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Capital Budgeting Practices: A Survey of Two Industries

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Abstract: This research examines the capital budgeting practices used by small and medium-sized firms (SMEs) in two Portuguese industries, footwear and metalworking, aiming at answering the following research questions: How much knowledge do managers have about capital budgeting practices? What are the most used practices? How much importance do they attribute to applying them? The research was conducted through an online survey with a response rate of 14.9%. The results document that most companies in both industries are familiar with capital budgeting practices, despite differences between the two. The footwear industry recognizes the importance of these indicators but makes little use of them, and many companies prefer using payback period (PBP). The metalworking industry, on the other hand, makes greater use of capital budgeting practices, with net present value being the favored indicator and PBP being used as supplementary. This study contributes to the capital budgeting literature in two ways: first, by focusing on SMEs instead of only large firms, and second, by exploring data from two industries rather than multiple, heterogeneous industries.

Keywords: capital budgeting; capital budgeting practices; footwear industry; metalworking industry; manufacturing; SMEs

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1. Introduction

Capital budgeting (CB) practices have been widely studied, with the literature concentrating on identifying companies' most commonly applied capital budgeting indicators and reasons for using some rather than others. Most studies are based on large listed companies in big countries with developed economies, such as the USA (e.g., Graham and Harvey 2001), the UK, Germany, the Netherlands, France, Sweden, Italy, Spain (e.g., Brounen et al. 2004; Daunfeldt and Hartwig 2014; Rossi 2014), Brazil (e.g., de Souza and Lunkes 2016), Canada (e.g., Bennouna et al. 2010), Australia (e.g., Truong et al. 2008), and Korea (e.g., Kim et al. 2021). There are also studies in other countries such as Croatia (e.g., Dedi and Orsag 2008), Sri Lanka (e.g., Nurullah and Kengatharan 2015), Kuwait (e.g., AlKulaib et al. 2016), Barbados (e.g., Alleyne et al. 2018), and Portugal (e.g., João et al. 2007). As a country whose business is based on small and medium-sized firms (SMEs), Portugal depends heavily on their development and growth to become more competitive in the face of major European and global economies. According to Sureka et al. (2022), there is a lack of studies investigating the capital budgeting (CB) process and the factors affecting the CB efficiency of SMEs.

Wealth maximization is the primary objective of large publicly listed firms, whereas SME owners want utility from the business, such as "contentment" or "happiness", along

with financial gains (Vos et al. 2007), which results in SME owners being very emotionally involved in the business. SMEs tend to over- or underinvest and suffer from agency costs (e.g., Vos et al. 2007). Compared with large firms, SMEs have fewer managerial levels and a simpler organizational structure (Ling et al. 2008), as their owners are reluctant to share control of the firm (Matias and Serrasqueiro 2017). This establishes strong ground for an expected difference between CB practices in large and small firms. It is therefore important to study SMEs' CB to understand their practices, processes, and issues.

Capital investment, corporate goals, and profitability objectives, among others, are characteristics that differ between industries (e.g., Arena et al. 2015; Gurnani 1984). When exploring CB practices, most studies have used samples from various industries and tend to generalize their outcomes. This approach might not produce robust results. It is thus desirable to study CB in specific industries to investigate the possibility of adopting CB models specific to each industry (e.g., Sureka et al. 2022).

Given these gaps, and to improve knowledge in this field, this study aims to answer the following research questions for SMEs in the Portuguese industries of footwear and metalworking: How much knowledge do managers have about capital budgeting practices? What are the most used practices? How much importance do they attribute to applying them? These two industries play a central role in Portugal's competitiveness and in its standing abroad, in the European and world context. The footwear industry exports 66.29% of its production, and the return on assets is 6.6%, while the metalworking industry exports 55.74%, and the return on assets is 10.6%. For the whole Portuguese economy, exports on sales represent 22.17%, all at 2021 values, which gives a picture of the importance of the two industries for the economy (data drawn from the Sector Tables published by the Portuguese Central Bank, https://www.bportugal.pt/QS/qsweb/Dashboards (accessed on 22 February 2023)).

To answer the research questions, online questionnaires were used, divided into three groups of questions: first, about the company; second, about the manager/owner/CEO of the company; and finally, about investments.

The main findings show that most companies know about capital budgeting practices, despite differences regarding their importance in the two industries analyzed. In the footwear industry, their nonuse stands out, which is the result of a lack of specialized human resources, while in the metalworking industry, the net present value (NPV) is preferred, contrary to what is practiced in Europe.

This paper makes a twofold contribution to the literature on capital budgeting practices. Firstly, our empirical focus is on SMEs, while most of the literature has focused predominantly on large firms. Secondly, we test data from two industries, whereas most of the literature uses data drawn from heterogeneous industries (e.g., Graham and Harvey 2001; Brounen et al. 2004; Truong et al. 2008).

