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Management Accounting Practices in Portuguese SMEs

Methods and data generating process for an exploratory study

By

Sofia Ferreira Fragoso

Católica Porto Business School
April 2022

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Master's Final Work in the modality of Dissertation presented to Universidade Católica Portuguesa to fulfil the requirements for the degree of MSc. in Management

By

Sofia Ferreira Fragoso

under the orientation of
Professor Fernando Santos

Católica Porto Business School
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Abstract

According to research around Management Accounting Practices (MAPs), these play a significant role in guaranteeing the efficiency of a firm's management and may even boost performance (Zabri et al., 2013). However, there appears to be little evidence supporting a positive effect of MAPs implementation on performance in the context of Small and Medium Enterprises (SMEs). Moreover, proper characterization of the implementation of MAPs in Portugal's SMEs is missing.

This project proposes a set of methods and detailed data generating process for an exploratory study to fill this gap. Such study would enable a characterization of the implementation of MAPs in Portugal's SMEs and a characterization of its impact on organizational performance: both financial and non-financial.

Key words: Management Accounting Practices; Small and Medium Enterprises; Financial Performance; Non-financial Performance

Number of words: 5.309 (five thousand three hundred and nine words)

Resumo

A literatura em torno de *Management Accounting Practices* (MAP) sugere que estes desempenham um papel significativo na garantia da eficiência da gestão das empresas e podem até mesmo aumentar o seu desempenho (Zabri et al., 2013). No entanto, há pouca evidência que sustente o efeito positivo da implementação de MAPs no desempenho de Pequenas e Médias Empresas (PMEs). Adicionalmente, não existe uma caracterização adequada relativa à implementação de MAPs em PMEs portuguesas.

Com o objetivo de contribuir para o preenchimento deste *gap* existente na literatura, este projeto propõe um conjunto de métodos e um processo detalhado para a geração de dados que possibilitem um estudo exploratório. Tal estudo iria permitir realizar uma caracterização da implementação de MAPs em PMEs portuguesas e caracterizar o seu impacto no desempenho organizacional: financeiro e não financeiro.

Palavras-chave: *Managamet Accounting Practices*; Pequenas e Médias Empresas; Performance Financeira; Performance não Financeira

Número de palavras: 5.309 (cinco mil e trezentas e quatro palavras)

Index

Figures Index

Table Index

Introduction

Changes in the global competitiveness, as well as changes in company cost structures and the rapid development of technologies (Joshi, 2001) have increased the problems for managers in recent years, and many experts have warned that management accounting must change to suit the needs of managers (Chenhall & Langfield-Smith, 1998), putting pressure on Management Accounting Practices (MAPs) to evolve (Joshi, 2001).

Authors, such as Ittner and Larcker (2002), define MAPs as a set of methodologies designed to support the organization's infrastructure and management accounting processes (Gichaaga et al., 2013). According to Ahmad and Zabri (2013), Management Accounting Practices play a vital role in assuring the efficiency of a firm's management and may even increase performance (Zabri et al., 2013).

To date, a substantial amount of empirical research has focused on accounting information (information obtained from financial statements) to better understand the elements that influence performance, which researchers and managers are keen to learn more about (Balios & Zaroulea, 2021). However, since organizational effectiveness cannot be measured solely through accounting or financial indicators, as previously stated, researchers developed non-financial performance measures (Amy et al., 2012). Ittner and Larcker (1998), for example, discovered evidence to back up suggestions that customer satisfaction measures, a non-financial measure, are leading determinants of accounting performance.

Most of this literature focus on large companies, existing however little evidence of a positive impact of MAPs on SMEs (Ahmad, 2017). As such, the main contribution of this research is to enable the assessment of the impact of MAPs on (financial and non-financial) performance in the context of Portuguese

SMEs. Moreover, as an intermediate goal, this thesis fosters a first characterization of Portuguese SMEs' MAPs. To achieve these goals, this project proposes a set of methods and detailed data generating process for future exploratory study.

A literature review on MAPs and their impact on organizational performance is presented in the next chapter. Methods as well as a detailed generating process for a future empirical exploratory study is described in the following chapter. Following a description of the methodology and data collection process, a case study of INOVA+ is presented. The last chapter presents the study's summary, followed by research limitations and future recommendations.

Literature Review

Defining Management Accounting Practices

According to Gichaaga (2013), Management Accounting Practices (MAPs) assist an organization to survive in a competitive, ever-changing environment, by guiding managerial action, motivating behaviors, and supporting and creating the cultural values required to achieve an organization's strategic objectives. Thompson, Strickland, and Gamble (2009) believe that implementing management accounting practices can give a company a long-term competitive advantage over its competitors. (Gichaaga et al., 2013)

Other authors, such as Ittner and Larcker (2002), define MAPs as a set of methodologies designed to support the organization's infrastructure and management accounting processes. (Gichaaga et al., 2013)

This aligns with the views of Epstein and Lee (2008), as well as Nuhu, Baird, and Appuhami (2016), who believe that MAPs are organizational information systems that deliver relevant information to an organization's consumers and the company (Maziriri & Mapuranga, 2017). Based on the literature, MAPs help management to receive important information for meaningful decision making (Weekes-Marshall & Abdullah, 2011), allowing enterprises to compete in the marketplace and lowering the likelihood of business failure (Maziriri & Mapuranga, 2017).

Based on the development of MAPs, they are divided into Traditional Management Accounting Practices (TMAPs) and Contemporary Management Accounting Practices (CMAPs). TMAPs have concentrated on cost control and adapted competitive operating conditions due to managers' need for backward-looking information to understand overall performance and accountability in

their organization. However, MAPs have shifted from backwards-based planning and control to forward-oriented decisions, strategic arrangements, and control in the contemporary business environment of rapid technological advances. In this sense, CMAPs can connect projects, tasks, processes, and metrics to strategic outcomes (Dahal, 2021).

As such, MAPs are related with offering management solutions for internal management purposes (Ndwiga, 2011), since they facilitate successful decisions and support organizations in promoting desired behaviors. According to these authors (Maziriri & Mapuranga, 2017), budgeting, performance evaluation, information for decision making, and strategic analysis are examples of MAPs. This study takes these 4 types into consideration, as well as costing system practices (Maziriri & Mapuranga, 2017), taking into account both TMAPs and CMAPs, but without creating a clear differentiation between them because that is not the goal of this research.

Costing system practices

In a business organization, these types of practices are a technique for determining the production cost of a product or service, as well as to monitor whether company's expenses are in accordance with its profits. (Dlamini, 2020).

The following are the primary tools for the costing system, according to Abdel-Kader and Luther (2008): separation between variable and fixed costs; using a plant-side overhead rates as well as department overhead rates; learning curve techniques; cost of quality; and Activity-Based Costing (ABC) (Ashfaq et al., 2014).

Budgeting Practices

Budgeting has been widely utilized for planning, controlling and performance evaluation system in a company (Dlamini, 2020). According to the literature,

budgeting is a critical tool for planning and controlling an organization's activities (Abdel-Kader & Luther, 2006), improving future activities (Chenhall & Langfield-Smith, 1998).

The following practices are included in this study as they play a significant role in the controlling and planning functions of management (Dlamini, 2020): budgeting for planning; budgeting for controlling; flexible budgeting; Activity-Based Budgeting (ABB); and Zero-based Budgeting (ZBB).

Performance Evaluation Practices

One of the most difficult problems that companies face is deciding which measurements to use to steer and evaluate performance (Abdel-Kader & Luther, 2006). In this regard, performance evaluation practices are critical in business administration because they support in the provision of information for evaluating the various areas of the company (Dlamini, 2020). Managers can use performance evaluations as a roadmap to help them benchmark against future situations and make informed decisions (Dlamini, 2020), facilitating decision-making.

According to the literature, financial measures, non-financial measures linked to operations, customers, and employees, Economic Value Added (EVA) and benchmarks are the techniques that can be clustered in this broad type of practices.

