to understand the establishment of relationships between the variables and, still, according to Andrade (2002), it is intended to observe, record, analyze, classify and interpret the data obtained. In addition, according to YU (2011), descriptive research is based on observing the real situation of organizations and professionals as a decision source, considering that their choices are made by the influence of the environment where they are driven by rationality, behavioral and cognitive biases and their intuition.

The methods of this research were divided into stages, in order to simplify the understanding of the processes used to develop it. These are: 1) Literature Review; 2)
Development of Cash Flow Spreadsheet; and 3) Application of the BI tool. Each stage was subdivided, with the purpose of detailing.

In the first phase, a literature review was carried out, with the objective of identifying the methods used for management in management accounting, in an attempt to understand the advantages of using the BI model. This review was carried out through bibliographic searches in books, magazines and articles related to the topic. In a second instance, the most well-known BI tools were also studied, in order to classify the most suitable for the job in question.

In the second phase, several cash flow spreadsheets were selected with a medium or low degree of complexity, since the objective of the study is not the spreadsheet itself, but that they were capable of transmitting common accounting data and making the presentation of the tool of clear BI of understanding. The chosen spreadsheet was adapted in this way, to be as objective and simple as possible. Thus, fictitious data were transmitted, with the intention of approximating the reality of a small company and visualizing the planning and carried out there.

In the third phase, the most appropriate tool for the proposed objective was chosen, taking into account accessibility, cost, method of use, communication, among others. The search for choice was made through the Gartner website, where the most used tools and numbers of users are found, including their comments on the characteristics, expectations and realities of the implementation, verifying facts experienced according to the use, strengths and weaknesses, problems and deficiencies. From this, choosing the tools closest to the need of the proposed problem, they were individually studied in order to extract more information about them and thus opting for the most assertive.

After choosing the program to be used, tests and readings on its handling were made in order to simplify the use and interpretation of the data exposed there. For that, it was necessary to treat the cash flow Excel spreadsheet, changing some basic format and accent settings, thus being compatible with the chosen program. From this, some relevant information from the statement was punctuated in order to make the information and the choice of the colored design and graphics of different models relevant for a more attractive presentation. After these procedures were carried out and the indicators were
applied, a tutorial was developed in order to exemplify and explain the process, thus presenting the final result, as proposed.

The development of this research will focus on the presentation of a BI program based on a statement with hypothetical accounting data. For this, a study was carried out on books, articles and websites in order to discover the most appropriate tool for the proposed objective. According to Jerônimo (2011), the process of choosing a BI software is difficult, as it is influenced by several intangible aspects. Thus, the most important point of this decision process was to identify the need for the job, opting for a tool that was suitable for the objective in question. Initially, the intended needs were scored and related according to the BI methodology proposal and work development intentions, as shown in Chart 1:

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Need of the work</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accessibility</strong></td>
<td>Ease of access - As the work deals with a suggestion of BI implementation, the initial intention is to indicate a tool that is accessible to any user, allowing him to know the tool regardless of whether it is the moment of implementation or not.</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Low cost - BI tools are in different price ranges according to their complexity and purpose. The objective is to indicate a low-cost program to give greater security to try the implementation without any prejudice.</td>
</tr>
<tr>
<td><strong>How to use</strong></td>
<td>Simplicity in the way of use - For the implementation of the tool, it is recommended to hire a professional specialized in the IT area. However, the choice of the program in question was looking for something simple to handle, being able to give freedom to the administrator or professional interested in proposing its controls, whether individual or collective.</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>Expansion and sharing - Practicality was sought in sharing the data obtained, quickly and without information overload, since in many cases, important data from different areas of a business are not disclosed because they are heavy and complex spreadsheets, thus, not always used properly.</td>
</tr>
</tbody>
</table>

Source: Author (2021).

Thus, from the analysis of the considerations, we opted for the use of the Google Data Studio tool, in which the only necessary requirements for its use are to be connected to a Google account, to be in any of the supported countries, to have access to Google Drive (where reports are stored), accept the Terms of Service and Tool Policies and to
use one of the browsers: Google Chrome, Firefox or Safari. The considerations raised initially were met, as shown in Chart 2:

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Google Data Studio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>The Google Data Studio tool can be easily accessed by any user who has a Google account and is connected to an internet network. Just go to &lt;datastudio.google.com&gt;</td>
</tr>
<tr>
<td>Cost</td>
<td>Completely free, having as a means of accessing the Google account, which can also be done at no cost.</td>
</tr>
<tr>
<td>How to use</td>
<td>In addition to being easy to understand, the tool is self-explanatory, where, as the creation progresses, the necessary steps for it are made available. It also has a help center option found by the graph symbolized by a question mark, where you can type what you need and get an instant answer.</td>
</tr>
<tr>
<td>Communication</td>
<td>After the report is completed, the user has the options to download it, share it with someone or schedule its sending by email.</td>
</tr>
</tbody>
</table>

Source: Author (2021).