The study yields significant managerial insights, indicating a low adoption rate of capital budgeting practices among companies in Portugal, particularly in the two analyzed industries consisting mainly of SMEs that hold strategic significance for the country's growth. This underscores the importance of raising awareness among decision makers and users that increased use of CB techniques may be tied to education on their importance in management and business schools, as greater use appears to be correlated with knowledge gained through education.

The paper is structured as follows: After this introduction, Section 2 presents the literature review. Section 3 presents the research design. Section 4 presents the empirical findings. Finally, Section 5 presents the conclusions and limitations of the study.

2. Literature Review

Capital budgeting (CB), a planning tool, aims to aid the proper distribution of financial resources among investment projects to make sound investment decisions and assess project viability. Capital budgeting broadly covers the entire process from identification to selection and realization of investment projects, aiming to maximize company and

shareholder value (Megginson et al. 2008; Keršytė 2011; Andor et al. 2015). This theme incorporates subtopics, e.g., capital budgeting practices, cost of capital estimation, and capital structure (e.g., Graham and Harvey 2001; Brounen et al. 2004; Dedi and Orsag 2008). This study focuses on the subtopic of capital budgeting practices.

Capital budgeting has aroused academics' interest, particularly the practices and actual rates of use in companies. At a later stage, some academics also wanted to identify the factors leading to choosing some indicators over others (e.g., Graham and Harvey 2001; Brounen et al. 2004; Daunfeldt and Hartwig 2014; Bennouna et al. 2010).

These studies began in the USA, first based on the analysis of large companies (LCs) and later expanding to studies in Europe and the whole world. As for the literature investigating LCs, trends diverge. Firms in the USA report a preference for the payback period (PBP) in the 1970s (e.g., Mao 1970), but other studies indicate greater use of the internal rate of return (IRR) and net present value (NPV) (e.g., Farragher et al. 1999; Graham and Harvey 2001; Ryan and Ryan 2002; Schall et al. 1978). In Europe, the indicator of choice is the PBP, with the exception of Croatia (e.g., Andrés et al. 2015; Daunfeldt and Hartwig 2014; Brounen et al. 2004; Dedi and Orsag 2008; Sandahl and Sjögren 2003).

In more detail, Schall et al. (1978) investigated three subthemes of capital budgeting: capital budgeting practices, calculation of the cost of capital, and the risk associated with projects. They applied a questionnaire to 424 USA LCs (achieving a 46.8 percent response rate). They conclude that most companies only apply capital budgeting practices for some investments, and the most used one is the PBP, together with other indicators. However, in their study of 379 CFOs of American LCs, Farragher et al. (1999) reveal IRR as their favorite indicator.

Graham and Harvey (2001) and Ryan and Ryan (2002) found that NPV is the most used indicator by American LCs, followed by IRR and then PBP. Graham and Harvey (2001) also identified some factors that would justify the choice of some indicators instead of others and presented the following ones: factors related to managers' characteristics (age, experience, and level of education) and company-related characteristics (size and number of acquisitions made). Ryan and Ryan (2002) distinguish their study by revealing that the amount of capital available for investments is an important factor in the choice of indicator.

Unlike in the USA, the trend in Europe—Europe (Rossi 2014; Brounen et al. 2004), Sweden (Daunfeldt and Hartwig 2014; Sandahl and Sjögren 2003), Spain (Andrés et al. 2015), and Croatia (Dedi and Orsag 2008)—has remained homogeneous, and companies choose PBP, except for Croatia, which chooses IRR as the preferred indicator.

Brounen et al. (2004) analyzed and compared four major European countries—the UK, Germany, the Netherlands, and France—on the topic of capital budgeting. To do so, they applied a questionnaire to LCs, obtaining 313 responses. Their results differ from those of Graham and Harvey (2001), since European countries choose PBP to evaluate their investment projects, while the USA chooses NPV. Brounen et al. (2004) justify this difference due to the size of firms, i.e., large European companies are relatively smaller than those in the USA. Both studies conclude that NPV is used more by managers who hold an MBA, with the exception of the UK.

Andrés et al. (2015) identified PBP as the most consensual indicator in Spanish LCs, followed by IRR, NPV, and real options (see also Rossi 2014). They also analyzed different industries, finding that PBP is more usual in the manufacturing industry and IRR is more frequently adopted in the consumer industry. As in previous studies, they claim that NPV is more commonly used among public firms than private firms (e.g., Graham and Harvey 2001). These authors reveal that the frequency of using capital budgeting practices does not depend on the CFO's characteristics, except for real options.

Analyzing large Croatian companies, Dedi and Orsag (2008) identified different trends from those in other European countries and concluded that the most commonly used capital budgeting practice is IRR, followed by the nonupdated PBP and NPV. They differentiate their study by asking about the existence of a department to frame and analyze projects

and conclude that 50 percent of the companies did have that department, whereas the other 50 percent did not.

