CSR AND THE FINANCIAL PERFORMANCE OF FLEMISH SMES IN THE MANUFACTURING INDUSTRY

Word count: 16591

Emma Vanparys

Student number: 01703549

Supervisor: Prof. Dr. Heidi Vander Bauwhede

A dissertation submitted to Ghent University in partial fulfilment of the requirements for the degree of Master of science in Business Economics – Corporate Finance

Academic year: 2020 – 2021

Abstract

With the emergence of climate related issues, social responsibility has taken up such a prominent place within the consumer's mind that the act of being held accountable for one's actions has been extended towards companies. While large firms have increasingly integrated CSR practices into their daily operations, SMEs are lagging behind in terms of societal contribution. By having established a predominantly positive linkage between social and financial performance in the existing literature, the benefits of engaging in CSR are widely known for large firms. On the contrary, the CSP-CFP linkage has been left underexplored in an SME setting due to several theoretical and methodological difficulties. As a result thereof, smaller firms are unsure of the financial benefits associated with CSR and often withhold from investing in a social policy.

With this study, we attempt to tackle these difficulties and address this gap in the literature by investigating the relationship between corporate social and financial performance in an SME setting on a sample of 204 Flemish SMEs that are operating within the manufacturing sector. The findings of the study report a non-significant association between social and financial performance, hereby rejecting the hypothesized positive relationship. In an effort to take endogeneity issues into consideration, the CSP-CFP relationship was additionally tested for simultaneous causality, once again delivering no significant results.

Foreword

This master's thesis was fulfilled on behalf of Ghent University as the final assignment to my master's program. First of all, I would like to state that I have taken great pleasure in working on this project over the past year. I enjoyed delving deeper into the literature on corporate social responsibility, as it perfectly reflects what I stand for as a person. With the emergence of climate marches, the topic of corporate social responsibility has become more relevant than ever. As global warming is an issue that relates to every single one of us, people have been increasingly looking for ways to positively contribute to society. As an advocate for the climate myself, I am strongly convinced that transformational changes can be achieved by companies that are engaging in socially responsible activities. The enthusiastic and encouraging messages that I have received from some of the managers that I have contacted with regard to their corporate social performance were reassuring of that. By indicating the importance of CSR and making the link to financial performance, I hope to have provided small firms with an incentive to take on social responsibility and to make a difference.

Additionally, I would like to bring the attention to some people without whom I would not have been able to successfully put an end to this master's dissertation. First and foremost, I would like to take the time to formally thank my supervisor Prof. dr. Heidi Vander Bauwhede for the excellent guidance that she has provided me with over the past year. She was always willing to offer help and to give feedback and ensured that I challenged myself every step of the way. Without her, I could not have reached my full potential nor could I have successfully finished my master's thesis. Furthermore, I want to express my gratitude to the managers of the firms who have spent part of their precious time on participating in the survey that was distributed to them via e-mail. Without their cooperation, I would not have been able to collect data on the topic and it would not have been possible to conduct the research in a proper way. Lastly, I want to thank my parents and my brother for their unconditional love and support throughout my studies. As my brother has already obtained a university degree, he was able to give me some valuable tips on how to properly write a thesis, for which I am very grateful.

Inhoud

List of Abbreviations

3SLS Three Stage Least Squares

AVE   Average Variance-Extracted

CFA   Confirmatory Factor Analysis

CFP   Corporate Financial Performance

CSP   Corporate Social Performance

CSR   Corporate Social Responsibility

EBIT   Earnings before interest and tax

GDP   Gross Domestic Product

KLD   Kinder, Lydenberg & Domini

LEV   Leverage Ratio

OLS   Ordinary Least Squares

RBV   Resource-based View of the Firm

ROA   Return on Assets

SME   Small- and Medium-sized Enterprises

VAT   Value-Added Tax

VIF   Variance Inflation Factor

List of Tables

List of Figures

1. Introduction

Throughout the decades, sustainability has evolved drastically and has become a keyword in today's society. In an attempt to raise awareness of the current climate crisis, the public calls for action by requiring firms to take on corporate social responsibility, which is reflected into a growing implementation of green and social practices (Li et al., 2017). However, as commonly known, the main objective that businesses pursue is value maximization (Friedman, 1970). Therefore, firms are mainly interested in what financial benefits they could gain from engaging in corporate social responsibility and whether those benefits will ultimately cover the costs of having made such sizeable investments (Du et al., 2010). It is precisely for this reason that a lot of existing research has focused on the impact of social performance on the financial performance of the firm.

Although the relationship between corporate social and financial performance has been thoroughly researched in plenty of research papers, the existing literature is marked by a number of gaps and researchers have yet to reach a consensus (Margolis & Walsh, 2003). Previous studies on the topic have led to numerous contradictory findings, with the greater part having established a positive effect (Callan & Thomas, 2009; Guenster et al., 2011; Jo & Harjoto, 2012), some finding a statistically unsignificant relationship (McWilliams & Siegel, 2000; Lee et al., 2018; Lee & Park, 2009; Zhao & Murrell, 2016) and even others noting a negative effect (Konar & Cohen, 2001). Additionally, there is some uncertainty regarding the direction of causality within the social-financial performance relationship (Callan & Thomas, 2011; Farag et al., 2014; Preston & O'Bannon, 1997; Waddock & Graves, 1997; Wagner et al., 2002).

On top of that, the vast majority of research on the linkage between corporate social and financial performance has focused on larger, quoted companies (Aragón et al., 2016). Scholars have typically neglected to take small- and midsized companies into account for a number of reasons. First of all, non-financial info of smaller companies is difficult to obtain, given that they are not obligated to publicize such info, contrary to large firms (SME United, 2020). While some smaller firms voluntarily disclose non-financial reports to the public, personal contact is often required in order to get hold of their CSR policy (Lepoutre & Heene, 2006). Additionally, due to this lack in regulation on an SME level, small companies are inclined to engage far less in social policy-making, taking into consideration that compliance with regulatory requirements serves as the main motivator for large firms to partake in social responsibility (EY investor survey, 2018). Furthermore, in the absence of legislation regarding non-financial info of SMEs, methodological issues have arisen. In particular, it is partially responsible for the lack of valid and reliable measurement tools of social performance that can be applied to a small firm setting (Choi et al., 2018). All of the above arguments have contributed to the fact that the process of conducting research in a small firm setting is considerably more difficult and more time-consuming than when executed with a sample of large, quoted companies, which explains why the linkage in a small firm context has mainly been left unaccounted for.

Secondly, CSR practices are traditionally associated with larger firms. Researchers have typically overlooked SMEs in the past because they believe that smaller firms are limited in their ways of engaging in social and green activities as a result of their size (Lepoutre & Heene, 2006; Russo & Tencati, 2009; Rutherfoord et al., 2000). Especially the cost attached to social and green initiatives becomes more relevant in an SME setting and often gets in the way of establishing a social policy (Gerrans & Hutchinson, 2000 ; Simpson et al., 2004). Researchers claim that SMEs' limited access to time, resources and capabilities may serve as a barrier for full engagement in CSR and therefore, it does not translate into improved performance (Lepoutre & Heene, 2006; Russo & Tencati, 2009; Rutherfoord et al., 2000).

Thirdly, some scholars who do believe that CSR can be applied within SMEs fail to understand the need to make a distinction between research on the social-financial performance setting in a large firm versus small firm context. It is often argued that the findings of studies conducted with large enterprises can simply be copied and transferred to an SME setting, which would render research executed in a small firm context redundant (Morsing & Perrini, 2009; Tilley, 2000). However, this is in no case true. Although Grayson (2004) and Perrini et al. (2007) state that the same basic concepts of CSR apply to both large and small firm settings, social responsibility in SMEs may somewhat differ from large enterprises because of their firm-specific characteristics, varying from ownership structure and sources of funding to the way they manage their daily operations (Barnett & Karson, 1987; Jenkins, 2009; Murillo & Lozano, 2006; Spence, 1999; Vyakarnam et al., 1997). Some of these characteristics may create barriers to engaging in CSR as mentioned earlier or may even carry opportunities with regard to social engagement (Sweeney, 2005). Therefore, it can be stated that the concept CSR may very well be given a different interpretation in a small firm context, which is reflected into their informal approach towards social policy-making (Thompson & Smith, 1991). Moreover, social responsibility potentially relates differently to financial results as well, which is captured by the dominant mechanism through which the social performance influences financial performance of SMEs called the social capital theory (Sen & Cowley, 2013).

In conclusion, we argue that more attention should be devoted to CSR implementation within SMEs, both from a small firm and a researcher's perspective, as there appears to be a general misconception on the potential impact that social responsibility may have in a small firm context. It should be noted that SMEs represent 90% of enterprises worldwide and therefore make up the majority of the business landscape (*World Bank SME Finance*, n.d.). On top of that, they are responsible for more than 50% of employment worldwide and produce up to 40% of GDP in emerging economies (*World Bank SME Finance*, n.d.). These statistics reveal that, even though the influence that small enterprises may have on the environment appears rather limited at first glance, the joint impact of SMEs altogether can be enormous (Gadenne et al., 2009). Moreover, social responsibility has gained significance in the minds of stakeholders to such an extent that as of recently, even smaller companies are being held accountable for their actions towards society (Klewitz & Hansen, 2014). Unfortunately, because the social-financial performance relationship has been underdeveloped within a small firm context, SMEs are unsure of whether they could financially benefit

from implementing social and green practices and are therefore often reluctant to do so (Morsing & Perrini, 2009).

In an attempt to address some of the misconceptions on the social-financial performance linkage and to potentially provide small firms with an incentive to become involved in CSR, we explore the association between corporate social and financial performance in an SME setting. Ultimately, we will ask ourselves the following question: "To what extent are CSR initiatives and financial results related with one another in an SME context?" As relatively little is known on the CSP-CFP topic in a small firm context, we start off from a large firm perspective. Although it is mentioned earlier that social responsibility in large firms might differ from that of SMEs, CSR in both settings is based on the same fundamental principles (Grayson, 2004). Therefore, we compare the existing literature on CSR in both large and smaller companies as this might provide additional insights into how differently these small firms actually perceive social responsibility and whether social performance relates to profitability in a different manner in SMEs.

With this study, we intend to contribute to the existing literature in a number of the following ways. First of all, we expand the discussion on the linkage between social and financial performance topic to SMEs, a context that has been largely ignored over the past decades. In doing so, we account for the potential differences in CSR from large firms. Secondly, while some studies have been executed with samples consisting of smaller firms, they generally suffer from methodological issues which we intend to address in this study. With regard to a tool for measuring social performance, the majority of researchers have taken the approach of a case study (Clarkson, 1991 ; Juarez, 2017; Lee, 2008). Although a case study results in detailed information on individual cases, it raises some questions regarding objectivity and generalization towards the population (Almeida et al., 2017). By using a comprehensive survey instead, we take into account the multi-facetted aspect of the concept CSR while at the same time being able to reach a large sample in order for it to be representative of the population (Reverte et al., 2016). As a result, we have compensated for some of the weaknesses encountered in other research methodologies that can be applied to a small firm setting.

Concerning the measurement of financial performance, scholars are often constrained to the use of a survey methodology for firm profitability. Survey items are considered as a proxy for actual accounting measures due to the fact that in a large proportion of the world, financial statements of SMEs are not gathered within a database (Bagur-Femenias et al., 2013; Cantele & Zardini, 2018). This method has, however, generally resulted in a very low rate of response and therefore once again causes generalization concerns (De Pelsmacker & Van Kenhove, 2019). As an answer to this problem, a survey method was developed where firms were asked to compare their financial performance to that of their main competitors (Clemens, 2006; Martinez-Conesa et al., 2017; O'Donohue & Torugsa, 2016; Torugsa et al., 2012). Nevertheless, this approach has been argued to be less reliable than the actual accounting data retrieved from financial statements because of reference frame issues (Burke et al., 2000). Fortunately, the Belgian database Bel-first has collected companies' annual accounts and has managed to incorporate SMEs as

well, providing us with access to several financial building blocks necessary to calculate the accounting measures for SMEs (*Bel-First | Belgium & Luxembourg Company Data | Bureau van Dijk*, n.d.). As a result, issues associated with survey methodologies of financial performance do not have to be addressed. In conclusion, through the combination of a self-reported measure and archival accounting data, we aim to deliver results that are more reliable and that are a better depiction of reality.

Thirdly, aside from the lack of consensus on the findings of the relationship, the direction of causality of the CSP-CFP relationship has yet to be addressed extensively and adequately (Callan & Thomas, 2011; Preston & O'Bannon, 1997; Waddock & Graves, 1997; Wagner et al., 2002). While the existing literature has predominantly focused on the impact of social performance on financial performance of firms, it has largely ignored the potential simultaneous influence of a firm's financial performance on its social policy (Wahba, 2008). When left unaddressed, possible endogeneity issues may arise which can result in biased parameter estimates of variables included in the main model and thus a misspecified model (Tobin, 1958). In an effort to account for endogeneity concerns, the simultaneous character of the social-financial performance linkage is studied in an additional test through the use of simultaneous equation modelling, a technique that is relatively new to the CSP-CFP environment (Callan & Thomas, 2011; Farag et al., 2014; Wagner et al., 2002; Zhao & Murrell, 2021). Lastly, while research on the corporate social-financial performance linkage has been executed within different countries and samples, a study has yet to be performed, to our best knowledge, specifically with SMEs active in the manufacturing industry in Flanders, a subregion of Belgium. Conducting the CSP-CFP research in different settings is argued to be relevant because cultural differences can be a determinant of the strength of the mechanism through which corporate social and financial performance influence one another (Wang et al., 2015).

The paper itself will be organized as follows. Firstly, an overview of the existing literature will be provided in order to be able to construct a hypothesis on the corporate social-financial performance linkage. In the next section, the research design is presented and after the data collection, the hypothesized relationship is tested. Finally, the paper will conclude with the results of our study, along with a discussion on some of the limitations and implications for future research.

2. Literature Review

2.1. Evolution of the Concept CSR

CSR has become an increasingly important topic of discussion in the last few decades. Due to global warming and climate issues, people have become more aware of their environment and what changes they could implement in order to decrease their ecological footprint. Higher expectations were set with regard to social responsibility for individuals as well as for companies (Li et al., 2017). Firms are now being held accountable for their actions, as they are one of the biggest sources of global pollution (Beurden & Gössling, 2008). This is where CSR comes at stake. Defining corporate social responsibility has proven to be a rather difficult task as there are so many different aspects and dimensions to this concept (Carroll, 1999).

Many have tried to define this intricate notion, all portraying different elements which led to a lack of a universal understanding of the concept CSR (Latif & Sajjad, 2018). Fortunately, Dahlsrud (2008) attempted to merge these definitions into a single one by executing a meta-analysis where he observed the points of parity between the 37 most relevant definitions. He noticed there were 5 dimensions that nearly all seemed to have in common: the stakeholder dimension, the social dimension, the economic dimension, the voluntariness dimension and the environmental dimension. How a company accounts for several of its stakeholder groups is called the stakeholder dimension. Freeman (1984) defined the concept stakeholder as ''any group or individual who can affect or is affected by the achievement of the firm's objectives''(p. 47). These stakeholder groups ensure that the company takes responsibility for its actions and should be kept in mind when making decisions that can possibly impact them (Jones et al., 2018). The social dimension refers to the firm's relationship with society. Next to the social dimension, the economic dimension considers the financial outcomes of the CSR decisions. The voluntariness aspect comprises actions that are not required by the law and that are thus executed by choice. Last but not least, there is the environmental dimension which discusses the care for the firm's surroundings.