In addition to these features, the Google Data Studio tool also has the advantage of real time update, meaning that any changes made to the source spreadsheet can be modified automatically. In this way, by creating a standard model, at each necessary period, you can simply update the report, instead of having to search for data to generate a new one.

4 DATA ANALYSIS

4.1 REPORT CREATION

Initially, the data from the Cash Flow worksheet was added to the report. From this, the initial screen for creating the report will be loaded, automatically generating a table with some pre-selected data. If you do not wish to have a table in your report, just click on it and press the “Delete” button on the keyboard.

In point 1 is the Toolbar, located at the top of the screen. It contains options for adding graphs and controlling the report. In point 2, the Properties Panel, located on the right side of the screen. It contains the layout settings for the screen. In addition, when an element is added to the report, the settings for changing it will be available on that panel. And in point 3 of the figure, the Work Area, located in the center of the screen. It is the
space where the elements you want to create your report must be inserted. Generally, the first setting made when creating a report is to define how the work area should be displayed. The dimension and settings of the grid can be adjusted in the "Layout" tab, which is located in the properties panel. If you want to define the colors of the work area, click on the “Theme” tab and change it from the available options. Figure 1 shows the work area after these changes have been made.

Figure 1 – Theme election

Source: Author (2021).

To add an element on the screen, click "Insert" on the toolbar or "Add a graphic". When you click on one of these options, a list will appear showing the available elements. In this example, the first element that has been added is called the Overview, which presents a summary of a data source field.

When clicking on “Add a graphic” and selecting the Overview option, the element will appear on the screen, being necessary to click on the right mouse button over the work area for the element to be inserted. Having placed the element on the work area, Google Data Studio randomly selects a field from the data source, presenting a value in the overview. The configuration of any element that is added in the work area must be carried out using the options available in the properties panel. The first thing that must be done is to indicate which metric you want to see in that element. To do this, click on the “Accomplished” metric (which was defined by Google Data Studio to appear initially) and then select the option you want.

To modify the layout of an element, click on the "Style" tab, which is in the properties panel. By clicking on this tab, a list of options to change the layout of the
element will be opened, being possible to configure the font size, color, spacing, background color, among other options.

After finalizing the adjustments related to the design of the element, it was defined the place where the Overview should be. To do this, click on the element with the right mouse button and drag it to the desired place.

It is possible to add the same element as many times as needed. Figure 2 shows how the report looked after adding the necessary views.

Figure 2 - Editing Theme and layout

Source: Author (2021).

The second element added to the report was a pie chart. To add this graph, just follow the same steps performed to add the Overview. First click on the “Add a chart” button, then select the chart you want and, finally, right-click on the work area to insert the chart. In figure 3, we can see how the work area and properties panel look after adding the pie chart.

Figure 3- Inserting Pie Chart

Source: Author (2021).
When adding any element in Google Data Studio, it is necessary to make two types of configurations: define the data to be viewed and define the layout of the selected element. As in the configuration of the Overview, the definition of the data is carried out in the “Data” tab, which is located in the properties panel. For this chart, it is necessary to provide two pieces of information: the dimensions and the metric. The dimension represents the category of data such as names, descriptions or other characteristics of a given category. In the meantime, the metric evaluates the values of the dimensions, such as a sum, a count, or a proportion. In this example, the dimension chosen was “Medium Activity” and the metric was “Accomplished”. When choosing the dimension and the metric, the graph is updated automatically, being generated as shown in figure 4.

Figure 4- Configuring Pie Chart

![Pie Chart](image)

Fonte: Author (2021).

After defining the data, click on the “Style” tab to configure color, legend, font size options, among other options. Google Data Studio places each configuration option separately, just clicking on the option you want. As in the definition of the data, each changed option causes the graph to be updated. With this, it is possible to follow the behavior that the graph will have with the defined choices, being able to select several options until leaving it in the expected format. In this example, the location where the legend should appear was changed and a title was added, leaving the graphic. It can be seen that, after defining the data and the style of the graph, its size and the place where it should be in the report were adjusted. To put it in a place on the work area, just click on
the graphic with the right mouse button and drag it to the desired location. To change the size, click on the graph with the right mouse button and then move the mouse pointer to the corner of the graph, click with the right mouse button again and drag upwards, downwards or sideways, depending on the size the chart should be.

Another element that can be added to the report is the tables. The way to add this element and configure it is the same as used for the overview and pie chart elements. Thus, when inserting a table in the work area, the report should look as shown in Figure 5.

![Figure 5 - Inserting Table](source: Author (2021))

As with the pie chart, you need to define the table’s dimension and metric. However, in the table it is possible to add as many metrics as necessary, and each metric will be presented in each of the columns of the table. The dimension considered is that of the main column of the table, the other data being presented from the organization of that column. In figure 6, it is possible to see how the table looks after the data and style have been defined.

![Figure 6 - Configuring Table](source: Author (2021))
The last graph inserted in the report was the time series graph. This graph allows you to analyze information over a given subject over time. The way to add and configure this graph are the same as those presented in the other elements. In figure 11, it is possible to see how the graph looks when it is added to the work area.