A study conducted in Canada discloses NPV as the preferred indicator among large companies, followed by IRR, and 8 percent of companies claim to use real options (Bennouna et al. 2010).

The above literature on LCs shows that capital budgeting practices differ between countries but present a more homogeneous trend in Europe. These differences may also exist for SMEs, and even between LCs and SMEs.

Therefore, regarding SMEs, and according to, e.g., Block (1997) and Danielson and Scott (2006), PBP is the main indicator used. Block (1997) justifies the choice of PBP by its simplicity of implementation and analysis and also investigates the average PBP of the 233 USA SMEs analyzed: 2.81 years. When analyzing SMEs' capital allocation categories, 57.6 percent of the companies admit that they use the indicators mainly for maintenance and replacement investments, and only 8.1 percent claim that it is for expansion into new areas (Block 1997).

Danielson and Scott (2006), surveying 250 American SMEs, tried to understand the type of investment made, presenting similar conclusions to Block (1997): 50 percent of companies choose the replacement investment class, and investment in new production lines is also considered by 25 percent. They also conclude that 26 percent of companies use the "gut feel" factor as a capital budgeting practice. The causes for not using capital budgeting practices may differ between the need to replace equipment, the fact that they are SMEs and have limited sources of finance, and also the owner's financial situation. However, as Graham and Harvey (2001) claim, the cause for using some indicators over others is the result of the manager's age and level of education, as well as the number of employees.

Lazaridis (2004) investigates the trend in the use of capital budgeting practices in Cyprus, and his findings are similar to the previous authors. The author finds that much of the investment by SMEs in Cyprus, as noted by Block (1997) and Danielson and Scott (2006), is for expanding production, replacing old equipment, and/or creating new product lines. However, Lazaridis (2004) also discloses that 17.19 percent of the companies surveyed invest in new markets, and there is a small percentage that invests in energy-saving projects. He also identifies that 18.99 percent of companies do not use capital budgeting practices to evaluate their projects. The main reasons are not knowing them, not believing that they bring benefits to the company, and not having specialized human resources, experience, and/or time to apply and analyze them. Of those that admit to using them, they prefer PBP.

Some authors have conducted studies comparing the use of capital budgeting practices between LCs and SMEs (e.g., Andor et al. 2015; Graham and Harvey 2001; Truong et al. 2008; Vecino et al. 2015). Graham and Harvey (2001) identified factors such as manager characteristics (age, experience, and education) and firm-level characteristics (size, number of acquisitions made, export, industry, and dividend distribution policy) that are associated with the use of some indicators. NPV and IRR are more used by managers with MBAs, by dividend-paying LCs, and by public companies. PBP is more usual among SMEs and applied by managers without MBA degrees (e.g., Block 1997; Ryan and Ryan 2002).

Based on the analysis of 87 responses from 356 companies in 9 industries, Truong et al. (2008) claim that Australian LCs prefer indicators such as NPV, IRR, and lastly, PBP. For medium-sized companies, the preferred indicator is IRR, followed by NPV and PBP. Small firms choose PBP (Graham and Harvey 2001). When questioned about how many indicators the companies applied, 26 percent of the surveyed companies revealed the use of four indicators.

Vecino et al. (2015) analyzed the knowledge and correct application of capital budgeting practices in Colombia. Their sample included 54 percent LCs and 46 percent SMEs, with most managers holding university degrees. Their findings show that 68 percent of the companies employ capital budgeting practices. The most used indicators are NPV, cost/benefit ratio, and IRR. They justify the use of these choices because they are easy to

apply and take into consideration the principle of value for money. Regarding the correct use of indicators, although LCs apply them correctly, SMEs present a higher rate of error in their application. Vecino et al. (2015) identify company size and level of education as conditioning factors for the choice of capital budgeting practices, as previously mentioned by Graham and Harvey (2001).

Andor et al. (2015) analyze Central and Eastern Europe countries. This study differs from others by utilizing countries' level of development. Like Graham and Harvey (2001) and Vecino et al. (2015), their findings reveal that LCs employ NPV and IRR, unlike SMEs, which indicates that their choice is influenced by firm size. They also identify other factors, such as the presence of ethical codes, the country and company culture, the company objectives, and the number of projects analyzed. They also conclude that LCs, compared with SMEs, have better specialized human resources with knowledge and experience, as well as greater financial availability, which influences the use of more sophisticated capital budgeting practices.

Hermes et al. (2007) compared capital budgeting between companies in China and the Netherlands, having as their main argument the differences in the countries' level of development and to what extent this factor affects the choice of capital budgeting practices. Their most important conclusions are that Dutch companies prefer to opt for NPV, particularly LCs. PBP is the preferred choice among SMEs. As far as Chinese firms are concerned, they opt to use PBP. Regarding the use of IRR, both countries use it in a similar way.