The concept CSR has underwent an enormous transformation and is still evolving to this day (see Table 1). It has become more and more demanding, nowadays requiring a proactive and innovative adjustment of the firm's core strategy in order to optimize the impact on the firm's environment (Visser, 2010). The fact that CSR is still such a broadly defined concept up to the present time can be attributed to the different perspectives from which social responsibility can be observed. To put it into the words of Carroll (1999, p.280): "it means something, but not always the same thing, to everybody." Depending on the context that they are operating in and the challenges that they are faced with on the daily, companies create an own perception on social responsibility, in particular one that is tailored to their specific situation (Marrewijk, 2003). In the next section, this discussion will be expanded by comparing the different perceptions on CSR in both a small and large firm context.

Table 1 *Evolution of CSR*

AUTHOR	DEFINITION
Bowen (1953)	CSR as an obligation, being compliant with the law
Davis (1960)	CSR as a moral obligation beyond the financial interest
Carroll (1979)	Four dimensions of CSR: economic, legal, ethical and philanthropic
Freeman (1984)	Managerial implications: focus on the importance of stakeholders
McWilliams & Siegel (2001)	Focus on the business outcome of CSR
Porter & Kramer (2006)	CSR as a source of competitive advantage, shared value creation
Visser (2010)	Drastic reorientation of a business's purpose

Source: own elaboration

2.2. Comparing CSR in Large Firms and SMEs

2.2.1. Differences from Large Firms and Implications for CSR

As mentioned earlier, small firms are typically not pressured into taking on social responsibility because it is stereotyped to only apply to large firms (Lepoutre & Heene, 2006; Russo & Tencati, 2009; Rutherfoord et al., 2000). As a consequence thereof, their level of social engagement usually remains relatively low, which has left the CSR subject within an SME context underexplored (Vo, 2011). In the event that small firms do implement social practices, their CSR policy is argued to differ from that of large firms as a result of their firm-specific characteristics. In other words, there are some dissimilarities between large and small firms that cause somewhat of a different outlook on social responsibility (Russo & Perrini, 2010). First off, small businesses rely heavily on internal sources such as the owner's savings in order to obtain financing while large enterprises can attract funding via external sources (Spence, 1999). Moreover, smaller firms tend to be more intensely managed by the owner and are far more personalized. Because of this lack of separation between ownership and management, the entrepreneur's values and views are largely reflected into the strategy pursued by the firm (Barnett & Karson, 1987). Lastly, while large companies strive towards globalization, small enterprises are often limited to local operations (Vyakarnam et al., 1997). Due to their locality, they are often heavily involved in the near community (Murillo & Lozano, 2006). As a result of these characteristics, CSR may be interpreted differently in an SME setting. However, Grayson (2004) stated that, even though differences in firm characteristics may lead to a different CSR approach, the main concept of what is to be achieved with CSR remains the same in both firm settings. This may result in a number of overarching similarities in the two contexts. Therefore, as not much is known on the topic in SMEs, it may be interesting to start off from a large firm perspective and see where the differences and

similarities lie and to see what applies to small firms specifically. In the next section, some of the benefits and costs related to social initiatives will be discussed.

2.2.2. Benefits and Costs of CSR

There are a number of reasons why companies decide to implement a CSR strategy into their daily operations, one of the most common factors in both a small and large firm context being the economic incentives. However, there are still many firms who are unsure of the potential positive effects that CSR can have on the firm's performance, with some arguing that the costs associated with implementing such proactive CSR policies exceed the benefits (Sprinkle & Maines, 2010). In this section, an overview is given of some of the most relevant benefits and costs that are associated with CSR initiatives in order to be able to provide some clarity on this debate. Ultimately, all of the arguments that were mentioned are summarized in the table below (see Table 2).

First of all, taking on social responsibility can strengthen the company's reputation and image. Customers will be more inclined to buy and recommend products/services from a certain company when their personal set of values align with that of the company (Sharma et al., 1999). Secondly, having a clear vision on CSR as a company may carry potential contracting benefits (Weber, 2008). This notion is supported by the signaling theory introduced by Rynes (1991): firms who actively engage in CSR activities are perceived as more attractive towards potential candidates in the job selection process as it gives them a positive overall idea of what it would be like to work in such a company and how they would be treated as an employee (Turban & Greening, 1997). Next to attracting employees, it is less challenging to keep valuable employees from leaving the firm when they feel a sense of pride in what they are accomplishing within the company (Sprinkle & Maines, 2010). This phenomenon is typically called the social identity theory (Ashforth & Mael, 1989).

Thirdly, implementing green initiatives into a company's core strategy can, in some cases, cause a reduction in overall costs for the company due to an efficiency increase (Epstein & Roy, 2001). When companies involve stakeholders in a proactive way, the exchange of expertise between those parties can lead to the establishment of a new knowledge base that generates innovative ideas and practices (Hart & Dowell, 2011). However, implementing green and social initiatives into a company is often paired with large expenditures such as having to build extra infrastructure and facilities, ultimately leading to employees having to take on extra job responsibilities. Overall, all of these investments will put a drain on the company's available resources (Duanmu et al., 2018). Last but not least, investments made for social or environmental purposes can serve a purely strategic purpose, as it may be part of a firm's differentiation strategy Porter (1991). CSR initiatives can attract the attention of stakeholders and could especially serve as an advantage in a heavily competitive environment (McWilliams & Siegel, 2000). However, there is a flipside to the coin. Investing in environmental initiatives may be associated with opportunity costs if the implementation is not successful. As mentioned earlier, establishing a CSR strategy inevitably creates

sizeable costs for companies but whether those investments ultimately pay off is rather uncertain and depends on various internal and external factors (Zhang et al., 2020).

To conclude, there is a trade-off between the benefits and costs of social initiatives (Haffar & Searcy, 2017). CSR might be a huge success for certain companies and be the cause of a competitive advantage if well implemented and well adapted to the company's specific context. However, if firms are not creative enough when it comes to discovering which CSR policy might work best for their business specifically or if they don't succeed in integrating these kind of policies into their core business strategy, implementing CSR might actually do more harm than it does good and could in the end even lead to an increase in costs for the firm.

Table 2 *Benefits and costs of CSR*

BENEFITS	COSTS
Employee selection and retention	Sizeable investments
Increase in efficiency and innovativeness	Opportunity costs
Strategic differentiation	
Reputation and sales	

Source: own elaboration

2.2.3. Barriers and Opportunities for CSR in SMEs

It should be noted, however, that the pay-offs of social policies in SMEs may somewhat differ from large firms, as well as the manner in which CSR is implemented into the firm. This can be attributed to the firm-specific characteristics that were touched upon earlier. Some of these characteristics may restrict smaller firms' engagement in social responsibility while others may carry opportunities with regard to CSR (Sweeney, 2005). In a survey conducted with Australian SMEs, Gerrans and Hutchinson (2000) came to the conclusion that the cost-benefit issue concerning social and green practices is even more relevant in an SME setting than in a large firm context. It is often far more challenging to engage small firms in social and green policy-making for the sole reason that they fear that the benefits will not be sufficient to cover the costs of the sizeable investments (Simpson et al., 2004). Taking into account that smaller firms tend to have a less stable financial position and therefore are less resilient to macro-economic shocks, the price tag attached to CSR initiatives is of crucial importance to them (Vo, 2011). Oftentimes, their sole focus is to survive in the market and less so to do good for society (Lepoutre & Heene, 2006). Another argument that can hold small firms back from participating in social responsibility is the time consideration. Managers of such SMEs often perform long hours on the work floor which indicates that they have little to no time to engage in social policy-making (Rutherfoord et al., 2000). Although the significant costs may withhold them from investing, small companies are also aware of the fact that not participating in CSR might have severe negative consequences for their business. As most multinational companies cooperate with SMEs in their supply chain nowadays, increasing attention from stakeholders has gone out to social responsibility in a company's entire supply chain (Valdez-Juárez et al., 2018). As a result of this, it could be the case that small firms who have yet to establish a CSR policy face the risk of not being contracted by these multinationals, resulting in a significant cut on profits (Morsing & Perrini, 2009).

On the other hand, small enterprises also benefit from a number of opportunities regarding CSR policies. When asked about the advantages that smaller firms hold over them in terms of CSR, large firms responded with two main arguments (Perez-Sanchez et al., 2003; Sarbutts, 2003). First of all, due to their characteristics, SMEs have a closer connection to all their stakeholders. As a consequence of this, they can build and maintain meaningful relationships with these stakeholders more easily and rapidly. At the same time, it should be noted that due to resource and time constraints, they are forced to focus on a smaller array of stakeholders who appear to be the most dominant. This implies a bigger emphasis on employees, customers and suppliers and less so on the community which in itself imposes a restraint on the small firm's CSR policies (Lepoutre & Heene, 2006; Spence, 1999). Secondly, their structure allows them to be significantly more flexible than large companies which implies that they can reply to and satisfy customer needs at all times (Fuller & Tian, 2006).

Furthermore, SMEs' specific characteristics may also cause the adoption of a different approach and vision towards social responsibility compared to large enterprises. One of the most important observations is that small firms rely too heavily on informal CSR tools (Murillo & Lozano, 2006). In other words, companies in

an SME setting are often more personalized and tend to have a closer connection to the local community which is reflected into their outlook on social responsibility. They think highly of ethical concepts such as trust, honesty, openness and tend to undergo long-term relationships with their partners and attach less value to systemic approaches in order to tackle the social responsibility paradigm (Fassin, 2008). In essence, smaller firms tend to engage naturally in social policies and implement it into their daily operations while lacking a sound plan in terms of CSR (Vives, 2006; Vo, 2011). They typically experience a lack of formal tools such as codes of conduct, mission statements, standards, reports, etc. (Russo & Tencati, 2009). This can be ascribed to the fact that the larger part of small companies seem to be unaware of current legislation and existing practices that help guide the company on its journey towards a well-established social policy (Gerrans & Hutchinson, 2000). This is rather unfortunate, considering that most companies view these tools as motivations to engage in CSR and guidelines on how to implement a social policy (Fassin, 2008).

2.2.4. CSP and its Measurement Tools

As the topic of social responsibility has been addressed in both a small and large firm context, the link with financial performance can now be discussed in both settings. Before starting off with a literature overview on the CSP-CFP linkage however, an appropriate measure of corporate social performance is needed. It should first be noted that corporate social responsibility and corporate social performance often get confused with one another in the existing literature, however, there's a subtle, yet meaningful difference between these two concepts. Corporate social responsibility merely describes activities that are undertaken out of a sense of responsibility towards the society as a whole and therefore, it is an abstract concept that cannot be measured (Schreck, 2011). To solve this issue, the notion corporate social performance was introduced. Although its name indicates so, CSP doesn't solely focus on society but comprises all of the dimensions of CSR (Schreck, 2011). Similar to CSR, attaching a correct definition to the concept CSP has proven to be quite the troublesome task in the past. However, the existing literature seems to have made a distinction between two main streams of thought: process-based CSP and outcome-based CSP (Endrikat et al., 2014). Wood (1991, p.693) conceptualized outcome-based social performance as "a business organization's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's societal relationships. Process-based CSP on the other hand is defined as "an aggregation of a firm's individual acts of CSR up to that point" (Muller & Kolk, 2010, p.3). To conclude, both of the definitions clearly indicate that CSP is a measurable concept, in contrast to CSR (Agudo Valiente et al., 2012). Considering that measurements will be performed in this paper, the following section will deal with social performance rather than social responsibility. As process-based CSP measures are dominant in the existing literature and little research has been put into outcome-based CSP measures, this paper will take a process-based perspective on social performance (Salazar et al., 2012).

Although accurate measurement tools for corporate financial performance are relatively straightforward and readily available, the same thing cannot be said about the tools for corporate social performance. It is safe to state that CSP measurement tools for SMEs are still in the beginning stages of development. A wide variety of tools seems available at first glance, nevertheless, they are limited in a number of ways (Gallardo-Vázquez & Sanchez-Hernandez, 2014). The main problem encountered when trying to measure the CSR practices of a company is attempting to find a measurement tool that is reliable and valid, taking into consideration the multi-facetted aspect of CSR and the fact that the concept can be interpreted in many different ways depending on who looks at it and from which perspective it is looked at (Carroll, 1999). Several methods that have been adopted in previous research are listed below. As the vast majority of methodologies apply to large firms, it might be interesting to start off from a large firm perspective and check whether or not application in an SME context would be attainable.

As claimed by Maignan & Ferrell (2000), there are three main approaches to measuring the social performance of large firms, with the first category consisting of expert evaluations. According to this method, experts in a certain field assess the level of CSR that is held by a firm based on a handful of indicators (Martínez et al., 2013). This is why they are often also referred to as reputation indices or databases. Somewhat later in time, Chen & Delmas (2011) expanded on this view and mention that more recent studies have aggregated these indicators in order to create an overall score for CSP. However, one of the biggest issues with this type of evaluation is that subjective indicators are continually being selected in order to evaluate corporate social performance (Turker, 2009). The most well-known measure belonging to this first category is the KLD index (MSCI KLD 400 Social Index, 2011)[1]. Unfortunately, reputation indices such as the KLD index are typically only created for some of the largest publicly traded companies and therefore exclude SMEs. Furthermore, they are limited to a single context given that only American firms are considered for these ratings. A second approach to measuring social performance concerns single-issue indicators (Maignan & Ferrell, 2000). This methodology relies on a single indicator to assess the degree of social responsibility held within a firm. Charitable giving is considered one of the most commonly used single indicators in an SME setting, however, it is hard to grasp the multidimensionality of the concept CSR with only a limited set of indicators (Choi et al., 2018). The last approach consists of surveying organizational members. When measuring CSP via scale analysis, the participants have to indicate to what extent they agree or disagree with the statements being presented to them regarding the CSR policy held by their company (Graves & Waddock, 1994). The main disadvantage attached to this type of methodology is that it tends to result in subjective measures of social performance (Maignan & Ferrell, 2000). Moreover, the rate of response on a survey is generally rather low, which raises some questions regarding the generalizability of the results (Aragón et al., 2016).

---

[1] The KLD index is a stock index developed by Kinder, Lydenberg and Domini and was especially designed to help ethically aware investors in making the right investment decision. The KLD index gives 400 publicly traded US companies a rating on the following dimensions: governance and ethics, customers, community and society, environment and lastly, employees and supply chain (MSCI KLD 400 Social Index, 2011). Similar to credit ratings, any rating above or at BB is considered investment grade.

Expanding on the classification provided by Maignan and Ferell (2000), content analysis is an alternative way of measuring the degree to which a company engages in corporate social activities (Lock & Seele, 2016). However, since the publication of non-financial reports is only required of large, quoted companies in Europe, content analysis would not be an appropriate measurement tool in the context of SMEs (*Reporting of Non-Financial Information by SMEs*, 2018). A potential solution in an SME setting could consist of consulting company websites and seeing whether or not any info on green initiatives is disclosed. However, this is a rather time-consuming process and in the end, it will only yield a small amount of results. Another common research methodology is the case study. A case study is a form of qualitative research and aims to analyze a company in-depth in order to obtain findings that can be generalized to other companies in the population (Tellis, 1997). In this case, an in-depth interview could be conducted with a limited number of firms regarding their CSR policy to eventually make a general conclusion about the outlook on social responsibility within the population. A case study is especially popular in research conducted in an SME environment as smaller firms often don't disclose non-financial info publicly. However, this type of method yet again raises some questions regarding objectivity and whether or not the results can be generalized to the entire population (Simon & Goes, 2013).