Decision-making Practices

In today's fast-paced, aggressively competitive business environment, businesses must make well-informed short and long-term decisions to ensure their survival (Dlamini, 2020), which is becoming one of the most important key factors in the modern changing corporate environment (Wu et al., 2007). The

main goal of Management Accounting is to provide useful information for making decisions (Abdel-Kader & Luther, 2006).

With this in mind, it is important to have the right information to make informed decision and get the most out of the company's resources (Dlamini, 2020). The most relevant practices of this broad type are customer and product profitability analysis; cost-volume profit analysis; payback period and/or accounting rate of return; and probability analysis.

Strategic Analysis Practices

Traditional Management Accounting Systems (MAS) have been criticized for focusing on reporting data related to internal processes while paying little attention to the external environment and the impact of competitors' decisions and cost structures on existing and future business processes (Abdel-Kader & Luther, 2006).

Concern for customer and the external environment, attention on competitors, and long-term forward-looking orientation are some of the features described by Guilding et al. (2000) in the externally oriented approach known as "Strategic Management Accounting" (SMA) (Abdel-Kader & Luther, 2006).

SMA are management accounting tools or procedures used to support strategic decision making in a competitive commercial context. These tools support strategy creation by providing essential financial information so that the company achieves a competitive advantage (Dlamini, 2020). However, prior research has revealed that SMA is a modern MAP with a poor acceptance rate among entities, despite the importance of these tools (Guilding et al., 2000).

Following the literature, this category of MAPs may be subdivided into: Long-range Forecasting, Shareholder Value, Value Chain Analysis, Industry Analysis, and Life-cycle Analysis.

The relationship between MAPs and Organizational Performance

According to Ahmad and Zabri (2013), Management Accounting Practices play a vital role in assuring the efficiency of a firm's management and may even increase performance (Zabri et al., 2013). Mitchell and Reid (2000); Mia and Clarke (1999), and Reid and Smith (2000) have supported the argument that improved management accounting practices will lead to increased business performance (Zabri et al., 2013). Current MAPs have included financial and non-financial strategies that attempt to deliver vital information at both operational and organizational levels, as well as increase efficiency and business performance of the enterprises (Ahmad, 2017).

Nuhu, Baird and Appuhami (2016) investigated the relationship between the usage of MAPs and organizational change and performance in a previous study. The findings revealed that firms who employ modern MAPs to a larger extent have experienced more change and improved performance (Maziriri & Mapuranga, 2017).

The following authors have been attempting to determine whether MAPs have a substantial link with performance since a few decades ago: Hoque, 2004; Shields and Shields, 2005; Fullerton and Wempe, 2009; Ahmad and Zabri, 2016; Ahmad, 2017. Hence, evidence suggesting that the level of implementation of Management Accounting Practices positively impacts Organizational Performance has been found. However, these studies were primarily done in larger firms. As a result, there are major gaps in the knowledge base about MAPs in SMEs, which should be addressed so that the information provided may help SMEs improve their management (Ahmad, 2017).

When financial performance is sufficient in smaller organizations, there is a tendency to place less emphasis on providing management accounting

information. In this regard, it is crucial to emphasize that, as several studies have demonstrated, both financial and non-financial measures should be prioritized – Anderson et al. (1994); Abernethy and Lilis (1995); Ittner and Larcker (1998); Banker et al. (2000); Said et al. (2003); and Bryant et al. (2004) - (Ahmad, 2017). Ittner and Larcker (1998), for example, discovered evidence to back up suggestions that customer satisfaction measures, a non-financial measure, are leading determinants of accounting performance (Ittner & Larcker, 1998).

MAPs and SMEs

SMEs contribute significantly to the economy in terms of income generation, entrepreneurship, job creation, and employment (Ahmad, 2017). Despite the fact that the deployment of MAPs is frequently thought to be more helpful for larger firms due to the nature of their challenging operations, SMEs should not overlook the benefits of MAPs. While evidence suggests that the level of implementation of Management Accounting Practices positively impacts Organizational Performance of SMEs (Maziriri & Mapuranga, 2017), it has also been found that SMEs with financial constraint in terms of profitability, cash flow and credit availability implement more Management Accounting Practices than less constrained ones (Lucas et al., 2013).

Given the importance of financial difficulties and the growing requirement for businesses to operate economically, efficiently, effectively and ethically, Management Accounting (MA) could play a critical role in enhancing planning, control, and decision-making quality. "However, little is known about the role of MA in SMEs and its contribution" (Lucas et al., 2013). For example, (Nandan, 2010), suggests that the failure or underperformance of SMEs is commonly

attributed to their failure to use proper MA tools. Hence, the use of MAPs by SMEs is critical for corporate growth (Ahmad, 2017).

The inability of SMEs to exploit proper MAPs, defined as the ability of MAPs to lower the risk of business failure by providing efficient information that can boost the competitive advantages of enterprises, has been repeatedly asserted to be linked to their poor performance. As a result, it is critical to consider the implementation of suitable MAPs in order to survive their businesses in the long-term (Ahmad, 2017). Is this the case in Portugal? To which extent Portuguese SMEs use MAP? How does it impact Portuguese SMEs organizational performance?

Methods and Data

Methods

This study presents a set of methods and a detailed data generation process for an exploratory research intended to address the previously stated questions. As such, the key independent variable is a set of MAP variables and the dependent variable is organizational performance. In order to express the relationship between the variables it is proposed to follow Gichaaga et al. 2013 and use the following model.

$$Y = \beta_0 + \beta_1 CS + \beta_2 B + \beta_3 PV + \beta_4 DM + \beta_5 SA + \sum_{i=1}^{n} X_i + e$$

Where:

Y = measure of organizational performance

CS = measure of the Costing System Practices

B = measure of the Budgeting Practices

PV = measure of the Performance Evaluation Practices

DM = measure of the Decision-making Practices

SA = measure of the Strategic Analysis Practices

X_i = measure of control variable i

e = error term

Data

Dependent variable

Performance Measurement Systems (PMSs) are a set of metrics that assist business in running their operations effectively to meet their objectives (Ahmad & Zabri, 2016). Since it is necessary to resort not only to the financial results (Elena, 2012), generally, PMSs are separated into financial and non-financial components (Ahmad & Zabri, 2016). In this sense, this exploratory study proposes that financial and non-financial components are used to measure the organizational performance. For this study, data from SABI will be utilized to examine the financial components, while data from survey will be used to examine non-financial components.

Regarding financial performance measures, according to Gichaaga et al. (2013), "Return on Equity (ROE), liquidity ratios, asset management ratios, profitability ratios, and leverage ratios" are some financial performance metrics that companies can employ.

Return on equity measures a company's capacity to turn equity investments into profits and is a percentage that represent a company's annual return (net income) divided by the value of its entire shareholder's equity. Each of these values (net income and shareholders' equity would be obtained from SABI, as previously mentioned.

Making efficient use of assets is how liquidity management is performed. Liquidity refers to the rate at which assets are converted into cash, and liquidity ratios are primarily concerned with cash flows. It is a metric used to evaluate a company's ability to meet short-term obligations (Durrah et al., 2016). According with Durrah (2016), liquidity ratios include current ratio, quick ratio, cash ratio, and defensive interval ratio. The current ratio and liquidity ratio, both of which can be acquired from SABI under European Ratios, are the ratios that this study

recommends analyzing. A company's ability to pay its current, or short-term, liabilities (debts and payables), with its current, or short-term, assets (cash inventories, and receivables), is determined by the current ratio. To put it another way, to calculate this ratio it's necessary to divide current assets by current liabilities (Jason Fernando, 2021). By dividing current assets minus stocks by current liabilities it is possible to acquire the value for the liquidity ratio, which was previous mentioned as being obtainable using SABI under European Ratios.

This study refers to asset management ratios since financial analysts and managers utilize its analysis to evaluate firm performance. Asset management ratios (also known as asset turnover ratios or asset efficiency ratios) are used to assess a company's capacity to generate revenue or profitability from its assets. The analysis of asset management ratios is significant and useful since it helps us to see how well a company is operating, and if the company has a low asset management ratio it suggests inefficient asset usage and indicate that the company is not properly managing its assets. (Durrah et al., 2016). For this ratio, this study proposes to analyze the net assets turnover ratio under European Ratios, provided by SABI, when analyzing the company's financial components. A company's sales or revenues are compared to the value of its assets using the asset turnover ratio. The asset turnover ratio can be used to measure how effectively a business uses its assets to produce income. This can be calculated by dividing the period total sales by the simple average of total assets at the beginning and end of the year (Adam Hayes, 2022b).