According to the literature, there are differences between LCs and SMEs, and these differences may extend more specifically to different industries. Some studies focus on single industries. For example, Ross (1986), Hasan (2013), and Nurullah and Kengatharan (2015) analyzed the manufacturing industry. Ross (1986) analyzed the differences between theory and practice in implementing capital budgeting practices that take into account the cost of capital. To do so, he held interviews in which he proposed project cases and checked how managers solved them. His findings revealed that indicators are selected according to the size of the project firms are involved with. However, for smaller projects, PBP is the preferred indicator (Ross 1986).

Hasan (2013) investigates how Australian manufacturing SMEs use capital budgeting practices and risk analysis. Like Block (1997), Lazaridis (2004), and Danielson and Scott (2006), Hasan (2013) examined the areas of investment, and the answers are similar to those already mentioned: replacement of machinery, the extension of new production lines, and investment in new business areas and/or new markets. However, 7 percent of the companies invest in research and development. PBP continues to be the most used indicator, utilized by about 48.8 percent of the companies analyzed, and these results are explained by its simplicity of use and not requiring much financial expertise. Hasan (2013) also asked what the average number of years for which the project would be accepted was, and most companies presented a PBP between 3 and 5 years.

When studying the most used capital budgeting practices in companies in manufacturing and trading industries in Sri Lanka, Nurullah and Kengatharan (2015) show different results from previous authors, identifying NPV as the most used indicator, followed by PBP, and finally, IRR. When relating the selection of capital budgeting practices to the variables of (1) budget size, (2) managers' education, and (3) managers' experience, Nurullah and Kengatharan (2015) claim that (1) only NPV, PBP, and IRR are important indicators regarding budget size, rejecting the others; (2) managers' education is rejected by the lack of sufficient evidence to support it; and (3) managers' experience shows some evidence, but only for IRR, being rejected for the other indicators.

Finally, the conclusions of a small study of the Algarve, Portugal differ from the European trend, as IRR is the most used capital budgeting practice in that region, followed by NPV and PBP. However, the choice of these indicators depends on the size and purpose of the project, and industry type may have some influence (João et al. 2007).

3. Research Design

Data were collected by applying an online questionnaire due to the simplicity of collection and analysis of the information obtained. After placing the questionnaire on the platform developed and managed by the University of Aveiro, emails were sent, and subsequent telephone contacts were made with the sample of both industries.

The sample for the footwear industry was based on a universe of 370 companies whose contacts were provided by the Portuguese Association of Footwear, Components, Leather Goods, and Leather Goods Manufacturers, obtaining 45 valid responses. Regarding the metalwork industry, the sample was drawn from a universe of 131 companies, of which 30 responded. The general response rate was 14.9 percent, with 12 percent for the footwear industry and 22 percent for the metalworking industry. When compared with previous studies, these rates are average, since Block (1997) had a response rate of 27.29 percent, Hasan (2013) had a 17 percent response rate, and Graham and Harvey (2001) had a 9 percent response rate.

The two industries were defined by company size (SMEs), with most being family businesses and geographically close, which ensures homogeneity in terms of characteristics in the decision process and that differences in capital budgeting practices are mainly due to differences between the two industries.

The construction and structuring of the instrument took into account previous studies (Hristov et al. 2022a, 2022b; Evans III et al. 2015; Block 1997; Danielson and Scott 2006; Graham and Harvey 2001; Lazaridis 2004), duly adapted to the Portuguese context. Although many authors analyze SMEs, the Portuguese situation was taken into account as it presents different characteristics from other studies, being based on small family companies, which may interfere with knowledge and application of capital budgeting practices.

The questionnaire uses multiple choice questions (in order to be quick to answer and to increase the response rate) and is divided into three groups:

(1) Questions about the company: These aim to characterize the companies and identify the number of employees and sales volume, the type of family ties, and knowledge of capital budgeting practices.
(2) Questions about the manager/owner/CEO: This group of questions intends to collect information about the investment decision maker and how age, experience, and education affect such deliberations.
(3) Investment-related questions: These aim to understand what kind of investments are made, knowledge of capital budgeting practices, and the most used ones (checking if there is any industry-based trend).

The first and second groups of questions support the third one, i.e., knowledge of capital budgeting practices and their use are combined with the variants of the first two groups of questions to identify causes.

4. Results

Analysis of the results begins by presenting the descriptive characteristics of the companies in our sample, in Table 1. Most companies in the sample are family-owned, with more than 50 percent of them having this characteristic in both industries.

The age of the companies in the sample shows that 40 percent in the footwear industry are between 11 and 20 years old. In contrast, metalworking has a greater spread of ages, with similar values among all categories.

With regard to the number of employees, the footwear industry is primarily made up of companies with 10 to 50 employees, while the metalworking industry has 2 predominant categories: from 10 to 50 and from 50 to 250 employees.