The level of corporate social performance could further be measured in terms of a ranking of awards that a company has achieved for its CSR initiatives. In the Belgian setting specifically, several awards are being presented to the business environment, including the Belgian Business Award for the Environment, the Award for the Best Belgian Sustainability Report and the title of "CSR Professional of the Year" (*Belgian Business Awards for the Environment*, 2020; Awards for Best Belgian Sustainability Reports 2018, 2019; *CSR Professional of the Year 2020*, 2020). However, there is an issue with measuring CSP in terms of a ranking of awards received. More specifically, it is unclear what indicators would ultimately determine such a ranking. Whereas one possibility could consist of focusing on the amount of awards received, another option is to fixate on the importance of the awards. This essentially implies that a ranking based on awards is yet again a subjective method that relies on the perspective of the researcher.

When taking a look at an overview of CSP measures, it appears that the majority of researchers have relied on the KLD methodology by default in the past (Waddock & Graves, 1997; Wood, 2010). However, the KLD index, as well as a number of other measures, cannot be applied in an SME context for the simple reason that these methodologies rely on publicly available non-financial info. As a result, the number of tools that are appropriate for a small firm context are limited. The options that can be adopted in smaller firms, however, suffer from severe validity and reliability issues (Choi et al., 2018). Because a tool that accurately captures the social performance of small firms has not been developed yet, measures of social performance have been inconsistently used throughout SME research, contributing to the dividedness on the social-financial performance association in the existing literature (Callan & Thomas, 2009). The most widely used methodologies in SMEs include case studies, surveys and single-issue indicators such as charitable giving (Choi et al., 2018). Unfortunately, these methods suffer from severe limitations.

Nevertheless, in this paper, a survey will be used to measure corporate social performance as this method best captures the multi-dimensionality of CSR while still managing to reach a fairly large audience, hereby compensating for the disadvantages of the other measurement tools. Now that all the building blocks of corporate social responsibility have been addressed, the link can be drawn to a company's key financials.

3. Theoretical Framework

Earlier on, it was mentioned that companies can turn social initiatives into a competitive advantage that can ultimately have an impact on the firm, both financially and non-financially. In this section, the linkage between the corporate social and financial performance of a firm will be discussed. This topic is particularly relevant in the following sense: if the findings on the linkage are positive, then this may act as a motivation for companies to pursue a socially responsible strategy, resulting in firms that are behaving more and more ethically towards society aside from exclusively chasing financial incentives. However, as stated earlier, very little is known on the linkage between social and financial performance in an SME context. Therefore, a large firm perspective will once again serve as a starting point in order to potentially act as a basis for comparison. It may, for example, allow us to identify (dis)similarities between both settings and whether or not the same conclusions can be drawn in smaller firms.

3.1. General Misconceptions on the CSP-CFP Link

In the introduction, it was briefly touched upon that the relationship between social and financial performance in large firms has been highly researched but is also heavily debated. As indicated earlier on, this study aims to overcome some of these misconceptions and wishes to provide clarity on the social-financial performance linkage within an SME setting. First off, the causal direction of the relationship has remained relatively ambiguous. In order to answer the question of whether social performance influences social performance or vice versa, Margolis and Walsh (2003) performed a meta-analysis on the topic by collecting and analyzing all of the previous research published between 1972 and 2000. Their findings are in favor of the dominant perception within the literature considering that in 109 out of 127 studies, CSP has been treated as the independent variable whereas firm performance is assumed to be the outcome variable. These results reveal that little to no research has been devoted to the inverse relationship where CSR is considered as an outcome variable. This, however, does not exclude the opposite premise from occurring, especially considering that evidence has been found supporting a positive effect of financial performance on social performance (Endrikat et al., 2014). As there are clear indicators of a gap in the literature, some light needs to be shed on the potential bi-directional nature of the CSP-CFP relationship.

Secondly, previous research has proven to be inconclusive with regard to the results, as can be derived from the overview of both large and small firm findings that is provided in the attachments (see Attachment 1). Although the majority of studies have stumbled upon a positive effect (Callan & Thomas, 2009; Guenster et al., 2011; Jo & Harjoto, 2012), others remarked a negative effect (Konar & Cohen, 2001) and

even others noted there was no significant direct effect of social performance on financial performance (McWilliams & Siegel, 2000; Lee et al., 2018; Lee & Park, 2009; Zhao & Murrell, 2016). It is argued that the ambiguity in the results of previous research can be ascribed to incorrect and/or incomplete empirical research (McWilliams & Siegel, 2000). First of all, most studies assume a direct association but what is often lacking in existing research is the presence of mediating and moderating variables. Adopting a mediation-moderation approach is rather important as it reflects the complex nature of the CSR-financial performance linkage far better (Saeidi et al., 2015). On top of that, numerous studies have misspecified the main model due to the omission of important control variables in the model (Mcwilliams & Siegel, 2000). As a consequence of this, the results were largely under- or overstated which led to a distorted view on the nature of the linkage between social and firm performance. Additionally, there have been a variety of issues concerning the measurement of the variables included in the model. For example, plenty of researchers have adopted unreliable measurement tools for CSP as well as for CFP (Burke et al., 2000; Callan & Thomas, 2009). Adding to this, the existing literature is characterized by an inconsistent use of social and financial measures which has contributed to the difficulty of comparing findings with one another (Aupperle & Wolfe, 1991). Another common issue concerns the research methodology applied in the study and is mentioned by Callan and Thomas (2009). Some studies have applied linear regression to the relation without testing beforehand whether the requirements of such a technique are met within this model and as a result, the reliability of the results is compromised. Lastly, Lindgreen et al. (2009) remarked that sample sizes in existing research are far too small to generalize findings of such studies to the entire population.

3.2. Hypothesis Development

Before starting off with the research however, a hypothesis that is derived from theory needs to be formed so it can be tested. Earlier on, it was mentioned that prior research has provided evidence for the existence of a positive, negative, neutral and even curvilinear association between social and financial performance. In this section, an overview will be provided of several theories upon which these different relationships between CSP and CFP are built.

In the case of a positive linkage, stakeholder theory, which was established by Freeman (1984), is unarguably one of the most prominent theories in a large firm context. Stakeholder theory essentially states that, for a company to become successful and to be able to create value, it should take its stakeholders' demands into account when making decisions (Brammer & Millington, 2008). One of the most important ways to satisfy stakeholder needs is through engaging in social activities (Peloza, 2009). Even though the link between social and financial performance in large firms can be largely explained through the application of stakeholder theory, it is deemed less relevant and is also less implemented in an SME setting as stakeholder satisfaction is not considered one of the main drivers of small firms' CSR engagement (Sen & Cowley, 2013). Rather than satisfying stakeholders, the owner's own values mostly serve as motivation to engage in CSR within SMEs. On top of that, smaller firms tend to only focus on a limited set of dominant stakeholders when making decisions (Morsing & Perrini, 2009).

Aside from stakeholder theory, the resource-based view of the firm is often raised in a large firm setting and can be applied in the context of smaller firms as well. This theory suggests a framework for which resources the firm can utilize in order to create a sustainable competitive advantage towards its competitors (Wernerfelt, 1984). An important implication of this theory is that it not only considers tangible resources but intangible resources such as know-how, goodwill and reputation as well. Simply put: the firm's (in)ability to deploy its assets will determine whether it has a competitive advantage and how it will perform in the long run. In the context of CSR, the RBV simply utters that companies who have built an extensive resource base regarding green and social initiatives possess knowledge that cannot be imitated and this will provide them with an advantage over the rest of the competition in terms of performance (Hart & Dowell, 2011). As a result of this, the resource-based view provides evidence for a positive link between social and financial performance.

Nevertheless, it is argued that another theory predominantly applies to SMEs called the social capital theory. Much like CSR, social capital is an intricate concept that can be interpreted in many ways. However, the dominant perception in the existing literature is provided by Putnam (1993). As its name indicates, the theory is built around social capital, which can be defined as the following: "Whereas physical capital refers to physical objects and human capital refers to the properties of individuals, social capital refers to connections among individuals—social networks and the norms of reciprocity and trustworthiness that arise from them… that can improve the efficiency of society by facilitating coordinated actions" (Putnam, 1993, p. 167). Social capital theory is especially relevant in an SME setting due to the nature of such firms: they experience several difficulties attributable to their size such as lower economies of scale which is something that large companies do not tend to experience (Spence & Schmidpeter, 2003). Social capital is therefore seen as a compensation for the shortcomings encountered in an SME setting. In order to be able to survive the market competition, they depend heavily on the network that they have built out to provide them with assistance and resources when necessary (Murillo & Lozano, 2006). Networks are beneficial for all parties involved, with mutual benefits varying from an extended product or service range to faster response times (Goffee & Scase, 1995).

The following two-way conclusion can be drawn from the social capital theory: CSR can be considered as both an input and outcome of social capital. First of all, firms who engage in socially responsible initiatives, especially when directed towards the local community, tend to have easier access to networks and therefore engage far more often in social capital building (Sen & Cowley, 2013). On the other hand, social capital building can result in developing sustainable relationships with stakeholders as it may give firms access to resources necessary to engage in social activities (Aragón et al., 2016). Aside from this bi-directional relationship between social capital and social responsibility, the social capital theory also relates social performance to financial performance (Spence & Schmidpeter, 2003). In other words, it was mentioned earlier that engaging in corporate social activities would result in lower barriers of entry to networks (Sen & Cowley, 2013). When firms are part of a well-established social network, they get access

to the knowledge and resources shared by the members of these networks. These (in)tangible assets can become a source of competitive advantage for the firm and will eventually reflect positively into its financial performance (Stam et al., 2014). Therefore, social capital theory expects a positive relationship between CSR and firm performance in SMEs.

Rather surprisingly, the current literature on smaller firms has failed to mention some of the frameworks that may predict a negative, curvilinear or non-significant association between corporate social and financial performance and therefore, they will be briefly mentioned here. First of all, the trade-off theory touched upon by Preston and O'Bannon (1997) proposes a negative relationship between CSP and CFP. It provides evidence for the traditionalist view of Friedman (1970) that social practices generate unnecessary costs that will ultimately put the company at a competitive disadvantage (Perrini et al., 2011). In contrast, Wang et al. (2008) established a curvilinear relationship by taking on a cost-benefit approach. When comparing the costs and benefits of social responsibility, they concluded that the link between the environmental and financial performance of a firm would follow an inverted U-shape. By reconciling the divergent paths of benefits and costs, they identified that at a certain point in time, performance decreases when more and more green initiatives are being implemented as the costs are becoming more dominant than the benefits. Performing a similar cost-benefit analysis, McWilliams and Siegel (2000) came to the conclusion that the benefits of social engagement would be leveled off by the costs and therefore predicted a non-significant relationship.

In order to assess what kind of relationship might be expected between corporate social and financial performance, results of previous studies on the CSP-CFP link are taken into account. The majority of research conducted in both large and small firm settings have discovered a positive yet small linkage between CSP and CFP, which has been confirmed by numerous meta-analyses conducted on the topic (Beurden & Gössling, 2008; Margolis et al., 2009; Orlitzky et al., 2003). This, combined with the fact that only theories predicting a positive relationship have been discussed within an SME context and that the social capital theory is tailored specifically to smaller companies, has led to the following relationship to be hypothesized:

H_1: Corporate social performance is positively associated with the financial performance of SMEs.

4. Research design

4.1. Variables

4.1.1. Independent Variable

Now that a hypothesis has been formed, a model consisting of several variables can be built to test this hypothesized relationship. As stated earlier, finding a reliable measure for corporate social performance is a difficult task, especially in an SME setting. However, a survey was deemed most appropriate in this context considering that it captures the multidimensionality of the concept CSR while also being able to reach a large enough sample. Both of these items get compromised when using other measurement methods. The scale that is applied in this research was retrieved from the work of Reverte et al. (2016) and can be found in Attachment 2. It contains 27 scale items[2], touching upon the social, economic and environmental dimension of corporate social responsibility and therefore following the triple-bottom line approach introduced by Elkington (1994). The scale was designed to cover the different types of activities that can be undertaken by firms in terms of social responsibility. As the scale has been applied to a small firm setting before, it was deemed relevant for this study. Managers were asked on a 5-point Likert scale to indicate to what extent they agree with the statements presented to them, ranging from total disagreement (=1) to total agreement (=5). The survey was translated into Dutch in order to avoid any miscommunication or misunderstanding. The translation of the survey was checked and corrected professionally to ensure conceptual equivalence. To establish whether or not respondents filled out the survey with undivided attention, two control questions were included[3] (De Pelsmacker & Van Kenhove, 2019).

4.1.2. Dependent Variables

In contrast to measuring social performance, the measurement of financial performance is rather straight-forward. Performance can be evaluated by means of market-based measures or accounting measures. Whereas market measures focus on the market's evaluation of a firm, accounting measures highlight the firm's key financials (Guenster et al., 2011). Calculating such a market measure is rather difficult in an SME context as the majority of smaller firms are not quoted and therefore aren't valued by the market. This means that assumptions have to be made and rules of thumb are usually applied in order to obtain the building blocks necessary for market valuation, ultimately leading to somewhat inaccurate estimates (Damodaran, n.d.). Therefore, accounting measures are used in this study to assess the financial performance of SMEs. Furthermore, it is important to specify that the firms' financial performance will be evaluated based on measures of profitability and in particular, through the use of return on assets and the

---

[2] An overall score for CSP was created as following: for each individual respondent, the average responses to the three dimensions were calculated and then afterwards, the mean was taken of the individual dimensions to obtain an overall score (Van Kenhove & De Pelsmacker, 2019).

[3] Two controls were included with the aim of deleting inattentive respondents' survey entries. First of all, a question was inserted within the actual scale, asking respondents to indicate total disagreement. At the end of the survey, respondents were asked to indicate to which financial year the survey applied.

sales growth. Whereas the return on assets was simply calculated as the EBIT divided by total assets, the sales growth deemed somewhat harder to calculate, considering that SMEs who partake in reporting according to the abbreviated format of financial statements do not have to disclose information on sales (Ooghe et al., 2017). Therefore, the sales growth was proxied by the growth of the companies' gross added value, in line with the research of Schoonjans et al. (2013).The added value growth was calculated as the difference between the gross added value[4] of 2019 and that of 2018, divided by the 2018 value.

4.1.3. Control Variables

This study accounted for several control variables of firm profitability in accordance with (De Schoenmaker et al., 2013). Five variables were controlled for: firm size, firm age, leverage, current ratio and industry. Even though research was conducted in a small firm setting, firm size was still accounted for because of the wide range of sizes that can be classified under the term SME (O'Donohue & Torugsa, 2016). In conformity with Wang et al. (2008), firm size is proxied by the natural logarithm of the firm's total assets plus one, in an attempt at making the data more normally distributed. Firm size can have both a positive or negative impact on firm profitability. First of all, large firms can take advantage of economies of scale and eventually, this will enhance the firm's profitability (Abiodun, 2013; Pervan & Višić, 2012). Nevertheless, some scholars have found evidence supporting the opposite premise that firm size negatively affects indicators of profitability, especially with regard to sales growth (Almus & Nerlinger, 1999; Kartikasari & Merianti, 2016; Yasuda, 2005).

As argued by Wahba (2008), firm age should be controlled for as well, as it may impact the association between corporate social and financial performance. Following the same reasoning applied to the case of firm size, firm age was calculated as the natural logarithm of the difference between the current year and the year that the company was founded plus one (Huynh & Petrunia, 2010). A company of growing age is argued to be less flexible and more resistant to changes, a phenomenon that is typically called the organizational rigidity hypothesis (Loderer & Waelchli, 2010). Therefore, a negative relationship is to be expected between age and both measures of performance. In order to control for the effect of liquidity on financial performance, the current ratio was included. This ratio is calculated by dividing the company's current assets by its current debt (Wang et al., 2008). Concerning liquidity, the current ratio is expected to positively relate to the firm's performance. A higher ratio indicates higher financial stability because of a lower risk of not being able to cover the short-term obligations and therefore, it serves as a buffer for unexpected events (Saleem & Rehman, 2011).