Profitability ratios are used to capture a company's ability to make profits as a return on their investment, reflecting the success or failure of the company; profitability ratios represent both the company's competitive environment and its quality management (Durrah et al., 2016). This study proposes to analyze 3 of SABI's profitability ratios (Return on Shareholders' Funds, Return on Total Assets, and Profit Margin). The accounting term Return on Shareholders' Funds

refers to the rate of return that shareholders have received on the money they have invested in the company. It is determined by dividing the Profit after Tax and Interest by the Shareholders' Employed Capital (Collins Dictionary of Business, 2005). The financial ratio known as Return on Total Assets (ROA) measures how well a company can utilize its available assets to produce earnings. Simply expressed, this indicator assesses a company's capacity to turn its investment in assets into earning. It is determined by dividing the operational profit (or EBIT) by the average total assets (Madhuri Thakur, n.d.). Finally, Profit Margin, represents the proportion of sales that have generated profits (Troy Segal, 2021). This is computed, according to SABI, by dividing Profit & Loss (P&L) before tax by Operating Revenue/Turnover.

Regarding financing decisions, leverage ratio can be computed by the dividing the amount of outstanding debt by the total assets (Corporate Finance Institute, n.d.-a). All of the above variables necessary to construct the non-financial measurements of performance are available in SABI database.

However, as previously mentioned, organizational effectiveness cannot be measured solely through accounting or financial indicators. Researchers have already developed non-financial performance measures with focus on customer satisfaction, employee motivation and turnover, product or service quality, market share, the capacity of organization, among others (Amy et al., 2012). Customer satisfaction, market share, employees' measures, and other non-financial measures will be the emphasis of this study's non-financial performance framework, and a questionnaire will be used to collect data for each of these (Appendix I), as well as for the independent variables of interest, as explained below.

Independent variables of interest

As mentioned in the previous section, the key independent variables of interest is a set of the Management Accounting Practices' variables, which were carefully described and divided into 5 categories – Costing System Practices; Budgeting Practices; Performance Evaluation Practice; Decision-making Practices; and Strategic Analysis Practices.

To clarify, Costing System Practices are subdivided as follows: separation between variable and fixed costs; using a plant-side overhead rates as well as department overhead rates; learning curve techniques; cost of quality; and Activity-Based Costing (ABC) (Ashfaq et al., 2014). Budgeting Practices are subdivided as follows: budgeting for planning; budgeting for controlling; flexible budgeting; Activity-Based Budgeting (ABB); and Zero-based Budgeting (ZBB) (Dlamini, 2020). Performance Evaluation Practices comprise financial measures, non-financial measures related to operations, customers and employees, EVA, and benchmarking. Customer and product profitability analysis, cost-volume profit analysis, payback period and/or accounting rate of return, and probability analysis are the fourth set of practices connected to Decision-making Practices. Finally, Strategic Analysis Practices considers Long-range Forecasting, Shareholder Value, Value Chain Analysis, Industry Analysis, and Life-Cycle Analysis.

The study proposes a questionnaire to measure each of these 5 key independent variables. Here, selected firms are asked to answer, on a 5-point Likert Scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often), how often they employ each practice, and the study suggests analyzing the evolution across the analyzed years, i.e., whether there was a large change from one year to the next, a minor change or no change at all.

Controls

Some studies have been criticized for failing to include control variables (Callen & Thomas, 2009). Following the literature, it is suggested to control for size and investment in Research and Development (R&D), and growth (Callen & Thomas, 2009; Wier et al., 2007).

On one hand, firm size is a factor that can influence a company's financial performance (Andersen & Dejoy, 2011). Following Wier et al., 2007, this study proposes to use the log of total assets to measure this control variable, which can be found under total assets on SABI.

Investment in Research and Development (R&D) can have an impact on financial performance, according to Andersen & Dejoy (2011), and it is vital to consider this when analyzing the impact of MAPs on (financial and non-financial) performance. For investment in R&D this study proposes to analyze the total R&D expenditures over the previous 5 years.

According to Wier et al. (2007), the control variable growth consists in "the market value of equity plus book value of debt divided by book value of assets" at the beginning of each year (Wier et al., 2007). However, this variable requires market value of equity, which (Portuguese) SMEs is hard to abtain.

The activity sector of Portuguese SMEs is another control variable to take into consideration, also available through SABI.

Data Generating Process

The data collection for the dependent variables will be divided into two sources. First, the study proposes using SABI to identify Portuguese SMEs from a range of 800.000 companies, obtain their contact details, and identify the values required for the financial performance measures (dependent variables) and control variables. The second source is a survey that collects MAPs (key independent variables) and non-financial performance measures (dependent

variables). It is suggested that the study analyzes the data over a four-year period, from 2017 to 2020.

The questionnaire should be administered to a sample of around 3500 Portuguese SMEs in order to generate a sample of about 200 Portuguese SMEs[1]. This is because the proposed regression analysis requires a high sample size. It should be assessed in SABI which Portuguese SMEs have the values required to generate the variable measures. The questionnaire should then be submitted to the companies, by email, with a 15-day follow-up. Respondents must rate the frequency of usage of 27 MAPs – on a five-point Likert scale (1 indicating "never" and 5 "indicating very often") or "Not familiar" – clustered into the above mentioned five categories: Costing System Practices; Budgeting Practices; Performance Evaluation Practices; Decision-making Practices; and Strategic Analysis Practices. In Appendix I exhibits how the questionnaire is organized.

As previously stated, SABI will be a resource for this study, which is a system that collects balance sheets for Iberian enterprises, in order to examine the financial performance of the companies.

[1] The part of the questionnaires that focuses on MAPs was administrated to a set of more than 100 Portuguese SMEs. However, response rate was very low – above 6%.

Case: INOVA+

To try to get something more out of this study, it was decided to implement the full questionnaire to INOVA+, and to collect the above-mentioned information from SABI. The findings from the INOVA+ 'case study' will be presented in this chapter. Values for financial performance will be shown first, followed by values for non-financial performance.

Financial performance

Data on financial performance was gathered through SABI, and below it is presented the comparison between the variables throughout the years 2017 to 2020.

We can see from the figure below that there is a large potential for turning stock investments into earnings in the company in question.

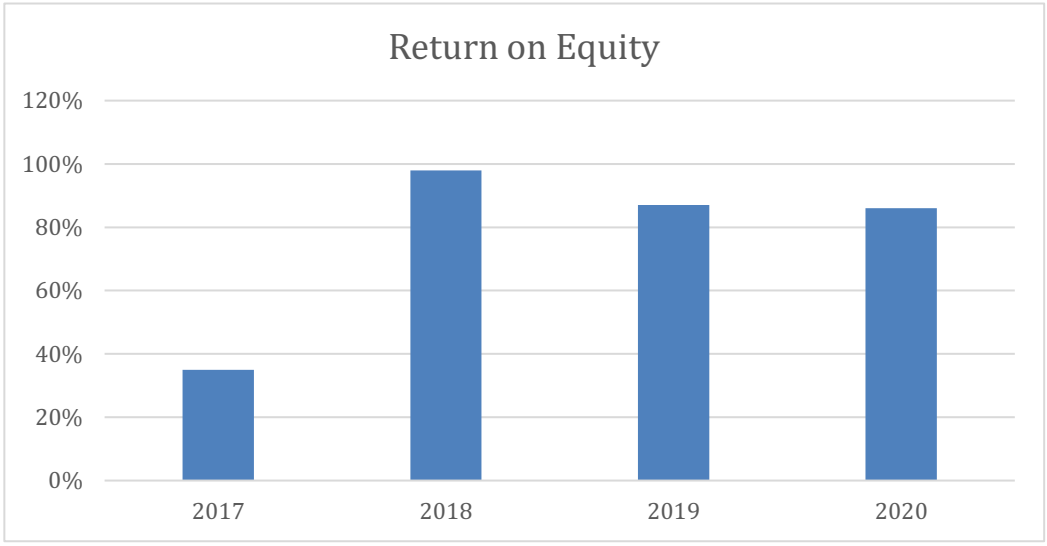

Figure 1 - Return on Equity

The liquidity ratio is used to determine if a corporation can cover its current liabilities with its current assets, or liquid assets. A ratio of 1 indicates that a

company's current assets are sufficient to pay off all of its current liabilities. A ratio of less than one indicates that a corporation is unable to meet its present obligations. Given this, companies with ratios above 1.0 are sought after (Corporate Finance Institute, n.d.-b), which is exactly what the company in question has, as presented in Figure 2. However, the liquidity ratio has decrease during the last year. It dropped from 3.59 to 2.82. This suggests that in 2018, the corporation could cover its current liabilities three times over, but just 2.82 times over in 2019.