In terms of sales in Portugal, 51 percent of the companies surveyed in the footwear industry had sales ranging from EUR 2 M to EUR 10 M. In contrast, most of the sales in the metalworking industry are below EUR 2 M.

Table 1. Descriptive characteristics of the companies.

Group of Variables	Variable	Categories	Footwear	Metalworking
Company Characteristics	Family-Owned	Yes	67%	77%
		No	33%	23%
	Age	<10	16%	20%
		Between 11 and 20	40%	20%
		Between 21 and 30	20%	13%
		Between 31 and 40	7%	20%
		Between 41 and 50	9%	7%
		>50	4%	13%
		N/A	4%	7%
	Number Employees	Up to 10	9%	28%
		10 to 50	51%	33%
		50 to 250	40%	33%
		Above 250	0%	3%
		N/A	0%	3%
	Sales for Portugal	up to 2 M €	38%	53%
		Between EUR 2 M and EUR 10 M	51%	30%
		Between EUR 10 M and EUR 50 M	4%	13%
		Above EUR 50 M	0%	0%
		N/A	7%	3%
	Foreign Sales	<50%	20%	57%
		50% to 70%	0%	13%
		70% to 100%	71%	23%
		N/A	9%	7%

The size of the companies in the sample can be determined by combining the number of employees with sales in Portugal. They are categorized as micro or small businesses as they do not exceed EUR 10 M in annual sales and typically have fewer than 50 employees.

Regarding sales abroad, the footwear industry has a higher rate, with over 70 percent of companies having this characteristic. In comparison, the metalworking industry has an inferior amount; the footwear industry has higher export rates than the metalworking industry.

In the first group of characteristics defining the companies, there are differences between the industries, particularly in terms of internal and external sales. The remaining variables are similar in both industries.

The following data were collected about the manager/owner/director, shown in Table 2. Concerning respondents' age, most respondents in the footwear industry are older, most being in the 40–50 age group. In contrast, 47 percent of respondents in metalworking are 40 years old or younger. It is worth mentioning that respondents older than 66 years only account for 2 percent in the footwear industry and 0 percent in metalworking.

Table 2. Descriptive characteristics of the owners/managers/directors.

Group of Variables	Variable	Categories	Footwear	Metalworking
Characterization of the manager/owner/director	Age	<40	31%	53%
		Between 40 and 50	40%	23%
		Between 50 and 66	22%	23%
		>66	2%	0%
		N/A	4%	0%
	Education Level	Up to 9th Grade	14%	10%
		12th Grade	20%	23%
		Bachelor	9%	10%
		Graduation	42%	40%
		Master	11%	17%
		Others	2%	0%
		N/A	2%	0%
	Position in the Company	Administrator	56%	34%
		Manager	20%	23%
		Financial Director (CFO)	20%	23%
		Executive Director (CEO)	2%	13%
		N/A	2%	7%
	Owner	Yes	64%	43%
		No	32%	57%
		N/A	4%	0%

In terms of education, most respondents have a bachelor's degree, with 10 respondents indicating a master's degree. Nonetheless, 20 percent and 23 percent of respondents in the footwear and metalworking industries, respectively, reported having completed up to the 12th year of secondary education.

As for job positions, there are differences between the industries. The footwear industry has 25 administrators, compared with 10 in metalworking. On the other hand, metalworking has 13 percent of respondents identified as CEO, while the footwear industry only has 2 percent of respondents in this position. The footwear industry has 64 percent of respondents who own the company, which is not the case in the metalworking industry, where most respondents do not own the company.

In this group of questions, there are differences in the variables—in terms of respondents' age, the metalworking industry has younger managers/owners/directors than the footwear industry. With regard to company ownership, there is a greater tendency for respondents in the footwear industry to own the company than in metalworking.

In the group of investment-related issues, shown in Table 3, it was found that the majority of companies made an investment in the past year: 73 percent in the footwear industry and 67 percent in the metalworking industry. Additionally, the metalworking industry made more frequent investments, with a periodicity greater than 5 years when compared with the footwear industry.

Table 3. Descriptive characteristics of the investment-related issues.

Group of Variables	Variable	Categories	Footwear	Metalworking
Investment	Last Investment	In the Last Year	73%	67%
		Between 2 and 5 Years	21%	23%
		More than 5 Years	4%	10%
		N/A	2%	0%
	Type of Investment	Equipment Replacement	62%	50%
		Production Lines Creation	4%	7%
		Expansion of Production Lines	16%	23%
		Others	18%	20%
	Evaluation of the Possible Return on Investment	Not Evaluated	11%	10%
		Intuition	4%	0%
		Equipment Replacement Need	40%	37%
		Sales Prevision	36%	33%
		Capital Budgeting Practices	2%	7%
		Other	4%	13%
		N/A	2%	0%
	Knowledge of Capital Budgeting Practices	Yes	60%	80%
		No	38%	20%
		N/A	2%	0%
	Preference Capital Budgeting Practices	IRR	15%	21%
		NPV	19%	42%
		PBP	22%	17%
		Nonuse	44%	21%
	Preference Complementary Indicator	IRR	23%	25%
		NPV	15%	13%
		PBP	31%	31%
		Nonuse	31%	18%
		Others	0%	13%

The types of investment made by both industries include the replacement of equipment, participation in fairs, expansion of facilities, acquisition of new equipment and/or tools, modernization of equipment, land purchases, and investment in e-commerce.