---

[4] The gross added value was calculated as the difference between the recurring operating income and the intermediate consumption for companies that reported according to the full model of the annual accounts. For companies reporting according to the abbreviated model, the added value was calculated as the gross margin minus the non-recurring operating income.

Moreover, as a company's profitability is heavily influenced by its solvency, a leverage ratio is incorporated in the model, measured as the firm's total debt divided by its total assets (Huynh & Petrunia, 2010). Generally, a negative relationship between leverage and measures of profitability is established in the literature. The reasoning behind this is that firms with high levels of debt face an increasing risk of financial distress and consequently, this will negatively impact the company's performance (Ahmad et al., 2015; Lang et al., 1996). On the other hand, engaging more in debt financing increases the company's investment opportunities which may positively contribute to firm growth (Kartikasari & Merianti, 2016; Schoonjans et al., 2013). Even though the study is executed within the manufacturing sector, industry should be accounted for as well considering that performance may differ depending on the type of manufacturing firm. As the sample contains manufacturing firms that are active in 18 different sectors, computing dummy variables is not deemed an appropriate way of incorporating industry into the model. To quote Goggin (1986, p.328), a similar occurrence of events would result in "too many variables for too few cases". Therefore, similar to Schoonjans et al. (2013), a control variable industry was included, capturing the median growth rate of the industry[5] to which each firm belongs.

4.2. Sample Description

As the variables have been defined, data can be collected as of now. First, however, a description of the sample methodology should be provided. The research on the link between CSP and CFP within small firms is conducted in a Belgian setting for a number of reasons. First of all, the Belgian landscape is characterized by a large presence of SMEs which is the target of this study. According to statistics provided by Eurostat, the average number of SMEs per 1000 inhabitants in Europe amounted to 58 in 2018 (Internationale Vergelijking van Het Kmo-Landschap | FOD Economie, 2020). Belgium somewhat surpassed this European average with a number of 64. Adding to this, the amount of VAT liable SMEs in Belgium has increased from 2018 to 2019 with 3,5%, making it an appropriate setting for this research paper (Statistieken over Kmo's in België | FOD Economie, 2020). Secondly, key financials in Belgium can be consulted and analyzed through a database called Bel-first. Bel-first collects financial info on large firms as well as SMEs (Bel-First | Belgium & Luxembourg Company Data | Bureau van Dijk, n.d.). As mentioned earlier, this is an advantage compared to studies performed in other countries that lack such a comprehensive database. As a consequence thereof, these researchers have to resort to less objective means that typically involve surveys in order to obtain the required info (Burke et al., 2000).

For the sample of this study, specifically small and medium-sized enterprises were targeted. As it is important to have a good understanding of what is classified under the category SME, a proper definition

---

[5] Based on the NACE-bel categorization and on their occurrence within the sample, 18 industries were detected for which the median growth rate was calculated. It should be noted that, as some industries are hardly represented, the median growth rates calculated in the sample may not accurately reflect the impact of industry on the firm's financial performance. This issue, however, will be addressed within the robustness section of this study by including an alternative measurement of industry. The alternative measurement did not significantly differ from the original industry variable, which justifies the use of this variable within the model.

should be provided. In this case, the European definition of SMEs was partially applied by only considering companies that employ up to 250 people (European Commission, 2003). Micro enterprises, or more precisely firms with less than 10 employees were excluded from the sample on the premise that they lack the visibility for their social policy to pay off (Campbell, 2007). It should further be noted that the sample only comprises Flemish SMEs. While some environmental affairs fall under the domain of the federal state, legislation concerning transport, energy and the environment is mostly a regional affair (*Klimaatbevoegdheden*, n.d.). As regulations regarding the environment in Flanders differ from its Walloon counterpart, a country-wide comparison is deemed inappropriate for this study. Furthermore, only SMEs that are currently active in the manufacturing industry were considered to be a part of the sample. This sector was targeted specifically because of the following reasons. The manufacturing industry has contributed about 14,8% of Belgium's GDP in 2019 and is therefore the second most important industry in terms of GDP, after the service sector (*Productie in de Industrie | Statbel*, 2020). Moreover, the manufacturing industry has a strong negative environmental impact and is naturally inclined to be a big polluter due to the nature of its activities (Torugsa et al., 2012). In 2017, they were responsible for more than half of Europe's total greenhouse gas emissions and other pollutants (*Europees Milieuagentschap*, 2020). As stated earlier, companies have been increasingly put under pressure by their stakeholders to take accountability in terms of social responsibility and this especially applies to polluting industries. Therefore, it is expected to see a larger CSR engagement from smaller firms active in the manufacturing sector compared to any other sector (Torugsa et al., 2012). Lastly, the manufacturing industry is characterized by its largely competitive environment (Robert & Dresse, n.d.). Due to fierce competition -not only within the country but from low-wage countries as well- and constant new market entries, companies experience an increasing need to differentiate themselves from the crowd (Porter, 1991). One way of doing so is by implementing a well-established social policy. Lastly, the population is restricted to those firms whose contact information could be retrieved from the Bel-first database. Ultimately, the population of the study ended up containing 1972 firms.

An e-mail was sent out specifically to the managers of these firms containing a link enabling them to access the web-based survey. The survey ran for two weeks and a reminder was sent after one week. Out of the 1972 managers that were addressed, 339 filled in the survey, resulting in a response rate of 17,2%. After deleting all partially complete surveys and survey entries from executives who responded incorrectly to the control questions, the sample ended up containing 204 firms, which equals to a response rate of about 10,34%.

4.3. Confirmatory Factor Analysis

Prior to executing regression analyses on the corporate social- financial performance link, the instrument used to measure corporate social performance needs to be validated which is done by conducting a confirmatory factor analysis (CFA). A prerequisite of CFA is that a pilot survey should be performed with a small proportion of the study's ultimate sample. Of the 200 managers that were addressed to participate in the pilot study, 37 answers were recorded which equals to a response rate of 18,5%. After all incomplete surveys and entries from respondents who answered incorrectly to the control questions were eliminated, the final sample of the pilot survey consisted of 16 respondents, which is somewhere in between Hill's suggestion of 10-30 respondents and corresponding to a rate of response of 8% (Hill, 1998). While filling out the survey, respondents were also provided with the opportunity to give remarks on the questionnaire and indicate whether certain items were unclear and required further explanation. Afterwards, a confirmatory factor analysis (CFA) was executed with the responses that were collected, following the guidelines set out by Hair et al. (2014). The goal of a confirmatory factor analysis is to determine whether the data is accurately represented by the theoretical model and therefore, presence of construct validity within the measurement instrument is checked (Harrington, 2009). Construct validity reflects "the degree to which the empirical indicators measure the construct" (O'Leary-Kelly & J. Vokurka, 1998, p.389). In order to determine construct validity, the scale needs to be checked for both convergent validity and determinant validity (Hair et al., 2014). Additionally, the reliability of the scale was verified as well (Santos, 1999).

4.3.1. Convergent Validity

First of all, convergent validity refers to the extent to which items measuring the same construct actually relate to one another (Cable & DeRue, 2002). There are several ways of measuring construct validity, however, in the existing research on the CSP-CFP linkage, factor loadings are most frequently used (Agudo Valiente et al., 2012; Chow & Chen, 2012; Muller & Kolk, 2010; Reverte et al., 2016). A factor loading typically indicates the correlation between an item and its construct and should ideally range from 0,7 to 1. However, it is argued that a factor loading starting from 0,5 is generally accepted as well, especially for scales that were recently developed or when the scale is applied within a different context (Awang et al., 2015; Hair et al., 2014). Taking into account that the scale was recently developed in a Spanish context and has yet to be applied in a Belgian setting, the criterium of 0,5 can be used. As can be derived from the output presented in Table 3, 6 scale items have factor loadings below the commonly accepted cut-off score of 0,5 and are therefore left out of the variable intended to measure corporate social performance in the subsequent analysis.

Table 3 Validity and reliability of measurement scale

Construct	Indicators	Factor Loadings	AVE	Chronbach's alpha
Social Dimension	SOC1	0.652	0.359	0.791
	SOC2	0.438		
	SOC3	0.598		
	SOC4	0.655		
	SOC5	0.702		
	SOC6	0.668		
	SOC7	0.762		
	SOC8	0.454		
	SOC9	0.549		
	SOC10	0.393		
Economic Dimension	ECO1	0.432	0.317	0.757
	ECO2	0.621		
	ECO3	0.440		
	ECO4	0.633		
	ECO5	0.475		
	ECO6	0.516		
	ECO7	0.634		
	ECO8	0.633		
	ECO9	0.594		
	ECO10	0.599		
Environmental Dimension	ENV1	0.602	0.687	0.85
	ENV2	0.710		
	ENV3	0.740		
	ENV4	0.568		
	ENV5	0.706		
	ENV6	0.742		
	ENV7	0.741		

4.3.2. Discriminant Validity

At the same time, the discriminant validity of the measurement instrument should be assessed. Discriminant validity is commonly known as the degree to which constructs are actually different from one another (Cable & DeRue, 2002). Most often, it is determined as follows: the square root of the average variance-extracted (AVE)[6] of a construct is compared to the correlation between any two constructs. Ultimately, the square root of the AVE should be greater than the correlation between any pair of constructs and therefore, it is checked in Table 4 whether the AVEs are bigger than both vertical and horizontal correlations (Fornell & Larcker, 1981). As this criterium was also met in this specific case it can be concluded that the construct validity condition is satisfied after removal of the 6 scale items (Hair et al., 2014).

***Table 4** Discriminant Validity*

Constructs	Correlation matrix		
	(1)	(2)	(3)
1. Social Dimension	**0.60**		
2. Economic Dimension	0.47***	**0.56**	
3. Environmental Dimension	0.52***	0.51***	**0.68**

*Significance at the 10% level; **Significance at the 5% level; ***Significance at the 1% level
Diagonal values in bold represent the square root of the AVEs

4.3.3. Reliability

Next to validity, the measurement instrument of corporate social performance should be evaluated in terms of reliability. Reliability is commonly defined as the internal consistency of a measure and checks to which degree the scale items actually measure the construct to which they belong (Gallardo-Vázquez & Sanchez-Hernandez, 2014). Internal consistency is typically assessed by means of the Cronbach's Alpha (Santos, 1999). A generally accepted cut-off score for this measure is set at 0,7. As can be seen in Table 3 presented above, the values that were computed in the study exceed this imposed minimum and therefore, the proposed instrument meets both the required validity and reliability conditions.

---

[6] The average variance-extracted is a measure of the total variance within a construct that is explained by the items belonging to that construct and is usually represented by sum of all squared standardized factor loadings divided by the number of items measuring a construct (Hair, 2014).

5. Empirical results

5.1. Model Specification

Now that the measure of corporate social performance has been validated, the main analysis can be performed. In order to test the hypothesized association between corporate social and financial performance, linear regression will be applied. It should be noted that, as both the dependent and independent variables were measured in the year 2019, this study adopts a simultaneous rather than lead-lag approach. This is due to the fact that the financial statements for the year 2020 of the majority of SMEs have not yet been publicized, considering that the annual accounts can be filed up until 7 months after closing off the financial year (De Lembre et al., 2016). A possibility would have been to include questions within the survey, asking companies about key indicators of their financial performance in 2020. However, this would have resulted in a very low rate of response, increasing the difficulty to conduct a reliable analysis (De Pelsmacker & Van Kenhove, 2019). On top of that, the financial performance of firms in 2020 is very likely to be negatively impacted by the Covid-19 pandemic. Taking into account that these are extraordinary results that deviate from the normal course of events and therefore are severely understated, the usage of those numbers would result in a distorted view on the CSP-CFP linkage. Finding an accurate measure to estimate the impact of Covid-19 on the financials and including it as a control within the model could potentially solve this issue, however, it is extremely difficult to capture and represent this effect correctly.

The fact that both measures are calculated within the same year has several implications for the nature of the relationship between CSP and CFP. Most importantly, a causal relationship between corporate social and financial performance cannot be established in this study and as a consequence thereof, merely the association between both variables can be analyzed (Freedman, 1999). Before being able to conduct OLS regression, however, a number of assumptions need to be checked, all of which were tested and can be found in the attachments (see Attachment 3). Ultimately, the following equations will be estimated:

$$ROA_{i,t} = \beta_0 + \beta_1 * AVG\ CSP_{i,t} + \beta_2 * SIZE_{i,t} + \beta_3 * AGE_{i,t} + \beta_4 * LEV_{i,t} + \beta_5 * CR_{i,t} + \beta_6 * IND_{i,t} + \varepsilon_{i,t}$$

$$\Delta SALES_{i,t} = \beta_0 + \beta_1 * AVG\ CSP_{i,t} + \beta_2 * SIZE_{i,t} + \beta_3 * AGE_{i,t} + \beta_4 * LEV_{i,t} + \beta_5 * CR_{i,t} + \beta_6 * IND_{i,t} + \varepsilon_{i,t}$$

5.2. Descriptive Statistics

Table 5 and 6, both depicted below, represent how the sample is composed in terms of firm size, age and industry. First of all, it appears that the sample contains a fairly equal amount of small firms and medium-sized firms. With regard to the company size, most of the companies seem to be aged somewhere in between 30 and 60 years old. Lastly, it can be noted that nearly all sub-sectors belonging to the manufacturing industry are present within the sample, portraying 18 out of 22 sectors. The food industry appears the most frequently and is thus largely represented in comparison to other sectors.

Table 7 on the other, hand exhibits the descriptive statistics of all variables that were included in the main model. First of all, it should be mentioned that the range of values that each variable can take up in the sample is theoretically feasible. With regard to the control variables applied to the sample, the averages seem to be in line with current SME averages in Belgium. As no sectoral info could be retrieved on these measures, the comparison was based on available data on Flemish SMEs. Starting off with the leverage ratio, the Flemish SME average amounted to 60% in 2017 (UNIZO, 2019). This is in accordance with the findings of the study, as the average leverage ratio equals to 54%. Furthermore, the sample of this study clearly outperforms the 2017 Flemish average in terms of liquidity with a current ratio of 2,21 compared to 1,46 (UNIZO, 2019). This is partly sample-specific but can further be attributable to sectoral differences, especially taking into consideration that the manufacturing industry is characterized by large levels of inventory in order to be able to meet demand at all times (Adeyemi & Salami, 2010). While no averages could be found of the two measures of profitability on a country level, the European averages within the manufacturing industry from 2018 were used as a base of comparison (European Commission, 2019). First of all, the average return on assets of 2018 amounted to 8,4% in the European manufacturing industry, which is around the same level as in the sample. Furthermore, the sales growth fluctuated around 4,1% for manufacturing firms in 2018 which yet again conforms to the sample mean (European Commission, 2019). Taking a closer look at the average score for the independent variable corporate social performance, it initially appears rather high, with a mean of 3,9. However, this is in accordance with a number of studies who have applied the same type of methodology, that is the 5-point Likert scale (Aragón et al., 2016; O'Donohue & Torugsa, 2016; Torugsa et al., 2012). When disaggregating the average score for social performance into its three dimensions, it can be observed that the lowest average was obtained for the economic dimension.