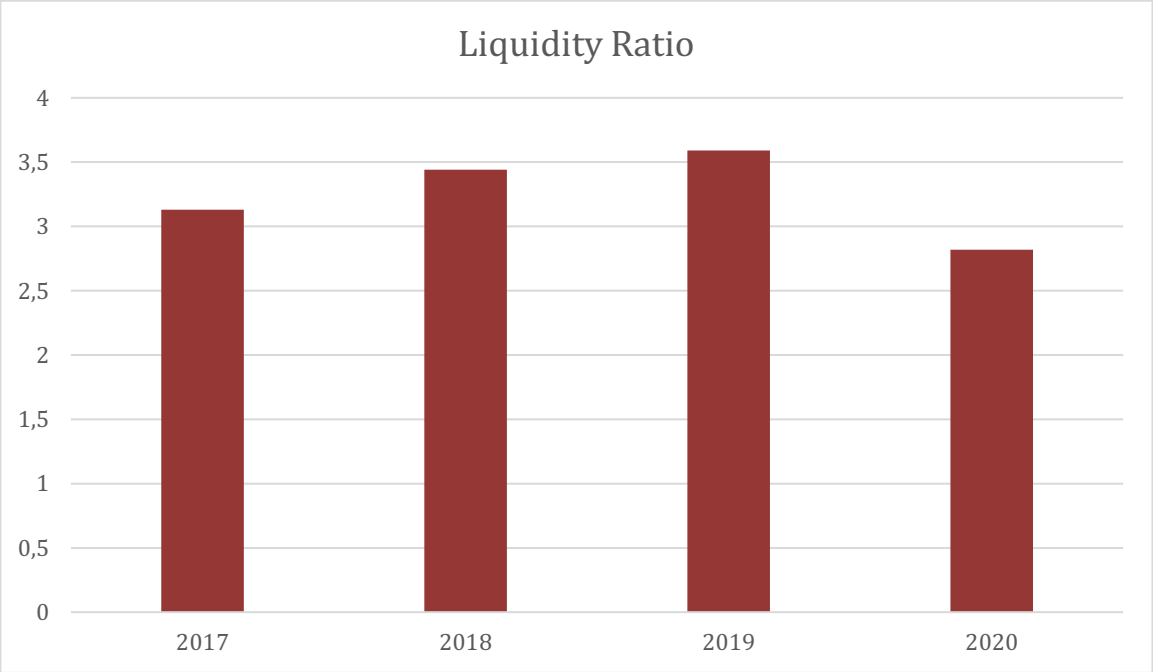

Figure 2 - Liquidity Ratio

In terms of asset management ratios, the net asset turnover was examined, as shown in the figure below (Figure 3). It is important to note that the better the company performs, the higher the asset turnover ratio is (Adam Hayes, 2022). The represented values indicate that the company in question performed better in 2020 that in prior years.

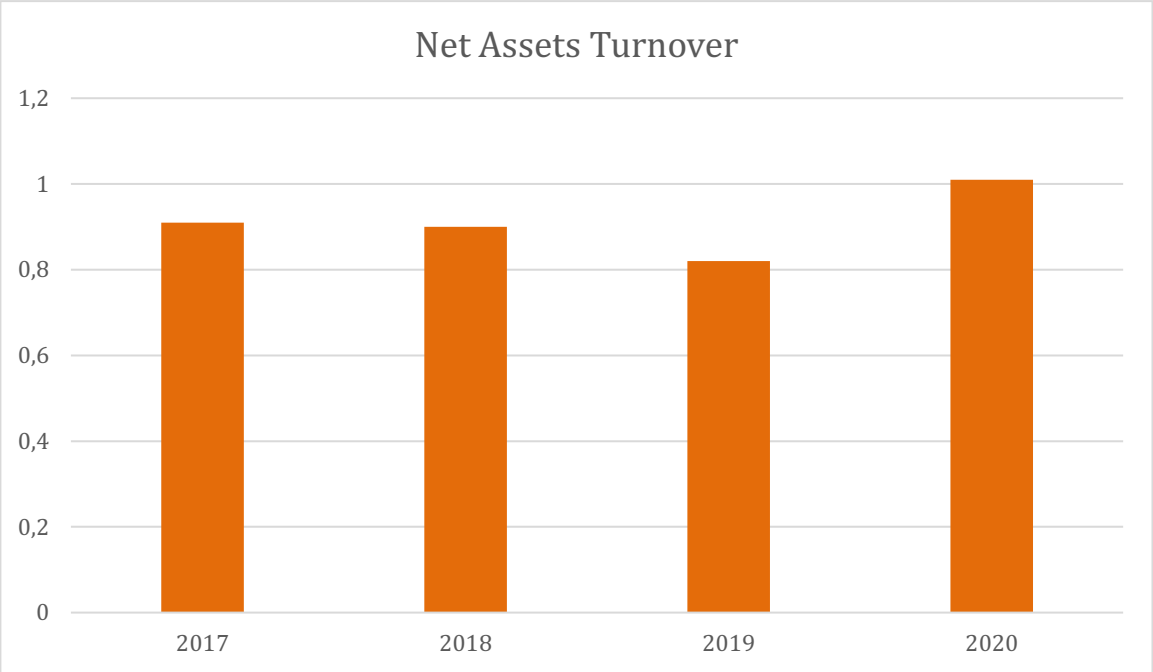

Figure 3 - Net Assets Turnover

When it comes to profitability ratios, three different ratios were examined. First, there's the Return on Shareholders' Funds, as seen in Figure 4. This ratio which "shows how much money is returned to the owners as a percentage of the money they have invested or retained in the company, (…) the higher the percentage, the more money is returned to investors" (Business Development Bank of Canada, n.d.), can be seen to have decreased from 2017 to 2019 but increased significantly from 2019 to 2020.

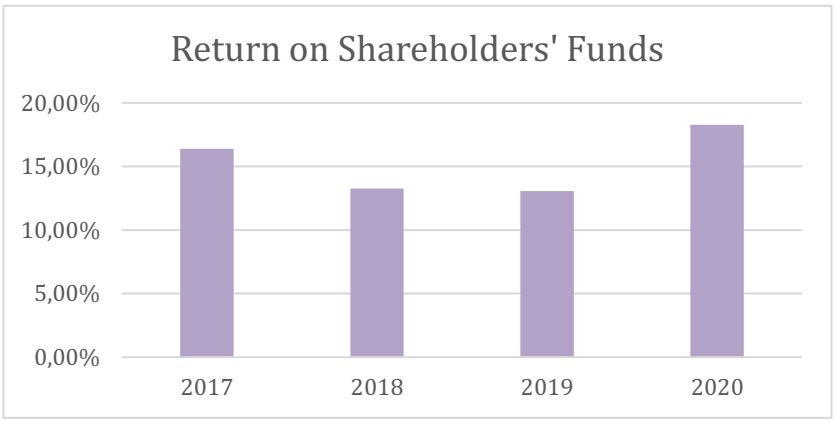

Figure 4 - Return on Shareholders' Funds

We have Return on Total Assets as the second profitability ratio, Figure 5. This ratio reveals how well a company's investments generate value, making it a critical indicator of a company's productivity. And we can see that for the company in question, 2020 has a higher percentage.