Evaluation of the potential return on investment was based on the need to replace equipment, which was reported by 40 percent of companies in the footwear industry and 37 percent of companies in the metalworking industry. It was also observed that 4 percent of footwear companies mentioned intuition as a factor, while none of the metalworking companies referred to this. The use of capital budgeting practices was mentioned by 7 percent of metalworking companies and 2 percent of footwear companies.

With regard to understanding capital budgeting practices in the footwear and metalworking industries, there are rates above 50 percent of knowledge in both industries:

60 percent in footwear and 80 percent in metalworking. There is no distinct preference for a specific capital budgeting practice among the companies surveyed.

As for the use of capital budgeting practices, 44 percent in the footwear industry reported nonuse, compared with 42 percent in the metalworking industry that selected NPV. Most footwear companies favored PBP, while NPV and IRR were more commonly used in the metalworking industry.

Five companies were excluded from the study as they reported using the same complementary indicator. For the remaining companies, the trend of using a complementary indicator was similar in both industries, with PBP being the most common choice. EBITA and financial autonomy were also reported as complementary indicators.

The nonuse of capital budgeting practices, in the companies that were aware of them, was primarily attributed to a lack of specialized HR in both industries. Only one company reported not using the indicators due to difficulties in calculating cash flows.

The study sample was comprised mostly of family-owned micro or small enterprises that have been in the market for up to 40 years. These companies were managed by administrators who were mostly aged 50 years or younger and held an academic degree. Most companies in both industries had knowledge of capital budgeting practices, with higher application rates in the metalworking industry. The last investment made by companies in both industries was due to the need to replace equipment.

The aim of this study was to determine the knowledge and importance of capital budgeting practices among Portuguese companies in the footwear and metalworking industries. The study was limited to companies that reported having knowledge of the indicators. The results indicate that above 70 percent of family-owned companies had knowledge of capital budgeting practices, with higher rates in footwear (81 percent) than metalworking (71 percent).

As for companies' characteristics, the results indicate the following: In the footwear industry, the majority of companies that report being knowledgeable about capital budgeting practices have been in the market for 11 to 20 years, accounting for 26 percent of all companies that are aware of capital budgeting practices. Eighty-nine percent of the companies report domestic sales of up to 10 million euros.

In the metalworking industry, 25 percent of the companies that are aware of capital budgeting practices have been in the market for less than 10 years, while another 25 percent have been in the market for 31 to 40 years. Most companies report internal sales of up to 2 million euros.

Regarding external sales, the results reveal that in the footwear industry, 74 percent of the companies surveyed that are aware of capital budgeting practices export more than 70 percent of their footwear, while only 15 percent export up to 50 percent. In the metalworking industry, 54 percent of the companies that are aware of capital budgeting practices report exporting up to 50 percent, while only 8 percent export more than 70 percent.

The results regarding the manager/owner/director indicate that those who are knowledgeable about capital budgeting practices are relatively young, with a younger demographic in metalworking than in footwear. The 40 to 50 age group is most knowledgeable about capital budgeting practices in the footwear industry, while in the metalworking industry, this group is the under-40s. No respondents were over the age of 66.

Level of education is consistent in both industries. Among those knowledgeable about capital budgeting practices, graduates have higher rates in both industries: 59 percent in footwear and 46 percent in metalworking.

The study found a lack of uniformity in the use of capital budgeting practices in different industries. In the footwear industry, the tendency is to be both owner and administrator, while in the metalworking industry, respondents reported not being the owners and serving as the CFO.

Although the majority of respondents reported having knowledge of capital budgeting practices, they had not evaluated the possible return on investment and had made the investment due to the need to replace equipment.

A complementary analysis was conducted to understand which capital budgeting practices are preferred by companies that are familiar with and apply them. Family-owned companies in the footwear industry tend not to use capital budgeting practices, and if they do, they prefer NPV or PBP. In the metalworking industry, 33 percent of family-owned companies elected NPV as their preferred indicator.

For non-family-owned companies in the footwear industry, the trend remains not to use capital budgeting practices, and those that do use either IRR or PBP. In the metalworking industry, there is no clear trend, with options including NPV, IRR, and nonuse, with only one company referring to PBP.