Table 5 *Sample characteristics (age and size)*

	No. of obs	% of sample
SIZE		
10-49 employees	121	59,31%
50-249 employees	83	40,69%
AGE		
<30 years	57	27,94%
30-60 years	122	59,80%
>60 years	25	12,25%

Table 6 *Sample characteristics (industry)*

Industry	NACE-BEL Code	No. of obs	% of sample
Food	10	27	13,2%
Drinks	11	6	2,9%
Tobacco	12	1	0,5%
Textile	13	7	3,4%
Wearing Apparel	14	6	2,9%
Paper	17	2	1%
Publishing	18	17	8,3%
Chemicals	20	14	6,9%
Pharmaceuticals	21	6	2,9%
Rubber & Plastics	22	14	6,9%
Non-metallic minerals	23	14	6,9%
Fabricated metals	25	16	7,8%
Electronics	26	14	6,9%
Electrical equipment	27	15	7,4%
Machinery	28	17	8,3%
Vehicles	29	4	2%
Furniture	31	9	4,4%
Other manufacturing	32	15	7,4%
TOTAL		204	100%

Table 7 *Descriptive statistics*

	N	Min.	Max.	Mean	Median	Std. Dev.
ROA	204	-0,144	0,445	0,086	0,066	0,104
SALES GROWTH	204	-0,546	0,652	0,052	0,042	0,208
AVG CSP	204	2,438	5,000	3,945	3,952	0,509
AVG SOC	204	2,429	5,000	4,021	4,143	0,529
AVG ECO	204	2,000	5,000	3,776	3,857	0,588
AVG ENV	204	1,857	5,000	3,923	4,000	0,672
CURRENT	204	0,176	9,811	2,209	1,732	1,756
LEV	204	0,016	1,058	0,540	0,554	0,224
AGE	204	1,099	4,564	3,582	3,555	0,446
SIZE	204	3,667	13,196	9,039	9,030	1,409
IND	204	-0,220	0,236	0,051	0,069	0,069
Valid N (listwise)	204					

Further, the correlation matrix of all the variables included in the models is displayed in Table 8. First of all, it can be established that the two dependent variables, ROA and sales growth, positively and significantly correlate with one another. This was to be expected as both variables intend to measure the same construct, that is firm profitability. When relating the two measures of profitability to the independent variable, no significant correlation can be distinguished. However, one should be careful with drawing a conclusion from correlation matrices as only bivariate association is considered and hereby all other variables included in the model are taken out of the equation (D. N. Gujarati, 2003). Unsurprisingly, the individual components of social performance are all significantly correlated with the average CSP score and with each other. As for the control variables, sales growth and age are negatively and significantly correlated constructs. Lastly, the current ratio is negatively associated with both the firm age and the leverage ratio.

Considering that the model consists of multiple independent variables, a check on multicollinearity needs to be executed. Although a high correlation may point towards the direction of potential multicollinearity issues, a low correlation does not necessarily exclude multicollinearity problems from occurring (Thompson et al., 2017). As correlation and collinearity are two different concepts, a measure that is able to detect multi-collinearity is required. The most commonly applied multicollinearity diagnostic is the variance inflation factor (VIF), with a VIF greater than 10 typically being an indicator of multicollinearity issues (Alin, 2010). Fortunately, the VIFS are well below 10, therefore showing no potential signs of multicollinearity.

Table 8 *Pearson Correlation matrix*

	ROA	SALES GROWTH	SIZE	AGE	CURRENT	LEV	AVG CSP	AVG SOC	AVG ECO	AVG ENV	IND
ROA	**1.00**										
SALES GROWTH	0.346**	**1.00**									
SIZE	-0.005	0.064	**1.00**								
AGE	-0.024	-0.223**	0.099	**1.00**							
CURRENT	-0.026	-0.145*	0.094	-0.151*	**1.00**						
LEV	-0.176*	0.085	-0.112	0.075	-0.339**	**1.00**					
AVG CSP	-0.002	-0.062	0.126	-0.039	0.092	-0.123	**1.00**				
AVG SOC	0.049	-0.073	0.053	-0.004	0.011	-0.038	0.772**	**1.00**			
AVG ECO	0.032	0.046	0.104	-0.114	0.070	-0.097	0.769**	0.43**	**1.00**		
AVG ENV	-0.071	-0.112	0.021	0.021	0.122	-0.143*	0.814**	0.453**	0.397**	**1.00**	
IND	0.062	0.090	0.060	0.019	0.009	0.080	0.058	-0.054	0.093	0.082	**1.00**

* Significance at the 10% level; ** Significance at the 5% level; *** Significance at the 1% level

5.3. Regression results

5.3.1. Main Regression

Now that all conditions have been satisfied, data can be analyzed. In order to test the hypothesis, two separate OLS regressions were executed for both of the dependent variables ROA and sales growth (see Table 9). The adjusted R-square in the models range from 1.8 to 8.2%, indicating that only around 2 to 8% of the variance in the dependent variable is captured by the independent variables included in the model. Although rather small, similar scores have been obtained in research studying the CSP-CFP linkage (Callan & Thomas, 2009; Mishra & Suar, 2010; Zhang et al., 2020; Zhao & Murrell, 2016). First of all, it can be noted that the predictor variable corporate social performance is negatively, however not significantly, associated with both the ROA and the sales growth. As a consequence thereof, no linear relationship between corporate social and financial performance can be established. This is in stark contrast with the hypothesis that was formulated, which states that corporate social performance and financial performance are positively associated. Nevertheless, this outcome conforms with the work of McWilliams and Siegel (2000), whose findings showed no significant relationship between the two variables. When taking a closer look at the control variables within the regression equation with ROA as the outcome variable, only the leverage ratio is found to be statistically significant. The negative coefficient attached to the leverage ratio indicates that larger amounts of debt are usually associated with less profitable firms. This finding is confirmed by Jo and Harjoto (2012) and Wang et al. (2008) and is consistent with the reasoning that firms who finance their operations with excessive levels of debt tend to experience costs of financial distress which may reflect negatively into firm performance (Ahmad et al., 2015; Lang et al., 1996).

When evaluating the relevance of the control variables within the sales growth equation (see Table 9), three variables are found to be statistically significant. First of all, age is negatively associated with sales growth, essentially suggesting that younger firms are characterized by higher sales growth levels than older firms which is in line with the findings of Fitzsimmons et al. (2005) and supports evidence for the organizational rigidity hypothesis brought forward by Loderer and Waelchli (2010). Moreover, while only significant at the 10% level, firm size is found to positively relate to sales growth. This is in accordance with Do (2013) and Lee (2009) and can be attributed to large firms' economies of scale (Pervan & Višić, 2012). One of the advantages of operating on a larger scale includes having a bigger production capacity which ultimately reflects positively into the sales of the company (Abiodun, 2013). Lastly, the current ratio is negatively associated with the sales growth of the firms in the sample, which insinuates that firms with a higher liquidity buffer seem to have a lower sales growth. Although surprising at first, research has been found in conformity with these findings (Eljelly, 2004; Priya & Nimalathasan, 2013; Vintilă & Alexandra Nenu, 2016). While a high current ratio is an indicator of financial stability, it may also point towards excessive resources being held by the company (Daniel et al., 2004). Holding onto slack resources can be perceived as passing on valuable investment opportunities which could have contributed to firm growth. Therefore, it is argued that high liquidity buffers result in lost revenues and costs that could have been avoided by holding less excess liquidity (Eljelly, 2004). Following this line of reasoning, there is a liquidity-

profitability trade-off which indicates that in order to improve the firm's profitability, the liquidity position will be adversely affected and vice versa. Eljelly (2004) further concluded that this negative relationship is more prominent for firms that have a high current ratio.

For both regression equations, a sensitivity analysis was executed as well where the independent variable contained all 27 scale items that belonged to the original survey. This was done in order to verify whether the set of survey items that was reduced to 21 items due to a lack of convergent validity would result in a different outcome from the full number of scale items. As expected, the results do not systematically differ from one another and therefore it can be stated that the reduced set of 21 scale items accurately captures and represents the entire survey.

Table 9 OLS regressions

	ROA		SALES GROWTH	
	Main Model	**Sensitivity Analysis**	**Main Model**	**Sensitivity Analysis**
CONSTANT	(2.011)	(0.555)	(2.011)	(2.425)
AVG CSP	**-0.023**	**-0.019**	**-0.071**	**-0.072**
	(-0.325)	(-0.266)	(-1.036)	(-1.048)
AGE	-0.023	-0.023	-0.269***	-0.267***
	(-0.331)	(-0.322)	(-3.927)	(-3.901)
SIZE	-0.021	-0.021	0.116*	0.117*
	(-0.289)	(-0.291)	(1.680)	(1.693)
LEV	-0.221***	-0.220***	0.043	0.043
	(-2.945)	(-2.939)	(0.588)	(0.587)
CURRENT	-0.101	-0.101	-0.176**	-0.176**
	(-1.350)	(-1.351)	(-2.433)	(-2.431)
IND	0.083	0.084	0.090	0.092
	(1.191)	(1.190)	(1.332)	(1.351)
Obs.	204	204	204	204
Adj. R^2	0.018	0.018	0.082	0.082
F-stat	1.633	1.627	4.028	4.03

*Significance at the 10% level; **Significance at the 5% level; ***Significance at the 1% level*
The t-statistics obtained for each variable have been included within parentheses

5.3.2. Regression with Disaggregated Measures

Additionally, a test was performed in order to determine whether or not the individual dimensions of corporate social performance are significantly related to the corporate financial performance (see Table 10). When analyzing the regression equation with ROA as the dependent variable, it can be derived that the average environmental performance of firms is negatively associated with the return on assets. This gives an indication that firms who actively engage in green initiatives do this at the cost of their own profitability. Although it is the complete opposite to what had been hypothesized, this finding has been confirmed by earlier research (Konar & Cohen, 2001; Vance, 1975; Wright & Ferris, 1997). While the results do suggest a negative association between the environmental dimension of CSP and return on assets, it merely shows significance at the 10% level. Moreover, all control variables that were found to be statistically significant in the previous models have remained so. A slight increase in the explanatory power of the independent variables due to disaggregation of corporate social performance can be noticed, however, as the adjusted R-square now ranges from 2.8 to 8.4%. A sensitivity analysis was yet again applied to the model and did not present any significant changes from the main model. Once more, it can be concluded that the reduced set of items is an accurate representation of the entire survey.

Table 10 *Regressions on disaggregate CSP measures*

	ROA		SALES GROWTH	
	Main Model	**Sensitivity Analysis**	**Main Model**	**Sensitivity Analysis**
CONSTANT	(1.589)	(1.354)	(2.202)	(2.056)
AVG SOC	**0.109**	**0.126**	**-0.057**	**-0.049**
	(1.319)	(1.515)	(-0.718)	(-0.605)
AVG ECO	**0.022**	**0.028**	**0.081**	**0.082**
	(0.270)	(0.339)	(1.033)	(1.022)
AVG ENV	**-0.156***	**-0.169***	**-0.108**	**-0.114**
	(-1.910)	(-2.048)	(-1.362)	(-1.420)
AGE	-0.015	-0.017	-0.254***	-0.257***
	(-0.208)	(-0.235)	(-3.678)	(-3.738)
SIZE	-0.015	-0.020	0.114*	0.116*
	(-0.212)	(-0.284)	(1.656)	(1.683)
LEV	-0.231***	-0.233***	0.042	0.043
	(-3.095)	(-3.117)	(0.580)	(0.585)
CURRENT	-0.090	-0.089	-0.172**	-0.171**
	(-1.204)	(-1.199)	(-2.375)	(-2.363)
IND	0.099	0.097	0.084	0.084
	(1.319)	(1.374)	(1.229)	(1.228)
Obs.	204	204	204	204
Adj. R^2	0.028	0.033	0.084	0.084
F-stat	1.742	1.855	3.334	3.318

*Significance at the 10% level; **Significance at the 5% level; ***Significance at the 1% level*
The t-statistics obtained for each variable have been included within parentheses

5.3.3. Endogeneity Check

Furthermore, an additional test was performed in order to account for potential endogeneity issues. One source of endogeneity problems can be ascribed to simultaneous causality (Jo & Harjoto, 2012; Zhao & Murrell, 2021). Applied to the context of this study, simultaneous causality would signify that corporate social and financial performance are jointly determined variables or in other words, CSP affects CFP while at the same time CFP has an impact on CSP (Zhao & Murrell, 2021). As of today, there is still an ongoing discussion about the true causal direction of the corporate social-financial performance relationship, partly because the potential bi-directional nature of the CSP-CFP linkage has not been sufficiently addressed yet in the existing literature (Callan & Thomas, 2011; Farag et al., 2014; Preston & O'Bannon, 1997; Waddock & Graves, 1997; Wagner et al., 2002). Addressing the simultaneity bias is important because if potential endogeneity concerns are not taken into consideration, performing an OLS regression may result in biased coefficient estimates and thus a misspecified model (Tobin, 1958).

While common theories such as the social capital theory and the trade-off theory provide evidence for an influence of CSP on CFP, there are some theories that propose an opposite linkage. The slack resources theory for example, suggests a positive influence of CFP on CSP and insinuates that strong financial performance leads to the availability of excess resources. As these resources are not of immediate necessity to the company, they can be used to invest in the company's social policy (Waddock & Graves, 1997). Alternatively, the managerial opportunism theory predicts a negative impact of CFP on CSP and states that managers intend to grasp business opportunities for their own personal gain (Makni et al., 2009; Preston and O'Bannon, 1997). Essentially, when a company is prospering in terms of profitability, managers will attempt to reduce their social/green expenses in order to fully benefit from the firm's current success (Farag et al., 2014; Kao et al., 2018). The fact that theories have been found in support of opposite causal relationships between social and financial performance may point to potential simultaneity among the two variables. Therefore, Salzmann et al. (2005) argued for the existence of a synergy theory. A positive synergy is expected when both the social capital theory and the slack resources theory occur at the same time (Waddock & Graves, 1997). Alternatively, a negative synergistic effect is to be determined when there's a simultaneous occurrence of both the trade-off theory and the managerial opportunism theory (Preston & O'Bannon, 1997). As both applications of the synergy theory suggest that corporate social performance and financial performance are jointly determined, it may be worthwhile to take a closer look at the simultaneous bi-directional nature of the CSP-CFP relationship.

In order to investigate whether a synergistic effect is present between corporate social and financial performance, a simultaneous equation model is constructed and analyzed by means of conducting three stage least squares regression analysis (3SLS) (Gujarati & Porter, 2009). For both indicators of firm profitability, two equations are specified. In a first equation, one of the measures of financial performance serves as the outcome variable, whereas social performance is treated as the predictor. Additionally, the variables that were introduced into the main model as controls were added to the equation, with the

exception of industry. In the second equation, the roles are reversed and consequently, corporate social performance becomes the dependent variable. The control variables included within these equations comprise all the controls included in the main model except for the current ratio. It was mentioned earlier that both a positive and negative relationship between the leverage ratio and financial performance can be established (Ahmad et al., 2015; Schoonjans et al., 2013). As a positive linkage between social and financial performance is anticipated, a similar relation between social performance and the leverage can be predicted. It should further be noted that firm age and size are expected to affect corporate social performance in a similar manner. First of all, under the premise that older and bigger firms tend to have a more stable cashflow pattern and have access to the resources required to engage in social responsibility, size and age should have a positive influence on CSP (Withisuphakorn & Jiraporn, 2016). Adding to that, larger and older firms are highly visible and therefore are usually faced with external pressure to adopt CSR practices (Udayasankar, 2008). On the contrary, older and bigger firms may have already established such a solid reputation that investing in social responsibility appears redundant, thus providing evidence for a negative impact of age and size on social performance (Withisuphakorn & Jiraporn, 2016). Lastly, industry was accounted for as well, taking into consideration that certain manufacturing sectors are more harmful towards society than others and therefore stakeholders may exert more pressure towards them to participate in social activities (Cai et al., 2012).