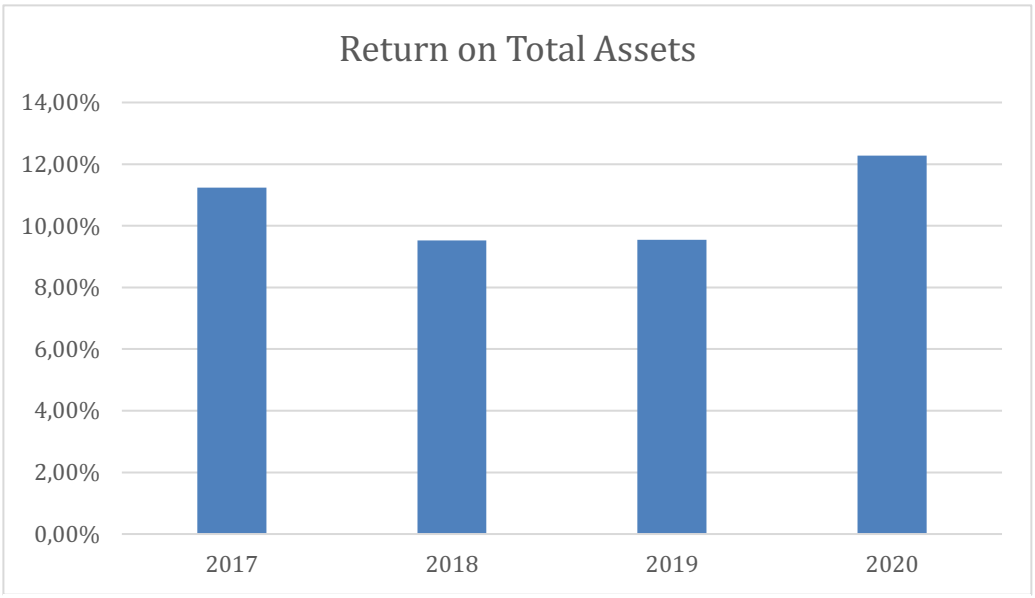

Figure 5 - Return on Total Assets

Figure 6 shows profit margin, the final profitability ratio. This ratio reveals the ability of the company's revenue to generate net income. To put it another way, it evaluates how much profit is generated at a certain level of sales (Accounting Course, n.d.).

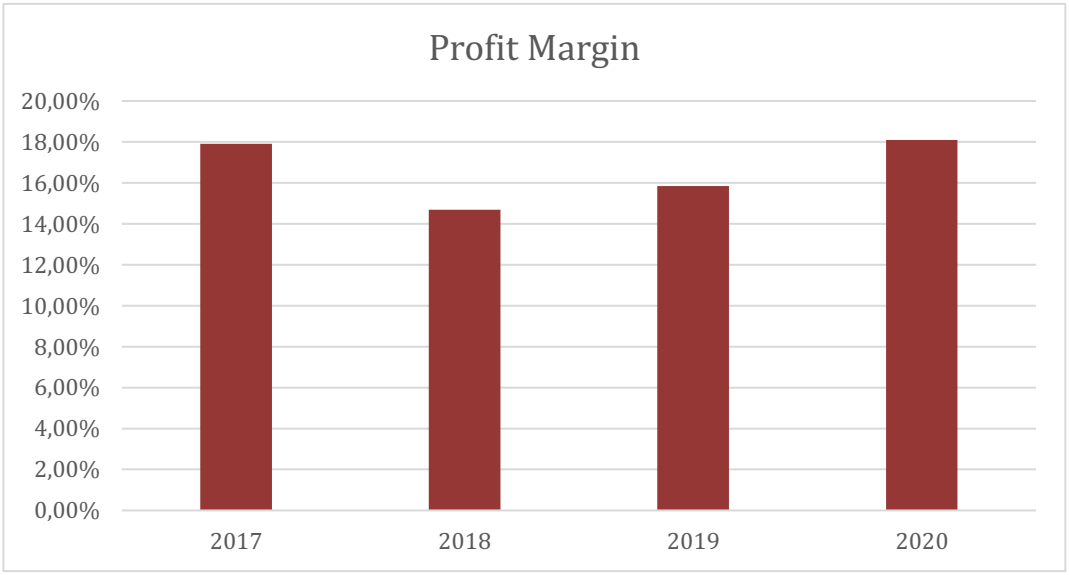

Figure 6 - Profit Margin

The Debt-to-equity ratio, Figure 7, a Leverage Ratio, is the final financial performance indicator. This ratio illustrates the proportions of equity and debt used to fund a company's assets, and it indicates the extent to which shareholder equity can meet creditors' obligations in the case of a business failure. A low debt-to-equity ratio shows that debt financing via lenders is used less frequently than equity financing via shareholders. In the other way, a higher ratio implies that the company is borrowing money for a greater portion of its funding, putting the company at risk if debt levels are too high (Andrew Bloomenthal, 2022).

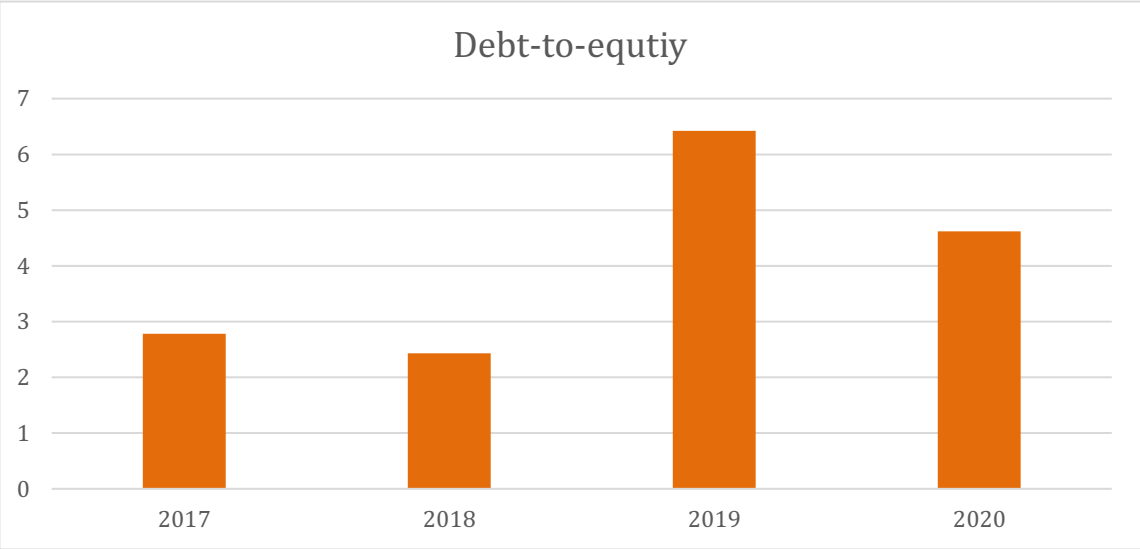

Figure 7 - Debt-to-equity

In the company in question, we can observe that the ratios for 2017 and 2018 are lower than those for 2019 and 2020. It's worth noting, though, that there was a decline from 2019 to 2020.

Non-financial performance

A questionnaire for INOVA+ was done regarding non-financial performance. They had to present values of ten measures from 2017 to 2020. Market share and customer satisfaction were the only two of these ten variables which the company

had no information. The company, on the other hand, does not measure one of the variables, which is internal relations.

Employee development and training is the first variable in the information-gathering process (Figure 8). The company calculates the number of training hours to measure this variable.