Regardless of the category, the footwear industry tends not to use capital budgeting practices. If they do use them, they prefer NPV or PBP. In the metalworking industry, the preference is for NPV.

NPV is used in similar proportions by both industries for companies that have been in the market for up to 10 years. For other categories, the rate is higher in the metalworking industry. IRR is more commonly used in metalworking, especially by companies that have been in the market for up to 10 years. The use of PBP is similar in both industries, except in the category of 21 to 30 years, where the footwear industry has twice as many companies using PBP as the metalworking industry.

The study found variation in the preferred capital budgeting practices in footwear companies based on the size of the company and their sales to the domestic market. Companies with higher invoicing (between EUR 2 M and EUR 10 M) tend not to use capital budgeting practices, while those billing up to EUR 2 M prefer NPV or PBP. In the metalworking industry, the preferred indicator is NPV for most companies. However, those with sales between EUR 10 M and EUR 50 M prefer IRR.

Among footwear companies that export more than 70 percent of their products abroad, 37 percent do not use capital budgeting practices, and those that do use either IRR or PBP. In the metalworking industry, the preferred indicator is NPV, although companies that export more than 70 percent prefer IRR.

Discussion of Results

Most companies in both industries claim to have knowledge about capital budgeting practices, with licensed administrators in their management. As mentioned by Vecino et al. (2015) in their study in Colombia, most companies say they have knowledge of the indicators, but in this country there is a higher rate of application than in Portugal, particularly in the footwear industry (where knowledge is claimed, but use is reduced, opting for PBP).

The metalworking industry has a higher rate of use of capital budgeting practices than footwear, with a preference for NPV, as mentioned by Vecino et al. (2015) and Nurullah and Kengatharan (2015) in their study of manufacturing and trading in Sri Lanka. However, the present study contradicts Hasan (2013) and Andrés et al. (2015) regarding Spanish companies, which refer to the use of PBP in the manufacturing industry.

NPV was also described as the preferred indicator of GEs in the USA in the study by Graham and Harvey (2001), in the Netherlands when compared with China in the study by Hermes et al. (2007), and also in the study by Andor et al. (2015) of the GEs of Central and Eastern Europe.

PBP is mentioned by scholars as a preferred indicator of SMEs in the USA, Australia, and Europe by companies in general (Block 1997; Sandahl and Sjögren 2003; Brounen et al. 2004; Danielson and Scott 2006; Dedi and Orsag 2008; Andrés et al. 2015).

When we compare the study conducted in the Algarve region with these two industries, both of which analyze Portuguese companies, there are discrepancies. The Algarve region has IRR as a preferred indicator, related to the size and purpose of projects, suggesting there may be some tendency for industries.

In this study, the reasons for the choice of capital budgeting practices are consistent across authors and can be attributed to the characteristics of both the company and the manager/administrator (Graham and Harvey 2001; Danielson and Scott 2006). Investi-

gating the impact of family ownership on knowledge of capital budgeting practices is novel and not previously explored in the literature. Results indicate that this variable does not significantly impact their knowledge, which is in contrast with the Portuguese cultural context.

Regarding the selection of indicators, the results reveal that the metalworking industry predominantly chooses NPV, while the footwear industry prefers PBP. This finding contradicts the results of Sandahl and Sjögren (2003), who observed that PBP was the most commonly used indicator in Swedish companies, regardless of their size.

In terms of external sales, the results show a stark difference between the two industries. The footwear industry has a high proportion of companies with exports exceeding 70 percent, of which 20 percent have knowledge of capital budgeting practices. However, only half of these companies reveal their usage, opting for PBP and IRR as complementary indicators. The nonuse of these indicators is attributed to the lack of specialized HR.

In the metalworking industry, 17 out of 30 companies export up to 50 percent of their products, with fewer companies in the remaining categories. Out of these 17 companies, 13 reported knowledge of capital budgeting practices and favored the use of NPV, with PBP as a complementary measure. The nonuse of capital budgeting practices by companies in this industry was attributed to a lack of specialized HR.

In the current study, respondents' age was found to have an impact on knowledge of capital budgeting practices, with younger respondents having more knowledge than their older counterparts, despite the limited sample size. This trend may reflect the recent shift towards higher levels of education among younger administrators in Portugal.

However, age was not found to be a determining factor in the selection of capital budgeting practices. The metalworking industry favored NPV, while the footwear industry did not use capital budgeting practices, and those who did choose PBP, as previously discussed. This result differs from the conclusions of Graham and Harvey (2001) and Danielson and Scott (2006), who suggested that age was a critical factor in the selection of capital budgeting practices.

Regarding level of education, the results show that higher educational attainment was positively associated with greater knowledge of capital budgeting practices, which is in line with the findings of Vecino et al. (2015) in Colombia. However, the results do not support the conclusion of Graham and Harvey (2001) and Brounen et al. (2004) that higher levels of education lead to a preference for more sophisticated indicators, as no such relationship was observed here. An academic degree was found to be fundamental for knowledge of capital budgeting practices, but the differentiation between industries remained, with the footwear industry opting for nonuse and the metalworking industry favoring NPV.