The variable controlling for industry effects was excluded from the first equation and the current ratio from the second equation for practical purposes. In order to be able to conduct 3SLS regression, the model needs to be specified (Farag et al., 2014). A model is specified on the condition that both equations include an exogeneous variable that is unique to that specific equation (Hausman, 1975). As a consequence thereof, the control variables industry and current ratio were eliminated from the CFP equation and the CSP equation respectively, a methodology that is similar to Farag et al. (2014). The decision to exclude the industry control variable from the first equation was based upon the fact that it is the only control variable that did not show any significant association with either of the measures of profitability in the main model. The current ratio on the other hand, was excluded from the second equation as previous studies have typically not controlled for this variable within CSP equations, contrary to the leverage ratio (Callan & Thomas, 2011; Farag et al., 2014; Jo & Harjoto, 2012).

When analyzing the results of the 3SLS regression presented in Table 11, it can be concluded that no simultaneous effect was found between corporate social and financial performance. Therefore, the potential existence of endogeneity problems and more specifically, a simultaneity bias can be precluded. This implies that the coefficient estimates of the variables included in the main OLS regression are not biased and that the model is correctly specified (Tobin, 1958). With regard to the CSP equations, one of the exogeneous variables, and more specifically size, was found to be positively and significantly associated with corporate social performance in both of the regressions that were run. This finding is in line with the

hypothesis that bigger firms tend to engage more in social policy-making (Udayasankar, 2008; Withisuphakorn & Jiraporn, 2016).

Table 11 3SLS regression

Dependent Variable	Panel A: CFP equation		Panel B: CSP equation	
	Model 1 ROA	Model 2 Sales Growth	Model 1 CSP_1	Model 2 CSP_2
CSP	**30.764** (0.70)	**68.307** (0.74)		
ROA			**0.018** (1.07)	
SALES GROWTH				**-0.011** (-1.25)
AGE	1.207 (0.37)	-9.720 (-1.42)	-0.046 (-0.57)	-0.170 (-1.42)
SIZE	-1.423 (-0.75)	-0.995 (-0.25)	0.043* (1.73)	0.055** (2.07)
LEV	-4.718 (-0.46)	12.350 (0.59)	-0.103 (-1.349)	-0.095 (-1.261)
CURRENT	-0.057 (-0.33)	-0.894* (-1.81)		
IND			0.002 (0.35)	0.006 (1.15)
CONSTANT	-100.354 (-0.60)	-222.129 (-0.64)	3.517 (9.09)***	4.040*** (9.32)

The estimations for the twofold simultaneous equations have been documented separately under panel A and panel B
*Significance at the 10% level; **Significance at the 5% level; ***Significance at the 1% level
The z-scores obtained for each variable have been included within parentheses

5.3.4. Robustness Check

In order to check whether small adaptations to the model would result in significant changes in the regression coefficient of the core independent variable(s), two robustness tests were executed (Lu & White, 2014). First of all, it became clear that the food industry was overrepresented in the sample in comparison to the remaining industries. As an attempt to assess the influence of this industry and to identify whether the conclusion concerning the corporate social and financial performance relationship would change, entries belonging to respondents that are active in the food industry were deleted from the data set. Table 12 represents the additional regression analyses that were executed, for corporate social performance and its disaggregated dimensions respectively. Only the core independent variables have been documented for this first test as they are deemed the most relevant[7].

Additionally, an alternative measure of industry was included in the model. It should be mentioned that performance -and sales growth in particular- of highly technological manufacturing firms can vary greatly from that of other non-technological firms. Similar to Almus and Nerlinger (1999), a distinction was made between highly technological, medium technological and other manufacturing firms. All of the manufacturing sectors present within the sample were divided under these three categories, based upon a European classification provided by Eurostat (2018). Afterwards, two dummy variables were created called HIGH_TECH and MEDIUM_TECH. In an attempt to avoid the dummy variable trap, the dummy for other manufacturing firms was omitted from the model and was perceived as a point of reference for the other two categories (Gujarati, 2003). The full methodology of how the variables were created can be found in Attachment 4, as well as the Eurostat categorization. The output of these dummy variables was reported as well, in addition to the independent variables, in order to check whether it would significantly change from the original measurement of industry.

The output of the regressions represented in Table 12 has led to the conclusion that the predicted outcomes in the main models are robust to these additional tests. Moreover, the alternative measurement of industry did not result in any significant differences from the original industry variable included in the main model considering that both the growth rates of the high- and medium-technological firms did not significantly differ from those of the other manufacturing firms.

---

[7] Similar to the independent variables, the control variables of the model did not show any significant differences from the main model that was executed. The results obtained for these variables can become available upon request.

Table 12 *Robustness Check*

	ROA		SALES GROWTH	
	Aggregated Measure	**Disaggregated Measures**	**Aggregated Measure**	**Disaggregated Measures**
Food industry excluded from the model				
AVG CSP	-0.008 (-0.101)		-0.077 (-1.062)	
AVG SOC		0.137 (1.588)		-0.087 (-1.039)
AVG ECO		-0.004 (-0.044)		0.095 (1.166)
AVG ENV		-0.142* (-1.662)		-0.104 (-1.259)
Industry dummy variables				
AVG CSP	-0.005 (-0.066)		-0.058 (-0.838)	
HIGH_TECH	0.105 (1.378)		0.038 (0.507)	
MEDIUM_TECH	0.060 (0.794)		0.063 (0.853)	
AVG SOC		0.093 (1.134)		-0.067 (-0.842)
AVG ECO		0.039 (0.484)		0.091 (1.158)
AVG ENV		-0.135* (-1.641)		-0.093 (-1.167)
HIGH_TECH		0.098 (1.286)		0.039 (0.527)
MEDIUM_TECH		0.058 (0.756)		0.054 (0.728)

*Significance at the 10% level; **Significance at the 5% level; ***Significance at the 1% level

6. Conclusion

The past few decades have been characterized by a growing need for accountability of firms towards society. Therefore, the term "corporate social responsibility" has become more prominent within the business landscape, with firms progressively integrating social initiatives into their core strategy (Li et al., 2017). While having become a standard practice within large firms, CSR is still a relatively new concept to the context of SMEs as it is frequently argued that SMEs lack the incentives to engage in social responsibility (Gerrans & Hutchinson, 2000; Simpson et al., 2004). As a consequence thereof, they are often not involved in CSR practices which is reflected into the shortage of CSR literature on SMEs, especially regarding its relationship to financial performance. Therefore, in an attempt to potentially provide managers of small firms with the motivation required to engage in social policy-making, we execute our research in an SME setting.

In particular, this study has attempted to explore the CSP-CFP relationship in a sample consisting of 204 Flemish SMEs active in the manufacturing industry. While firm performance was measured on the basis of two indicators of firm profitability, the social performance was represented by means of a comprehensive survey developed by Reverte et al. (2016) that captures the multi-dimensionality of social responsibility, in the absence of a reliable and valid measurement tool designed especially for a small firm setting (Choi et al., 2018). Although the majority of researchers have established a positive relationship between corporate social and financial performance, the extant literature on the corporate social-financial performance linkage has delivered inconclusive results (Mishra & Suar, 2010). By executing OLS regression analysis, this study provides evidence for the stream of research that found no statistically significant association between corporate social performance and financial performance (Lee et al., 2018; Lee & Park, 2009; McWilliams & Siegel, 2000; Zhao & Murrell, 2021; Zhao & Murrell, 2016). It should be mentioned that the findings need to be carefully interpreted, however, as the variables included in the model were measured contemporaneously in the year 2019. This means that no lead-lag approach was adopted and therefore, no causal relationship can be established.

A line of reasoning that provides support for the existence of a non-significant association between the two variables is brought forward by McWilliams and Siegel (2000). They have stated that the positive association found in the majority of research is due to model misspecification. Several inconsistencies in the research methodology and in particular, the omission of important control variables of financial performance have led to the results being largely overstated (Choi et al., 2018). When such variables are included into the model, a statistically significant positive association can no longer be detected. Especially within small firms, variables controlling for financial performance are often omitted due to limited access to objective financial info (Bagur-Femenias et al., 2013; Cantele & Zardini, 2018). In the context of this study, however, a comprehensive database of Belgian firms could be consulted which facilitated the calculation of

control variables such as financial ratios, as well as the inclusion of practical info about the firms recorded in the sample.

To substantiate their claims, McWilliams & Siegel (2001) proposed the supply and demand theory of the firm. This theory predicts that firm engagement in social responsibility is valued by the market to such an extent that it leads to a higher product demand and ultimately reflects positively into the sales of the firm. In order to meet this demand, the firm needs to supply products that contain CSR attributes which is often paired with additional investments and thus an increase in costs. Built on the assumption that firms produce at an optimal level of output, the profits are maximized when the extra sales induced by CSR engagement are equal to the additional costs associated with taking up social responsibility. In an equilibrium, the profits of socially active firms will correspond to the level of profit obtained by firms that are not involved in social engagement. While these types of firms do not experience an increase in demand, they are not faced with additional costs either. A difference in profit between the two would cause the firms to switch up on strategies. As a consequence, there is argued to be no relationship between corporate social and financial performance.

Alternatively, Lee and Park (2009) and Teoh et al. (1999) have suggested that the absence of a significant association between corporate social and financial performance could be attributable to the presence of potential confounding variables. Such confounding variables affect both the independent and dependent variables and therefore create a false sense of association between the two (Beurden & Gössling, 2008).

While the CSP-CFP relationship was assessed by means of an aggregate measure of corporate social performance, another model was included in the study to account for the effect of the separate dimensions of social performance (i.e. the social, economic and environmental dimension). Once again, no significant associations with firm performance were discovered. Nevertheless, the model provides evidence for the findings of Callan and Thomas (2009) who have stated that separate dimensions of social performance should be preferred over the use of an aggregate measure as this results in a stronger, more specified model. This is reflected in the increase of the adjusted R-square compared to the main model and in the fact that the environmental dimension is negatively associated with sales growth, although merely at a 10% significance level. We advocate for the relevance of disaggregating the social performance measure into its separate dimensions, as each dimension may impact firm performance differently, however, these individual effects may disappear once the variables are clustered into a single measure (Callan & Thomas, 2009). Therefore, we argue that future studies investigating the CSP-CFP relationship should adopt a similar approach.

As mentioned earlier, there is still some ambiguity concerning the direction of causality within the CSP-CFP relationship, taking into consideration that the majority of previous studies have failed to address this pertinent issue, especially within an SME setting (Callan & Thomas, 2011; Farag et al., 2014; Preston & O'Bannon, 1997; Waddock & Graves, 1997; Wagner et al., 2002). Lee et al. (2018) mention that scholars

have neglected to investigate the potential effect of CFP on CSP as it is of little interest to the managers of the firms for whom the research is typically conducted. However, it is argued that failure to account for simultaneous causality may result in a biased, misspecified model (Tobin, 1958). In an attempt to take these possible endogeneity concerns into account, a system of simultaneous equations was developed and executed via 3SLS regression, in accordance with Cheng et al. (2014), Farag et al. (2014) and Jo and Harjoto (2012). The results of the regressions did not find evidence for a simultaneous bi-directional relationship between corporate social and financial performance, as no significant association was established for either of the equations.

By constructing a simultaneous equation model, we explore the possibility that corporate social and financial performance are jointly determined variables. It is argued, however, that the potential existence of a bi-directional relationship between CSP and CFP is sequential in nature rather than simultaneous (Callan & Thomas, 2011; Preston & O'Bannon, 1997). Whereas the social capital theory predicts social performance to positively affect financial performance, the slack resources theory expects that this financial improvement would in turn lead to the availability of excess resources that could be invested in the company's social policy (Waddock & Graves, 1997). In other words, the existing literature has found increasing support for the existence of a virtuous cycle between corporate social and financial performance (Endrikat et al., 2014; Orlitzky et al., 2003; Wahba, 2008). Therefore, instead of setting up a system of simultaneous equations, future studies should run two separate OLS regressions: one accounting for the hypothesized impact of CSP on CFP and another to determine the effect of CFP on CSP (Callan & Thomas, 2011; Preston & O'Bannon, 1997). Taking the assumed sequential nature of the relationship into account, a lead-lag approach should be adopted for both regressions in order to be able to establish a causal relationship where the social (or financial) performance is measured at time t while financial (or social) performance is measured at t-1 and t+1.

Furthermore, it should be noted that this study is subject to a number of limitations that need to be tackled in future research. Most importantly, due to a lack of access to the financial statements of 2020, both the independent and dependent variables were measured in the year 2019. As a result of this, merely an association could be established between the two rather than causation. Future studies should therefore adopt a lead-lag approach instead of measuring corporate social and financial performance contemporaneously in order to be able to observe a causal relationship (De Pelsmacker & Van Kenhove, 2019). Secondly, while partially addressed by testing the relationship for simultaneous causality, endogeneity concerns can be caused by omission of variables and errors-in-variables as well (Zaefarian et al., 2017). Although we have tried to take these into account, endogeneity cannot be ruled out completely and therefore, it should be tackled in further research.

Moreover, it is questioned whether the measurement tool used to assess corporate social performance of the firms is appropriate within the context of this study. In the absence of a reliable and valid measurement tool that can be applied to an SME setting, a survey was used. Unfortunately, this method suffers from a

number of issues. First and foremost, it appears that the environmental dimension of the survey is far more elaborate than the other dimensions, as can be derived from the lack of convergent validity of certain survey items belonging to the social and economic dimension. This can be ascribed to the predominant focus of existing surveys on the environmental aspect of social responsibility (Aragón et al., 2016; Clemens, 2006; Larrán Jorge et al., 2015). Future research should dedicate more attention to the other dimensions of corporate social responsibility as well when attempting to construct a survey measure. Moreover, it should be mentioned that a survey methodology is exposed to a number of biases. First of all, the respondents of a survey are often subject to the social desirability bias, implying that participants tend to answer in a way that conforms to societal expectations rather than being truthful (Fisher, 1993). As a consequence thereof, the social performance of firms included in the sample is likely to be overstated. Next to the social desirability bias, a participation or non-response bias may arise as well. Applied to the context of this research, a participation bias occurs when companies that attach great value to CSR and are already heavily involved in social engagement are far more willing to participate in the survey. Consequently, the sample will disproportionately consist out of those types of firms and will be less representative of the population (Slonim et al., 2013). Future studies should explore other research methodologies in order to find a measurement tool that is applicable within a small firm setting and that is not susceptible to validity and reliability concerns. Lastly, it should be taken into account that, by narrowing the sample down to Flemish SMEs active in the manufacturing industry, the findings of this study cannot be generalized to other contexts and therefore lack external validity (Clemens, 2006).

Although our results have found evidence for the existence of a non-significant relationship between corporate social and financial performance, this does not imply that corporate social responsibility should be disregarded by SMEs. A non-significant association suggests that companies do not benefit nor suffer from social engagement. As firms are not at risk of endangering their financial position, it is argued that they may as well partake in social policy-making out of a moral obligation towards society and in order to potentially grasp non-financial benefits such as the reputational gains that result from social engagement (Lee et al., 2018). In terms of the measurement of corporate performance, unfortunately only financial measures were used to assess the company's competitive position. Nevertheless, future research could attempt to include non-financial measures of performance such as reputation and image, customer satisfaction and employee motivation, similar to Reverte et al. (2016) to provide small companies with an incentive other than financial gains. Furthermore, the fact that no direct association was found between corporate social and financial performance in this study adds to the pile of mixed findings in the existing literature. This may signify that the relationship between the two variables is more complex than what was initially anticipated. Consequently, this study advocates for a mediator perspective on the CSP-CFP relationship in future research conducted with SMEs in order to get a better understanding of what may explain the relationship between social and financial performance (Carroll & Shabana, 2010).