Figure 7 - Inserting Time Graph

Source: Author (2021).

In this example, the dimension used was “Date”. With this it is possible to analyze the variation of important metrics throughout the year. Regarding the metric, as well as in the table, it is allowed to define more than one option. In this case, the chosen ones were "Planned" and "Accomplished“. When adding these metrics, it will be possible to see in what months the planned balance was below expectations. Figure 8 shows how the graph looked after all adjustments were made.

Figure 8 - Time Graph Presentation

Source: Author (2021).

To see how the report will be available, click on the “Preview” button on the toolbar. This button can be selected during the creation of the report to see if the graphs
are getting as expected. To return from the preview page to the editing page, just click on the “Edit” button on the toolbar. Figure 9 shows the preview screen with the report ready.

Figure 9 - Report View

![Report View](image)

Source: Author (2021).

The reports generated by Google Data Studio are interactive, presenting information when hovering over a graph, allowing the columns of a table to be ordered in another way, among other actions. It can be seen in Figure 10 that, by placing the mouse pointer over the graph, it is possible to analyze the exact value that that point represents.

Figure 10 - Report interactivity

![Report interactivity](image)

Source: Author (2021)

In addition to being able to view the information, if you right-click anywhere on the graph, some options will be available, such as downloading the data for that graph, for example. Observe the options available in Figure 11.
The Report was developed and edited in order to facilitate the interpretation and clarity of the information contained in the Cash Flow statement. In this way, with a neutral color background and colorful graphics, it illustrates the most relevant information in an interesting and didactic way, being able to be used by different areas of the company, having or not accounting knowledge, facilitating administration, control and, mainly, decision making.

In the first series of information inserted in the report, an Overview of the report was created, where some of the main data of the statement were exposed, being the current balance, revenues, personnel expenses and operating expenses, as shown in Figure 12:

Percentages were also included, illustrating with indicative colors how much of the plan was actually accomplished. In this way, it becomes clearer to know if what was set as an objective has been fulfilled. In the second graph, expenditure on operating expenses, including its percentage, was demonstrated, allowing both visual and numerical analysis of what is most needed to have money. The tool also offers the option of creating several pages, being possible to use them to detail each month or each item in particular.
In this way, an analysis can be made, comparing each consumption in relation to other months or years, illustrated with graphs or tables, thus allowing to know if the expenses of that period are in conformity with the others under analysis. The creation of the table in the report was intended to demonstrate the expectation and reality of the monthly balance through its planned and realized balance, as shown in Figure 13:

![Table Analysis](image)

Source: Author (2021).

With the table it is possible to identify whether the company is making the expected profit month by month. In the same way as the previous graph, the tool provides that it can be analyzed separately, in order to find where the deviation in the planning is. Placed in a small space, the table is available for expansion, easily navigating the pages directly in the table.

Finally, the insertion of the time graph aimed at demonstrating the movement of the balance, allowing a visual comparison of profit month by month, so that, at a glance, one can analyze how much of the expected balance has not been obtained. Using the interaction of the graph to your advantage, it is possible to review spending, cut expenses so that you can work aware of your income in search of obtaining a higher profit. As previously stated, it is of great importance to know the deficiencies and needs of the company, in order to seek assistance in reporting the information that is in fact favorable for its management, since the excess of it may cause the proposed objective to be blurred. However, the tool has numerous alternatives and options to facilitate data extraction and visualization.
5 FINAL CONSIDERATIONS

With an increasingly competitive job market, it is extremely important to have a strategic vision, following the technological advances and the advantages they make possible, executing them intelligently for the company. This work aimed to highlight the importance of Management Accounting for the administration of the organization and propose the use of a method, Business Intelligence, directly linked to Information Technology, which has the characteristic of making information more dynamic and flexible, helping and providing more assertively in decision making. It is extremely important to have the resource information as an asset within the business and, for that, it is necessary to maintain a synergy between the areas of the company so that the information that is of real importance to the correct user, thus making it in fact useful to the user during the decision-making process. The suggestion of using BI comes as an instrument to support Management Accounting, where several advantages in its use can be pointed out, such as ease of sharing, clarity of information, reduction of duplication of tasks, among others. It is relevant to highlight the importance of the business vision in the application of the tool, since in order for its use to be successful, it is necessary to identify what one is looking for and where one wants to reach at any given moment. It cannot be said that the use of the BI tool will, in itself, be the necessary lever for the economic or administrative increase of the company, since these depend on other factors, such as, for example, the veracity of the information used. But it can be seen that the information resource is necessary and essential for the organization. Thus, the tool can contribute with clarity, speed and dynamism to the information necessary for the decision-making process.
REFERENCES


MONTEIRO, Sonia Maria da Silva. Manual de Contabilidade Financeira. 1ed.


SEBRAE. Serviço Brasileiro de Apoio as Micro e Pequenas Empresas.