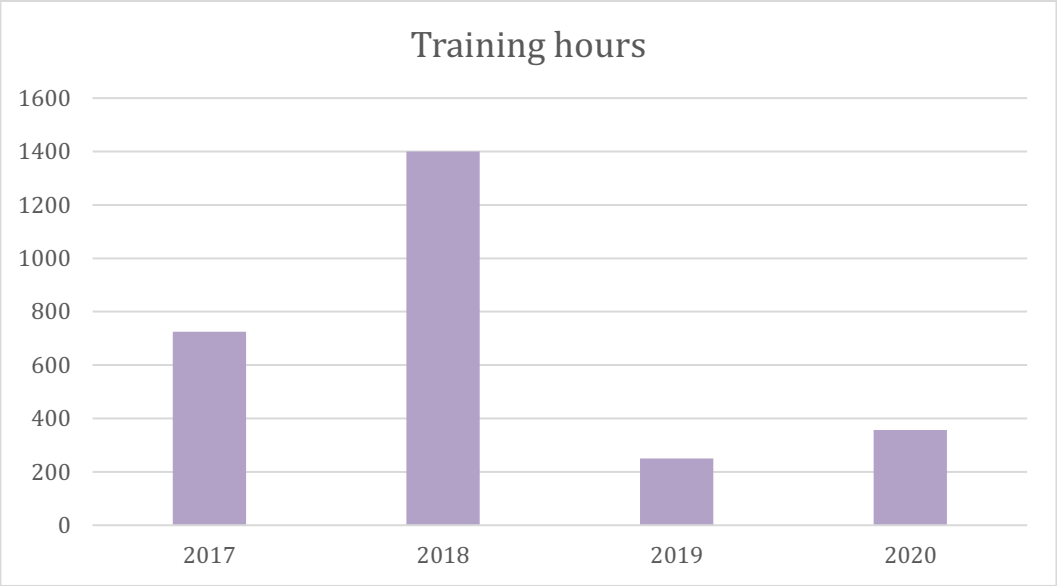

Figure 8 - Training Hours

When it comes to employee satisfaction, Figure 9, the organization uses the average satisfaction rate from a scale of 1 to 5. It is worth noting that INOVA+ only started measuring this variable from 2019 onwards.

Figure 9 - Employee satisfaction

The company in question analyzes workplace health and safety by calculating the number of accidents per year, Figure 10.

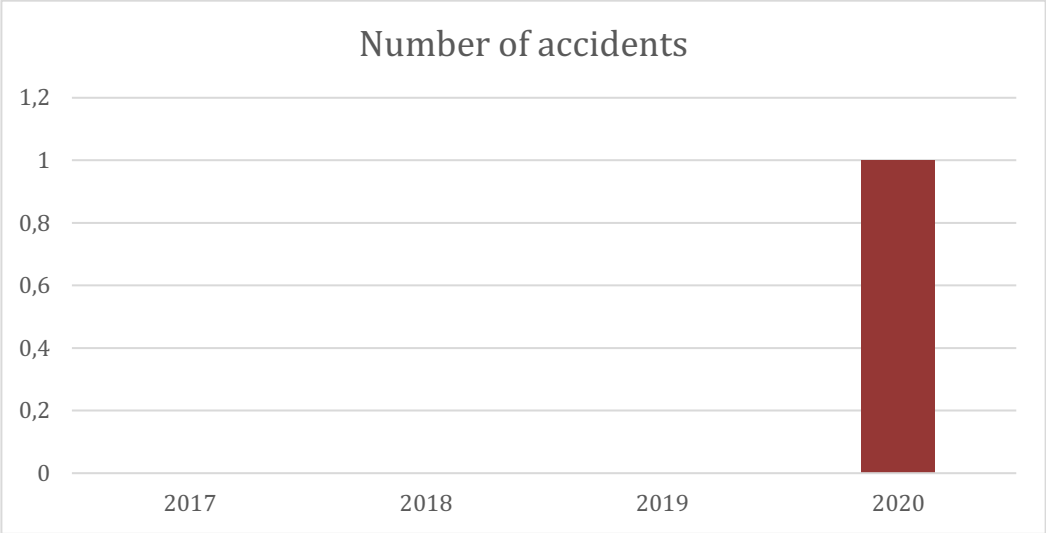

Figure 10 - Number of accidents

The company reported a percentage for each year for employee turnover, as exhibited in the next figure (Figure 11).

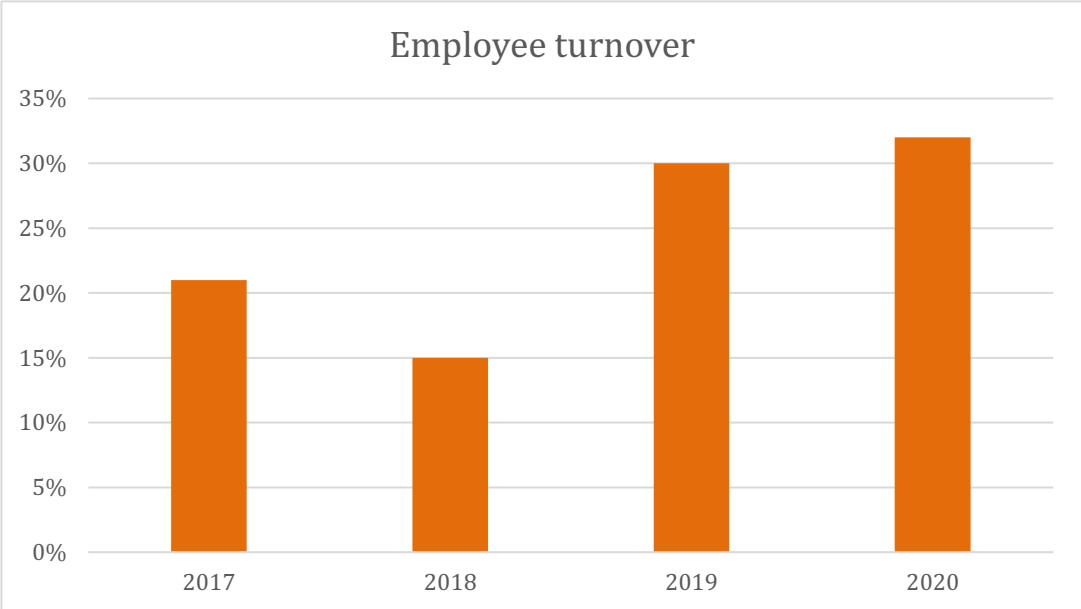

Figure 11 - Employee turnover

In the following figure (Figure 12), the measure analyzed is absenteeism. Here, the company provided the absence hours for each year.

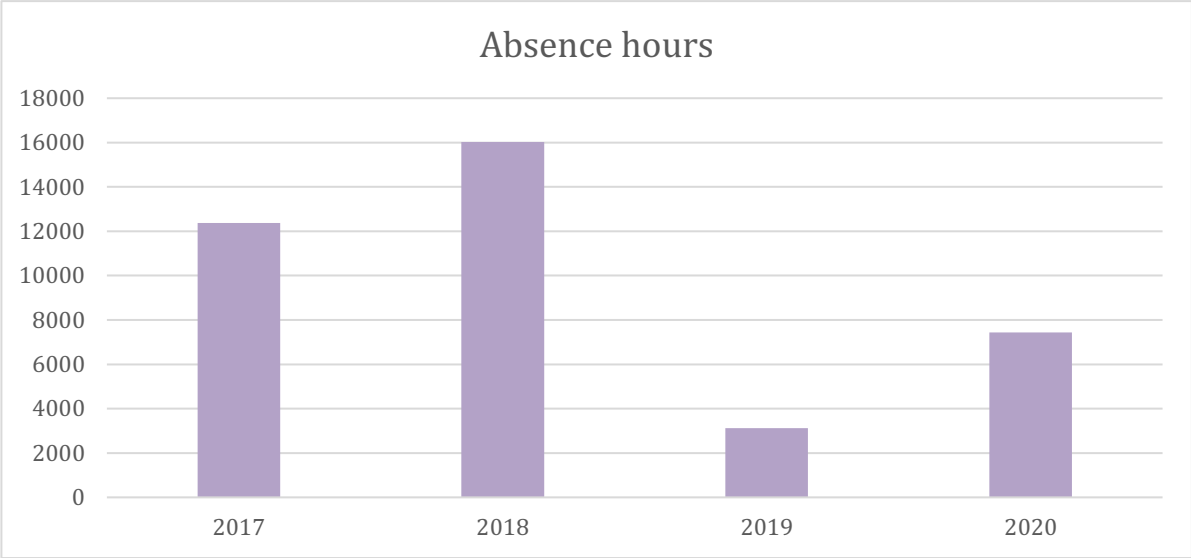

Figure 12 - Absence hours

The organization only began evaluating employee performance in 2020, and it uses a scale of one to ten, with one being insufficient and ten being excellent, and the average for 2020 was good, as said by the company.