References

Abiodun, Y. (2013). *The Effect of Firm Size on Firms Profitability in Nigeria*. 6.

Adeyemi, S. L., & Salami, A. O. (2010). Inventory Management: A Tool of Optimizing Resources in a Manufacturing Industry A Case Study of Coca-Cola Bottling Company, Ilorin Plant. *Journal of Social Sciences*, *23*(2), 135–142. https://doi.org/10.1080/09718923.2010.11892822

Agudo Valiente, J. M., Garcés Ayerbe, C., & Salvador Figueras, M. (2012). Social responsibility practices and evaluation of corporate social performance. *Journal of Cleaner Production*, *35*, 25–38. https://doi.org/10.1016/j.jclepro.2012.05.002

Ahmad, N., Salman, A., & Shamsi, A. F. (2015). Impact of Financial Leverage on Firms' Profitability: An Investigation from Cement Sector of Pakistan. *Research Journal of Finance and Accounting*, 8.

Alin, A. (2010). Multicollinearity. *WIREs Computational Statistics*, *2*(3), 370–374. https://doi.org/10.1002/wics.84

Almeida, F., Faria, D., & Queirós, A. (2017). Strengths and Limitations of Qualitative and Quantitative Research Methods. *European Journal of Education Studies*, *3*, 369–387. https://doi.org/10.5281/zenodo.887089

Almus, M., & Nerlinger, E. A. (1999). *Growth of New Technology-Based Firms: Which Factors Matter?* 14.

Aragón, C., Narvaiza, L., & Altuna, M. (2016). Why and How Does Social Responsibility Differ Among SMEs? A Social Capital Systemic Approach. *Journal of Business Ethics*, *138*(2), 365–384. https://doi.org/10.1007/s10551-015-2632-2

Ashforth, B. E., & Mael, F. (1989). Social Identity Theory and the Organization. *The Academy of Management Review*, *14*(1), 20. https://doi.org/10.2307/258189

Aupperle, K., & Wolfe, R. (1991). Introduction to corporate social performance: Methods for evaluating an elusive construct. *Research in Corporate Social Performance and Policy*, *12*(1991), 265–268.

Awang, Z., Afthanorhan, A., Mohamad, M., & Asri, M. a. m. (2015). An evaluation of measurement model for medical tourism research: The confirmatory factor analysis approach. *International Journal of Tourism Policy*, *6*(1), 29–45. https://doi.org/10.1504/IJTP.2015.075141

Awards for Best Belgian Sustainability Reports 2018. (2019, February 13). MVO Vlaanderen.

  https://www.mvovlaanderen.be/inspiratie/awards-best-belgian-sustainability-reports-2018

Bagur-Femenias, L., Llach, J., & del Mar Alonso-Almeida, M. (2013). Is the adoption of environmental

  practices a strategical decision for small service companies?: An empirical approach. *Management*

  Decision, *51*(1), 41–62. https://doi.org/10.1108/00251741311291300

Barnett, J. H., & Karson, M. J. (1987). Personal values and business decisions: An exploratory

  investigation. *Journal of Business Ethics*, *6*(5), 371–382. https://doi.org/10.1007/BF00382894

Barnett, M. L., & Salomon, R. M. (2012). Does it pay to be really good? Addressing the shape of the

  relationship between social and financial performance. *Strategic Management Journal*, *33*(11),

  1304–1320. https://doi.org/10.1002/smj.1980

Bel-first | Belgium & Luxembourg Company Data | Bureau van Dijk. (n.d.). Bvdamerican. Retrieved

  February 4, 2021, from https://www.bvdinfo.com/en-us/our-products/data/national/bel-first

Belgian Business Awards for the Environment. (2020). https://www.vbo.be/wat-doen-

  we/campagnes/belgian-business-awards-for-the-environment-2019-2020/

Beurden, P., & Gössling, T. (2008). The Worth of Values – A Literature Review on the Relation Between

  Corporate Social and Financial Performance. *Journal of Business Ethics*, *82*(2), 407.

  https://doi.org/10.1007/s10551-008-9894-x

Blanca, M. J., Alarcón, R., & Arnau, J. (2017). Non-normal data: Is ANOVA still a valid option? *Psicothema*,

  29.4, 552–557. https://doi.org/10.7334/psicothema2016.383

Brammer, S., & Millington, A. (2008). Does it pay to be different? An analysis of the relationship between

  corporate social and financial performance. *Strategic Management Journal*, *29*(12), 1325–1343.

  https://doi.org/10.1002/smj.714

Burke, T. A., McKee, J. R., Wilson, H. C., Donahue, R. M. J., Batenhorst, A. S., & Pathak, D. S. (2000). A

  Comparison of Time-and-Motion and Self-Reporting Methods of Work Measurement. *JONA: The*

  Journal of Nursing Administration, *30*(3), 118–125.

Cable, D. M., & DeRue, D. S. (2002). The convergent and discriminant validity of subjective fit perceptions.

  Journal of Applied Psychology, *87*(5), 875–884. https://doi.org/10.1037/0021-9010.87.5.875

Cai, Y., Jo, H., & Pan, C. (2012). Doing Well While Doing Bad? CSR in Controversial Industry Sectors. *Journal of Business Ethics*, *108*(4), 467–480. https://doi.org/10.1007/s10551-011-1103-7

Callan, S. J., & Thomas, J. M. (2009). Corporate financial performance and corporate social performance: An update and reinvestigation. *Corporate Social Responsibility and Environmental Management*, *16*(2), 61–78.

Callan, S. J., & Thomas, J. M. (2011). Executive compensation, corporate social responsibility, and corporate financial performance: A multi-equation framework. *Corporate Social Responsibility and Environmental Management*, *18*(6), 332–351. https://doi.org/10.1002/csr.249

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, *32*(3), 946–967. https://doi.org/10.5465/amr.2007.25275684

Cantele, S., & Zardini, A. (2018). Is sustainability a competitive advantage for small businesses? An empirical analysis of possible mediators in the sustainability–financial performance relationship. *Journal of Cleaner Production*, *182*, 166–176. https://doi.org/10.1016/j.jclepro.2018.02.016

Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *Academy of Management. The Academy of Management Review (Pre-1986)*, *4*(000004), 497–505.

Carroll, A. B. (1999). Corporate Social Responsibility: Evolution of a Definitional Construct. *Business & Society*, *38*(3), 268–295. https://doi.org/10.1177/000765039903800303

Carroll, A. B., & Shabana, K. M. (2010). The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews*, *12*(1), 85–105. https://doi.org/10.1111/j.1468-2370.2009.00275.x

Chen, C.-M., & Delmas, M. (2011). Measuring Corporate Social Performance: An Efficiency Perspective. *Production and Operations Management*, *20*(6), 789–804. https://doi.org/10.1111/j.1937-5956.2010.01202.x

Cheng, B., Ioannou, I., & Serafeim, G. (2014). *Corporate Social Responsibility and Access to Finance*. 44.

Choi, J. H., Kim, S., & Yang, D.-H. (2018). Small and Medium Enterprises and the Relation between Social Performance and Financial Performance: Empirical Evidence from Korea. *Sustainability*, *10*(6), 1816. https://doi.org/10.3390/su10061816

Chow, W. S., & Chen, Y. (2012). Corporate Sustainable Development: Testing a New Scale Based on the

    Mainland Chinese Context. *Journal of Business Ethics*, *105*(4), 519–533.

    https://doi.org/10.1007/s10551-011-0983-x

Clarkson, M. B. (1991). Defining, evaluating, and managing corporate social performance: The stakeholder

    management model. *Research in Corporate Social Performance and Policy*, *12*(1), 331–358.

Clemens, B. (2006). Economic incentives and small firms: Does it pay to be green? *Journal of Business

    Research*, *59*(4), 492–500. https://doi.org/10.1016/j.jbusres.2005.08.006

CSR Professional of the Year 2020. (2020). https://www.csrprofessionaloftheyear.be/

Dahlsrud, A. (2008). How corporate social responsibility is defined: An analysis of 37 definitions. *Corporate

    Social Responsibility and Environmental Management*, *15*(1), 1–13. https://doi.org/10.1002/csr.132

Damodaran, A. (n.d.). *Private Company Valuation*. 47.

Daniel, F., Lohrke, F. T., Fornaciari, C. J., & Turner, R. A. (2004). Slack resources and firm performance: A

    meta-analysis. *Journal of Business Research*, *57*(6), 565–574. https://doi.org/10.1016/S0148-

    2963(02)00439-3

Davis, K. (1960). Can Business Afford to Ignore Social Responsibilities? *California Management Review

    (Pre-1986)*, *2*(000003), 70.

De Lembre, E., Everaert, P., & Verhoeye, J. (2016). *Dubbel boekhouden: Basisbeginselen* (4th ed.).

    Intersentia.

De Pelsmacker, P., & Van Kenhove, P. (2019). *Marktonderzoek: Methoden en toepassingen* (5th ed.).

    Pearson.

De Schoenmaker, S., Van Cauwenberge, P., & Vander Bauwhede, H. (2013). The influence of a smoking

    ban on the profitability of Belgian restaurants. *Tobacco Control*, *22*(e1), e33–e36.

    https://doi.org/10.1136/tobaccocontrol-2011-050283

De uitdaging om industriële vervuiling terug te dringen—Europees Milieuagentschap. (2020).

    https://www.eea.europa.eu/nl/ema-signalen/signalen-2020/articles/de-uitdaging-om-industriele-

    vervuiling

Do, M. (2013). Does Firm Size Affect The Firm Profitability? Evidence from Turkey. *Research Journal of

    Finance and Accounting*, 8.

Du, S., Bhattacharya, C. B., & Sen, S. (2010). Maximizing Business Returns to Corporate Social

Responsibility (CSR): The Role of CSR Communication. *International Journal of Management

Reviews*, *12*(1), 8–19. https://doi.org/10.1111/j.1468-2370.2009.00276.x

Duanmu, J.-L., Bu, M., & Pittman, R. (2018). Does market competition dampen environmental

performance? Evidence from China. *Strategic Management Journal*, *39*(11), 3006–3030.

https://doi.org/10.1002/smj.2948

Eljelly, A. M. A. (2004). Liquidity - profitability tradeoff: An empirical investigation in an emerging market.

International Journal of Commerce and Management, *14*(2), 48–61.

https://doi.org/10.1108/10569210480000179

Elkington, J. (1994). Towards the Sustainable Corporation: Win-Win-Win Business Strategies

forSustainable Development. *California Management Review 36*, 90–100.

Endrikat, J., Guenther, E., & Hoppe, H. (2014). Making sense of conflicting empirical findings: A meta-

analytic review of the relationship between corporate environmental and financial performance.

European Management Journal, *32*(5), 735–751. https://doi.org/10.1016/j.emj.2013.12.004

Epstein, M. J., & Roy, M.-J. (2001). Sustainability in Action: Identifying and Measuring the Key

Performance Drivers. *Long Range Planning*, *34*(5), 585–604. https://doi.org/10.1016/S0024-

6301(01)00084-X

European Commission. (2003). *SME definition*. Internal Market, Industry, Entrepreneurship and SMEs -

European Commission. https://ec.europa.eu/growth/smes/sme-definition_en

European Commission. (2019). *SME Annual Report*. Internal Market, Industry, Entrepreneurship and SMEs

- European Commission. https://ec.europa.eu/growth/smes/sme-strategy/performance-review_en

Eurostat. (2018). *High-tech classification of manufacturing industries*.

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:High-

tech_classification_of_manufacturing_industries

EY investor survey. (2018). *Does your nonfinancial reporting tell your value creation story?*

https://www.ey.com/en_gl/assurance/does-nonfinancial-reporting-tell-value-creation-story

Farag, H., Meng, Q., & Mallin, C. (2014). *The social, environmental and ethical performance of Chinese companies: Evidence from the Shanghai Stock Exchange | Elsevier Enhanced Reader*. https://doi.org/10.1016/j.irfa.2014.12.002

Fassin, Y. (2008). SMEs and the Fallacy of Formalising CSR. *Business Ethics*, *17*(4), 364–378. https://doi.org/10.1111/j.1467-8608.2008.00540.x

Fisher, R. J. (1993). Social Desirability Bias and the Validity of Indirect Questioning. *Journal of Consumer Research*, *20*(2), 303–315. https://doi.org/10.1086/209351

Fitzsimmons, J., Steffens, P., & Douglas, E. (2005). *Growth and Profitability in Small and Medium Sized Australian Firms*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1263734

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.2307/3151312

Freedman, D. (1999). From association to causation: Some remarks on the history of statistics. *Journal de la société française de statistique*, *140*(3), 5–32.

Freeman, R. E. (1984). *Strategic Management: A stakeholder approach*. Boston: Pitman.

Friedman, M. (1970). A Theoretical Framework for Monetary Analysis. *Journal of Political Economy*, *78*(2), 193–238. https://doi.org/10.1086/259623

Fuller, T., & Tian, Y. (2006). Social and Symbolic Capital and Responsible Entrepreneurship: An Empirical Investigation of SME Narratives. *Journal of Business Ethics*, *67*(3), 287–304. https://doi.org/10.1007/s10551-006-9185-3

Gadenne, D. L., Kennedy, J., & McKeiver, C. (2009). An Empirical Study of Environmental Awareness and Practices in SMEs. *Journal of Business Ethics*, *84*(1), 45–63. https://doi.org/10.1007/s10551-008-9672-9

Gallardo-Vázquez, D., & Sanchez-Hernandez, M. I. (2014). Measuring Corporate Social Responsibility for competitive success at a regional level. *Journal of Cleaner Production*, *72*, 14–22. https://doi.org/10.1016/j.jclepro.2014.02.051

Gerrans, P., & Hutchinson, B. (2000a). *Sustainable development and small to mediumsized enterprises | Taylor & Francis Group.* https://www.taylorfrancis.com/chapters/edit/10.4324/9781351282840-6/sustainable-development-small-mediumsized-enterprises-paul-gerrans-bill-hutchinson

Gerrans, P., & Hutchinson, B. (2000b). *Sustainable development and small to mediumsized enterprises: A long way to go.* Routledge.

Ghosh, D., & Vogt, A. (2012). *Outliers: An Evaluation of Methodologies.* 6.

Goffee, R., & Scase, R. (1995). *Corporate Realities: The Dynamics of Large and Small Organisations.* International Thomson Business Press.

Goggin, M. L. (1986). The "Too Few Cases/Too Many Variables" Problem in Implementation Research. *The Western Political Quarterly*, *39*(2), 328–347. https://doi.org/10.2307/448302

Graves, S. B., & Waddock, S. A. (1994). Institutional Owners and Corporate Social Performance. *Academy of Management Journal*, *37*(4), 1034–1046. https://doi.org/10.5465/256611

Grayson, D. (2004). How CSR contribute to the competitiveness of Europe in a more sustainable world. *He World Bank Institute and the CSR Resource Centre (Netherlands)*, 1–5.