In previous studies, the CEO or CFO was usually the position questioned. However, in the context of Portugal and the prevalence of SMEs in the country, this study examined the management position held by the respondents and its impact on their knowledge and practice of capital budgeting practices (Graham and Harvey 2001; Brounen et al. 2004; Hermes et al. 2007; Truong et al. 2008; Nurullah and Kengatharan 2015).

The results of the present study indicate that the respondent's position is not a significant factor in determining their knowledge or usage of capital budgeting practices. Instead, the majority of respondents reported having knowledge of these indicators, regardless of their position. This was particularly evident in the footwear industry, where most respondents reported not using any indicators, regardless of their position. On the other hand, in the metalworking industry, administrators and CFOs were found to be the primary users of the NPV and IRR indicators.

An innovative aspect of this study was examination of the respondent's ownership status and its relationship with their knowledge and usage of capital budgeting practices. The results show that knowledge of these indicators was relatively consistent regardless of ownership, although application of these indicators was more evident among nonowners in the metalworking industry.

Both industries were found to invest primarily in equipment replacement and production line expansion, as previously noted by Block (1997), Lazaridis (2004), and Danielson and Scott (2006). The lack of specialized HR and perceived low benefits were identified as key factors contributing to the limited knowledge and usage of capital budgeting practices (Lazaridis 2004). Additionally, the limited financial availability often associated with SMEs (Andor et al. 2015) was considered a potential contributing factor.

In terms of complementary indicators, their use in the footwear industry was even more limited, with most respondents using PBP. Similarly, in the metalworking industry, PBP was the most commonly used complementary indicator.

5. Implications, Limitations, Conclusions, and Future Research Perspectives

5.1. Academic Implications

The results of the study suggest that most companies in both industries are aware of capital budgeting practices. However, the level of importance attached to these indicators varies between industries. The footwear industry acknowledges the importance of these indicators, but their usage is low, and many companies prefer to use PBP, in line with the trend observed in European countries. The high rate of nonusage of capital budgeting practices among footwear companies can be attributed to their owners' focus on their businesses' annual financial results, rather than on capital budgeting practices.

In contrast, companies in the metalworking industry use capital budgeting practices more, with NPV being the preferred indicator and PBP being used as a complementary indicator. This result contrasts with the results of previous studies conducted in the USA, Australia, and the Algarve region, where IRR was favored over other indicators.

Most of the administrators surveyed in this study stated that they are knowledgeable about capital budgeting practices, but the biggest challenge to their usage was a lack of specialized human resources. Only 3 out of the 75 respondents reported using capital budgeting practices in their latest investment, which contradicts the claims of 29 respondents that they use these practices. Additionally, this research shows a connection between formal educational achievement and the use of capital budgeting tools, since over time more company managers have attended business schools where capital budgeting techniques are presented and taught.

5.2. Practical Implications

This study provides valuable insights into the capital budgeting practices of SMEs in Portugal, a country comprised mostly of SMEs that are of strategic importance for the country's growth and position in the global economy. The study's uniqueness lies in comparing two central industries in the Portuguese context. The number of companies applying capital budgeting practices is still very low in Portugal, specifically in these two industries, and the increased use of CB may be related to teaching the importance of these techniques in management and business schools, since knowledge through education seems to be related to greater use.

5.3. Policy Recommendations

As a policy recommendation, this research suggests that teaching programs should focus more on the importance of using capital budgeting tools for better decision making on investments by companies to maximize their wealth.

5.4. Limitations of the Study

It should be noted that the conclusions of this study are limited by, on one hand, the comparative and qualitative nature of the research design of the study and, on the other hand, by the limited size of the sample collected, which jeopardizes the generalization of the conclusions to the population. One of the biggest limitations was the lack of collaboration from the companies approached, which confirms the stereotype of SMEs' reluctance to participate in academic research.

5.5. Conclusion and Future Research Perspectives

This study concludes that managers possess knowledge of CB practices but do not apply them, mainly due to a lack of resources. Additionally, the use of CB tools differs between SMEs in different industries, even within manufacturing. Industries with lower plasticity of assets, such as metalworking compared with footwear, use CB practices more. This research also concludes on the importance of the knowledge of CB practices obtained through higher education for their use.

Future studies should address the shortage of specialized human resources as a cause of the nonusage of capital budgeting practices. Additionally, it would be interesting to examine the proper usage and updating of cash flows, the impact of financial constraints on the usage of capital budgeting practices, and the relationship between loan requirements and the use of capital budgeting practices. Furthermore, an enlarged sample size supported by econometric-based studies covering LC and SMEs of several industries would give future research more reliability and generalizability.

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