In terms of team performance (TP), INOVA+ employs two methods, only after 2019, for calculating this variable. To begin, the firm uses the following formula, followed by the values provided.

$$TP = \frac{Number\ of\ areas\ that\ achieved\ better\ than\ expected\ results}{Total\ number\ of\ areas}$$

The company has 73-percentage for 2019 and 75-percent for 2020.

The following formula is the company's second way of measuring team performance, followed, as well, by the values for the years 2019 and 2020.

$$TP = \frac{Number\ of\ areas\ with\ operating\ profitability\ greater\ than\ or\ equal\ to\ 20\% * \frac{EBITDA}{Business\ volume} \geq 20\%}{Total\ number\ of\ areas} *$$

INOVA+ had a 60 percent team performance in 2019, and a 91 percent team performance in 2020, when assessed like this.

MAPs

Regarding the analysis of the MAPs results, INOVA+ provided data for the year 2018 and 2019, since there were no changes between the years 2017 and 2018. In that respect, they will be assessed in combination with the company's financial and non-financial measures, previously presented.

After looking at the company's MAPs, presented in the tables below (Table 1 to Table 5), we can see that there isn't much of a variation from 2018 and 2019. The following were the practices that experienced any change: learning curve technique; budgeting for controlling; long-range forecasting; and shareholder value.

	2018	**2019**
Separation between variable and fixed costs	5	5
Using a plant-wide overhead rate	1	1
Using a department overhead rate	5	5
Learning curve technique	1	3
Cost of quality	1	1
Activity Based Costing	5	5

Table 1 - Costing System Practices

	2018	**2019**
Budgeting for planning	5	5
Budgeting for controlling	4	5
Flexible budgeting	4	4
Activity Based Budgeting	5	5
Zero-based budgeting	1	1

Table 2 - Budgeting Practices

	2018	2019
Financial measures	5	5
Non-financial measures related to operations	2	2
Non-financial measures related to customers	1	1
Non-financial measures related to employees	3	3
Economic Value Added	3	3
Benchmarking	1	1

Table 3 - Performance Evaluation Practices

	2018	2019
Product Profitability analysis	1	1
Cost-volume-profit analysis (breakeven analysis)	1	1
Payback period and/or accounting rate of return	1	1
Customer Profitability Analysis	1	1
Probability analysis	4	4

Table 4 - Decision-making Practices

	2018	2019
Long-range forecasting	3	4
Shareholder value	1	2
Value Chain Analysis	1	1
Industry analysis	1	1
Life-cycle analysis	1	1

Table 5 - Strategic Analysis Practices

Conclusion

By providing contemporary perspectives of both literature and methodology, this study adds to the body of knowledge in the field of management accounting (Maziriri & Mapuranga, 2017).

Organizational performance has become increasingly essential over time, and this study provided a set of methods and a detailed data generation process for an exploratory study, in order to determine how Management Accounting Practices (MAPs) affect organizational performance in Portuguese Small and Medium Enterprises, as previous studies have done for other countries. For example, Maziriri & Mapuranga, 2017 study shows that small and medium-sized enterprises who use Management Accounting Practices have better performance within the Gauteng province of South Africa.

The study recommends a methodology to be used in order to gain a better understanding of MAPs as well as the relation between these and organizational performance. Information on MAPs and non-financial performance would be obtained through the proposed questionnaire, while information regarding financial performance and controls would be obtained through SABI database.

This study also featured a case study involving the company INOVA+. The data was collected using the methods given by this study.

Future research may take into account the limitations of the current study. According to the literature, one of the control variables that should be considered is equity market value, which is determined by dividing the price per share by the total number of shares outstanding (James Chen, 2020). However, this would only be feasible for publicly traded companies (stock quoted on a Stock Exchange), which is not the case of Portuguese SMEs. In this way, it becomes challenging to compute growth, another control variable, which consists in "the

market value of equity plus book value of debt divided by book value of assets" at the beginning of each year (Wier et al., 2007). On the other hand, due to the self-report nature of data generating process, which required the use of a questionnaire, respondents' responses on the survey may not correctly reflect their true engagement in Management Accounting Practices (Gichaaga et al., 2013).

Finally, implementing this study may emphasize the relevance of using Management Accounting Practices in Small and Medium Enterprises.

References

Abdel-Kader, M., & Luther, R. (2006). Management accounting practices in the British food and drinks industry. *British Food Journal*, *108*(5), 336–357. https://doi.org/10.1108/00070700610661321

Accounting Course. (n.d.). *Profit Margin Ratio.* Retrieved March 22, 2022, from https://www.myaccountingcourse.com/financial-ratios/profit-margin-ratio

Adam Hayes. (2022a). *Asset Turnover Ratio*. https://www.investopedia.com/terms/a/assetturnover.asp

Adam Hayes. (2022b, February). *Asset Turnover Ratio.* https://www.investopedia.com/terms/a/assetturnover.asp

Ahmad, K. (2017). The Implementation of Management Accounting Practices and its Relationship with Performance in Small and Medium Enterprises. *International Review of Management and Marketing*, *7*(1), 342–353. http:www.econjournals.com

Ahmad, K., & Zabri, S. M. (2016). The Effect of Non-financial Performance Measurement System on Firm Performance. *International Journal of Economics and Financial Issues* |, *6*(S6), 50–54. http:www.econjournals.com

Amy, M., Mohd, A., Chee, H. ∗, Hoe, H., & Ahmad, M. I. (2012). *The Financial and Non-Financial Performance Indicators of Paddy Farmers' Organizations in Kedah*. http://ssrn.com/abstract=2130415

Andersen, M. L., & Dejoy, J. S. (2011). *Corporate Social and Financial Performance - the role of size, industry, risk, R&D, and advertising expenses as control variables*.

Andrew Bloomenthal. (2022). *Debt-to-equity Ratio*.

Ashfaq, K., Younas, S., Usman, M., & Hanif, Z. (2014). Traditional Vs. Contemporary Management Accounting Practices and its Role and Usage across Business Life Cycle Stages: Evidence from Pakistani Financial Sector. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *4*(4). https://doi.org/10.6007/ijarafms/v4-i4/1285

Business Development Bank of Canada. (n.d.). *Return on Shareholder's Equity Ratio*. Retrieved March 22, 2022, from https://www.bdc.ca/en/articles-tools/entrepreneur-toolkit/templates-business-guides/glossary/return-on-shareholders-equity-ratio

Callen, S. J., & Thomas, J. M. (2009). *Corporate Financial Performance and Corporate Social Performance - an update and reinvestigation*.

Chenhall, R. H., & Langfield-Smith, K. (1998). Adoption and benefits of management accounting practices: An Australian study. *Management Accounting Research*, *9*(1), 1–19. https://doi.org/10.1006/mare.1997.0060

Collins Dictionary of Business. (2005). *Return on Shareholders' Funds*. https://financial-dictionary.thefreedictionary.com/return+on+shareholders%27+funds#:~:text=return%20on%20shareholders%27%20funds%20an%20accounting%20measure%20of,SHAREHOLDERS%27%20CAPITAL%20EMPLOYED%20%28issued%20share%20capital%20plus%20RESERVES%29.

Corporate Finance Institute. (n.d.-a). *Leverage Ratios*. Retrieved March 20, 2022, from https://corporatefinanceinstitute.com/resources/knowledge/finance/leverage-ratios/

Corporate Finance Institute. (n.d.-b). *Liquidity Ratio*. Retrieved March 20, 2022, from

https://corporatefinanceinstitute.com/resources/knowledge/finance/liquidity-ratio/

Dahal, R. K. (2021). Traditional Vs contemporary management accounting techniques in the Nepalese manufacturing companies. In *Journal of Management Information and Decision Sciences* (Vol. 24, Issue 5).

Dlamini, B. (2020). Insight on the use of Management Accounting Practices among large manufacturing entities in Zimbabwe. *International Journal of Advanced Research and Publications*. www.ijarp.org

Durrah, O., Aziz, A., Rahman, A., Jamil, S. A., & Ghafeer, A. (2016). Exploring the Relationship between Liquidity Ratios and Indicators of Financial Performance: An Analytical Study on Food Industrial Companies Listed in Amman Bursa. *International Journal of Economics and Financial Issues* |, *6*(2), 435–441. http:www.econjournals.com

Gichaaga, P. M., Omollo, J., & Dean, A. (2013). *Effects of management accounting practices on financial performance of manufacturing companies in Kenya*.

Guilding, C., Cravens, K. S., & Tayles, M. (2000). An international comparison of strategic management accounting practices. *Management Accounting Research*, *11*(1), 113–135. https://doi.org/10.1006/mare.1999.0120

Ittner, C. D., & Larcker, D. F. (1998). Are Nonfinancial Measures Leading Indicators of Financial Performance? An Analysis of Customer Satisfaction. In *Source: Journal of Accounting Research* (Vol. 36).

James Chen. (2020). *Market Value of Equity*.

Jason Fernando. (2021, October). *Current Ratio.* https://www.investopedia.com/terms/c/currentratio.asp

Lucas, M., Malcolm Prowle, P., & Lowth, G. (2013). *Management Accounting Practices of (UK) Small-Medium-Sized Enterprises (SMEs)*.

Madhuri Thakur. (n.d.). *Return on Total Assets* . Retrieved July 1, 2022, from https://www.educba.com/return-on-total-assets/

Maziriri, E. T., & Mapuranga, M. (2017). *The Impact of Management Accounting Practices (Maps) on the Business Performance of Small and Medium Enterprises within the Gauteng Province of South Africa*.

Nandan, R. (2010). *Management Accounting Needs of SMEs and the Role of Professional Accountants: A Renewed Research Agenda* (Vol. 8, Issue 1).

Ndwiga, N. M. (2011). *The role of management accounting in creating and sustaining competitive advantage - a case study of equity bank, Kenya*.

Troy Segal. (2021). *Profit Margin*. https://www.investopedia.com/terms/p/profitmargin.asp

Weekes-Marshall, D., & Abdullah, U. (2011). *An Exploratory Study of Management Accounting Practices in Manufacturing Companies in Barbados*. www.ijbssnet.com

Wier, B., Hunton, J., & HassabElnaby, H. R. (2007). Enterprise resource planning systems and non-financial performance incentives: The joint impact on corporate performance. *International Journal of Accounting Information Systems*, *8*(3), 165–190. https://doi.org/10.1016/j.accinf.2007.05.001

Wu, J., Boateng, A., & Drury, C. (2007). An analysis of the adoption, perceived benefits, and expected future emphasis of western management accounting practices in Chinese SOEs and JVs. *International Journal of Accounting*, *42*(2), 171–185. https://doi.org/10.1016/j.intacc.2007.04.005

Zabri, S. M., Hadi, S., Abdullah, U., & Ahmad, K. (2013). *The relationship between the use of management accounting practices and the performance of Malaysian medium-size enterprises*.

Appendix

Appendix I - Management Accounting Practices in Portuguese SMEs

This questionnaire, about the impact of Management Accounting Practices, should be sent to Portuguese SMEs, whose contact information will be obtained through SABI. This questionnaire should be distributed to at least 3500 Portuguese SMEs, in order to obtain a representative sample. Finally, the years that should be examined are 2017 through 2020.

Management Accounting Practices in Portuguese SMEs

We appreciate you taking the time to complete this two-part questionnaire, which will help us better understand how MAPs are being implemented in Portuguese SMEs and describe their effects on organisational performance on both a financial and non-financial level. MAPs are discussed in the first section, and non-financial performance measures are discussed in the second.

* Required

Managament Accounting Practices

Choose a number between 1 and 5 to describe the degree to which your organization employed the following Management Accounting Practices. If you are not familiar with the practice please select the option "Not familiar" . The Management Accounting Practices are divided into 5 categories: Costing System Practices; Budgeting Practices; Performance Evaluation Practices; Decision-making Practices; Strategic Analysis Practices. (1=Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Very often)

1. Costing System Practices *

	1	2	3	4	5	Not familiar
Seperation between variable and fixed costs	◯	◯	◯	◯	◯	◯
Using a plant-wide overhead rate	◯	◯	◯	◯	◯	◯
Using a department overhead rate	◯	◯	◯	◯	◯	◯
Learning Curve Technique	◯	◯	◯	◯	◯	◯
Cost of Quality	◯	◯	◯	◯	◯	◯
Activity Based Costing	◯	◯	◯	◯	◯	◯

2. Please specify how much and which of these practises changed within the organisation between 2017 and 2020, if any of them did.

Enter your answer

3. Budgeting Practices *

	1	2	3	4	5	Not familiar
Budgeting for planning	◯	◯	◯	◯	◯	◯
Budgeting for controlling	◯	◯	◯	◯	◯	◯
Flexible budgeting	◯	◯	◯	◯	◯	◯
Activity Based Budgeting	◯	◯	◯	◯	◯	◯
Zero-based Budgeting	◯	◯	◯	◯	◯	◯

4. Please specify how much and which of these practises changed within the organisation between 2017 and 2020, if any of them did.

Enter your answer

5. Performance Evaluation Practice *

	1	2	3	4	5	Not familiar
Financial measures	◯	◯	◯	◯	◯	◯
Non-financial measures related to operations	◯	◯	◯	◯	◯	◯
Non-financial measures related to customers	◯	◯	◯	◯	◯	◯
Non-financial measures related to employees	◯	◯	◯	◯	◯	◯
Economic Value Added	◯	◯	◯	◯	◯	◯
Benchmarking	◯	◯	◯	◯	◯	◯

6. Please specify how much and which of these practises changed within the organisation between 2017 and 2020, if any of them did.

Enter your answer

7. Decision-making Practices *

	1	2	3	4	5	Not familiar
Product Profitability Analysis	◯	◯	◯	◯	◯	◯
Cost-volume-profit analysis (breakeven analysis)	◯	◯	◯	◯	◯	◯
Payback period and/or accounting rate of return	◯	◯	◯	◯	◯	◯
Customer Profitability Analysis	◯	◯	◯	◯	◯	◯
Probability Analysis	◯	◯	◯	◯	◯	◯

8. Please specify how much and which of these practises changed within the organisation between 2017 and 2020, if any of them did.

Enter your answer

9. Strategic Analysis Practices *

	1	2	3	4	5	Not familiar
Long-range forecasting	◯	◯	◯	◯	◯	◯
Shareholder value	◯	◯	◯	◯	◯	◯
Value Chain Analysis	◯	◯	◯	◯	◯	◯
Industry Analysis	◯	◯	◯	◯	◯	◯
Life-cycle Analysis	◯	◯	◯	◯	◯	◯

10. Please specify how much and which of these practises changed within the organisation between 2017 and 2020, if any of them did.

Enter your answer

Next

Management Accounting Practices in Portuguese SMEs ...

* Required

Non-financial Performance Measures

In the next section, please describe the company's formula and, if any changes were made between 2017 and 2020, submit the updated formula. The value for each year should then be given. Please indicate if the company does not evaluate any of these metrics.

11. Market Share *

Enter your answer

12. Client Stafiscation *

Enter your answer

13. Employees Development and Training *

Enter your answer

14. Internal relations between employees *

Enter your answer

15. Employee Satisfaction *

Enter your answer

16. Health and Safety *

Enter your answer

17. Percentage of employee turnover *

Enter your answer

18. Absenteeism *

Enter your answer

19. Employee Performance (work efficiency and productivity) *

Enter your answer

20. Team Performance *

Enter your answer

Back Submit