Grewatsch, S., & Kleindienst, I. (2017). When Does It Pay to be Good? Moderators and Mediators in the Corporate Sustainability–Corporate Financial Performance Relationship: A Critical Review. *Journal of Business Ethics*, *145*(2), 383–416. https://doi.org/10.1007/s10551-015-2852-5

Guenster, N., Bauer, R., Derwall, J., & Koedijk, K. (2011). The Economic Value of Corporate Eco-Efficiency. *European Financial Management*, *17*(4), 679–704. https://doi.org/10.1111/j.1468-036X.2009.00532.x

Gujarati, D. N. (2003). *Basic Econometrics* (4th ed.). New York: McGraw-Hill Education.

Gujarati, Damodar N., & Porter, D. C. (2009). *Basic econometrics.* McGraw-Hill.

Haffar, M., & Searcy, C. (2017). Classification of Trade-offs Encountered in the Practice of Corporate Sustainability. *Journal of Business Ethics*, *140*(3), 495–522. https://doi.org/10.1007/s10551-015-2678-1

Hair, J. F., Black, W., Babin, B., & Anderson, R. (Eds.). (2014). *Multivariate data analysis* (7. ed., Pearson new internat. ed). Pearson.

Harrington, D. (2009). *Confirmatory Factor Analysis.* Oxford University Press, USA.

Hart, S., & Dowell, G. (2011). A Natural-Resource-Based View of the Firm: Fifteen Years After. *Journal of Management - J MANAGE*, *37*, 1464–1479. https://doi.org/10.1177/0149206310390219

Hausman, J. A. (1975). An Instrumental Variable Approach to Full Information Estimators for Linear and Certain Nonlinear Econometric Models. *Econometrica*, *43*(4), 727–738. https://doi.org/10.2307/1913081

Hill, R. (1998). What sample size is "enough" in internet survey research. *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*, *6*(3–4), 1–12.

Huynh, K. P., & Petrunia, R. J. (2010). *Age effects, leverage and firm growth*. 11.

Internationale vergelijking van het kmo-landschap | FOD Economie. (n.d.). Retrieved February 4, 2021, from https://economie.fgov.be/nl/themas/ondernemingen/kmos-en-zelfstandigen-cijfers/statistieken-over-kmos-belgie/internationale-vergelijking

Jenkins, H. (2009). A 'business opportunity' model of corporate social responsibility for small- and medium-sized enterprises. *Business Ethics: A European Review*, *18*(1), 21–36. https://doi.org/10.1111/j.1467-8608.2009.01546.x

Jo, H., & Harjoto, M. A. (2012). The Causal Effect of Corporate Governance on Corporate Social Responsibility. *Journal of Business Ethics*, *106*(1), 53–72. https://doi.org/10.1007/s10551-011-1052-1

Jones, T. M., Harrison, J. S., & Felps, W. (2018). How Applying Instrumental Stakeholder Theory Can Provide Sustainable Competitive Advantage. *Academy of Management Review*, *43*(3), 371–391. https://doi.org/10.5465/amr.2016.0111

Juarez, L. E. V. (2017). Corporate Social Responsibility: Its Effects on SMEs. *Journal of Management and Sustainability*, *7*(3), 75–89.

Kao, E. H., Yeh, C.-C., Wang, L.-H., & Fung, H.-G. (2018). The relationship between CSR and performance: Evidence in China. *Pacific-Basin Finance Journal*, *51*, 155–170. https://doi.org/10.1016/j.pacfin.2018.04.006

Kartikasari, D., & Merianti, M. (2016). *The Effect of Leverage and Firm Size to Profitability of Public*. *6*(2), 5.

Klewitz, J., & Hansen, E. G. (2014). Sustainability-oriented innovation of SMEs: A systematic review. *Journal of Cleaner Production*, *65*, 57–75. https://doi.org/10.1016/j.jclepro.2013.07.017

Klimaatbevoegdheden. (n.d.). Klimaat | Climat. Retrieved April 13, 2021, from

https://klimaat.be/klimaatbeleid/belgisch/nationaal/bevoegdheden

Koenker, R. (1981). A note on studentizing a test for heteroscedasticity. *Journal of Econometrics*, *17*(1),

107–112. https://doi.org/10.1016/0304-4076(81)90062-2

Konar, S., & Cohen, M. A. (2001). Does the Market Value Environmental Performance? *Review of

Economics and Statistics*, *83*(2), 281–289. https://doi.org/10.1162/00346530151143815

Lang, L., Ofek, E., & Stulz, RenéM. (1996). Leverage, investment, and firm growth. *Journal of Financial

Economics*, *40*(1), 3–29. https://doi.org/10.1016/0304-405X(95)00842-3

Larrán Jorge, M., Herrera Madueño, J., Martínez-Martínez, D., & Lechuga Sancho, M. P. (2015).

Competitiveness and environmental performance in Spanish small and medium enterprises: Is

there a direct link? *Journal of Cleaner Production*, *101*, 26–37.

https://doi.org/10.1016/j.jclepro.2015.04.016

Latif, K. F., & Sajjad, A. (2018). Measuring corporate social responsibility: A critical review of survey

instruments. *Corporate Social Responsibility and Environmental Management*, *25*(6), 1174–1197.

https://doi.org/10.1002/csr.1630

Lee, Jegoo, Graves, S. B., & Waddock, S. (2018). Doing good does not preclude doing well: Corporate

responsibility and financial performance. *Social Responsibility Journal*, *14*(4), 764–781.

https://doi.org/10.1108/SRJ-03-2017-0044

Lee, Jim. (2009). Does Size Matter in Firm Performance? Evidence from US Public Firms. *International

Journal of the Economics of Business*, *16*(2), 189–203.

https://doi.org/10.1080/13571510902917400

Lee, M.-D. P. (2008). A review of the theories of corporate social responsibility: Its evolutionary path and

the road ahead. *International Journal of Management Reviews*, *10*(1), 53–73.

https://doi.org/10.1111/j.1468-2370.2007.00226.x

Lee, S., & Park, S.-Y. (2009). Do socially responsible activities help hotels and casinos achieve their

financial goals? *International Journal of Hospitality Management*, *28*(1), 105–112.

https://doi.org/10.1016/j.ijhm.2008.06.003

Lepoutre, J., & Heene, A. (2006). Investigating the Impact of Firm Size on Small Business Social

    Responsibility: A Critical Review. *Journal of Business Ethics*, *67*(3), 257–273.

    https://doi.org/10.1007/s10551-006-9183-5

Li, S., Ngniatedema, T., & Chen, F. (2017). Understanding the Impact of Green Initiatives and Green

    Performance on Financial Performance in the US. *Business Strategy and the Environment*, *26*(6),

    776–790. https://doi.org/10.1002/bse.1948

Lindgreen, A., Swaen, V., & Johnston, W. J. (2009). Corporate Social Responsibility: An Empirical

    Investigation of U.S. Organizations. *Journal of Business Ethics*, *85*(S2), 303–323.

    https://doi.org/10.1007/s10551-008-9738-8

Lock, I., & Seele, P. (2016). The credibility of CSR (corporate social responsibility) reports in Europe.

    Evidence from a quantitative content analysis in 11 countries. *Journal of Cleaner Production*, *122*,

    186–200. https://doi.org/10.1016/j.jclepro.2016.02.060

Loderer, C., & Waelchli, U. (2010, April 10). *Firm age and performance* [MPRA Paper]. https://mpra.ub.uni-

    muenchen.de/26450/

Lu, X., & White, H. (2014). Robustness checks and robustness tests in applied economics. *Journal of*

    Econometrics, *178*, 194–206. https://doi.org/10.1016/j.jeconom.2013.08.016

Maignan, I., & Ferrell, O. C. (2000). Measuring Corporate Citizenship in Two Countries: The Case of the

    United States and France. *Journal of Business Ethics*, *23*(3), 283–297.

    https://doi.org/10.1023/A:1006262325211

Makni, R., Francoeur, C., & Bellavance, F. (2009). Causality Between Corporate Social Performance and

    Financial Performance: Evidence from Canadian Firms. *Journal of Business Ethics*, *89*(3), 409–

    422. https://doi.org/10.1007/s10551-008-0007-7

Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009). Does it Pay to Be Good...And Does it Matter? A

    Meta-Analysis of the Relationship between Corporate Social and Financial Performance. *SSRN*

    Electronic Journal. https://doi.org/10.2139/ssrn.1866371

Margolis, J. D., & Walsh, J. P. (2003). Misery Loves Companies: Rethinking Social Initiatives by Business.

    Administrative Science Quarterly, *48*(2), 268. https://doi.org/10.2307/3556659

Marrewijk, M. (2003). Concepts and Definitions of CSR and Corporate Sustainability: Between Agency and Communion. *Journal of Business Ethics*, *44*, 95–105. https://doi.org/10.1023/A:1023331212247

Martínez, P., Pérez, A., & Rodríguez del Bosque, I. (2013). Measuring Corporate Social Responsibility in tourism: Development and validation of an efficient measurement scale in the hospitality industry. *Journal of Travel & Tourism Marketing*, *30*(4), 365–385. https://doi.org/10.1080/10548408.2013.784154

Martinez-Conesa, I., Soto-Acosta, P., & Palacios-Manzano, M. (2017). Corporate social responsibility and its effect on innovation and firm performance: An empirical research in SMEs. *Journal of Cleaner Production*, *142*, 2374–2383. https://doi.org/10.1016/j.jclepro.2016.11.038

McWilliams, A., & Siegel, D. (2000). Corporate social responsibility and financial performance: Correlation or misspecification? *Strategic Management Journal*, *21*(5), 603–609. https://doi.org/10.1002/(SICI)1097-0266(200005)21:5<603::AID-SMJ101>3.0.CO;2-3

McWilliams, A., & Siegel, D. (2001). Corporate Social Responsibility: A Theory of the Firm Perspective. *Academy of Management Review*, *26*(1), 117–127. https://doi.org/10.5465/amr.2001.4011987

Millington, S. B. and A. (n.d.). *Does it pay to be different? An analysis of the relationship between corporate social and financial performance | Kopernio*. Retrieved October 4, 2020, from https://kopernio.com/viewer?doi=10.1002%2Fsmj.714&token=WzI5MjA3MDMsIjEwLjEwMDIvc21q LjcxNCJd.JNMJDjB6AgItEdImKRm8_LjByk8

Mishra, S., & Suar, D. (2010). Does Corporate Social Responsibility Influence Firm Performance of Indian Companies? *Journal of Business Ethics*, *95*(4), 571–601. https://doi.org/10.1007/s10551-010-0441-1

Morsing, M., & Perrini, F. (2009). CSR in SMEs: Do SMEs matter for the CSR agenda? *Business Ethics: A European Review*, *18*(1), 1–6. https://doi.org/10.1111/j.1467-8608.2009.01544.x

MSCI KLD 400 Social Index. (2011). https://www.msci.com/msci-kld-400-social-index

Muller, A., & Kolk, A. (2010). Extrinsic and Intrinsic Drivers of Corporate Social Performance: Evidence from Foreign and Domestic Firms in Mexico. *Journal of Management Studies*, *47*(1), 1–26. https://doi.org/10.1111/j.1467-6486.2009.00855.x

Murillo, D., & Lozano, J. M. (2006). SMEs and CSR: An Approach to CSR in their Own Words. *Journal of Business Ethics*, *67*(3), 227–240. https://doi.org/10.1007/s10551-006-9181-7

O'Donohue, W., & Torugsa, N. (Ann). (2016). The moderating effect of 'Green' HRM on the association between proactive environmental management and financial performance in small firms. *The International Journal of Human Resource Management*, *27*(2), 239–261. https://doi.org/10.1080/09585192.2015.1063078

O'Leary-Kelly, S. W., & J. Vokurka, R. (1998). The empirical assessment of construct validity. *Journal of Operations Management*, *16*(4), 387–405. https://doi.org/10.1016/S0272-6963(98)00020-5

Ooghe, H., Vander Bauwhede, H., & Van Wymeersch, C. (2017). *Financiële analyse van de onderneming: Theorie en toepassing op de jaarrekening volgens Belgian GAAP en IFRS* (5th ed.). Intersentia.

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate Social and Financial Performance: A Meta-Analysis. *Organization Studies*, *24*(3), 403–441. https://doi.org/10.1177/0170840603024003910

Peloza, J. (2009). The Challenge of Measuring Financial Impacts From Investments in Corporate Social Performance. *Journal of Management*, *35*(6), 1518–1541. https://doi.org/10.1177/0149206309335188

Perez-Sanchez, D., Barton, J. R., & Bower, D. (2003). Implementing environmental management in SMEs. *Corporate Social Responsibility and Environmental Management*, *10*(2), 67–77. https://doi.org/10.1002/csr.37

Perrini, F., Russo, A., & Tencati, A. (2007). CSR Strategies of SMEs and Large Firms. Evidence from Italy. *Journal of Business Ethics*, *74*(3), 285–300. https://doi.org/10.1007/s10551-006-9235-x

Perrini, F., Russo, A., Tencati, A., & Vurro, C. (2011). Deconstructing the Relationship Between Corporate Social and Financial Performance. *Journal of Business Ethics*, *102*(1), 59–76. https://doi.org/10.1007/s10551-011-1194-1

Pervan, M., & Višić, J. (2012). Influence of firm size on its business success. *Croatian Operational Research Review*, *3*(1), 213–223.

Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal*, *12*(S2), 95–117. https://doi.org/10.1002/smj.4250121008

Porter, M. E., & Kramer, M. R. (2006). Strategy & Society: The Link Between Competitive Advantage and Corporate Social Responsibility. *Harvard Business Review*, *84*(12), 78–92.

Preston, L. E., & O'Bannon, D. P. (1997). The Corporate Social-Financial Performance Relationship: A Typology and Analysis. *Business & Society*, *36*(4), 419–429. https://doi.org/10.1177/000765039703600406

Priya, K., & Nimalathasan, B. (2013). *Liquidity Management and Profitability: A Case Study of Listed Manufacturing Companies in Sri Lanka*. http://repo.lib.jfn.ac.lk/xmlui/handle/123456789/599

Productie in de industrie | Statbel. (2020). https://statbel.fgov.be/nl/themas/conjunctuurindicatoren/productie/productie-de-industrie#figures

Putnam, R. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press.

Reporting of Non-Financial Information by SMEs. (2018). https://www.efaa.com/news/reporting-of-non-financial-information-by-smes.html

Reverte, C., Gómez-Melero, E., & Cegarra-Navarro, J. G. (2016). The influence of corporate social responsibility practices on organizational performance: Evidence from Eco-Responsible Spanish firms. *Journal of Cleaner Production*, *112*, 2870–2884. https://doi.org/10.1016/j.jclepro.2015.09.128

Robert, B., & Dresse, L. (n.d.). *De industrie in België: Vroegere ontwikkelingen en toekomstige uitdagingen*. 41.

Russo, A., & Perrini, F. (2010). Investigating Stakeholder Theory and Social Capital: CSR in Large Firms and SMEs. *Journal of Business Ethics*, *91*(2), 207–221. https://doi.org/10.1007/s10551-009-0079-z

Russo, A., & Tencati, A. (2009). Formal vs. Informal CSR Strategies: Evidence from Italian Micro, Small, Medium-sized, and Large Firms. *Journal of Business Ethics*, *85*(2), 339–353. https://doi.org/10.1007/s10551-008-9736-x

Rutherfoord, R., Blackburn, R. A., & Spence, L. J. (2000). Environmental management and the small firm: An international comparison. *International Journal of Entrepreneurial Behavior & Research*, *6*(6), 310–326. https://doi.org/10.1108/13552550010362750

Rynes, S. (1991). Recruitment, Job Choice, and Post-Hire Consequences: A Call For New Research Directions. *CAHRS Working Paper Series*, *2*.

Saeidi, S. P., Sofian, S., Saeidi, P., Saeidi, S. P., & Saaeidi, S. A. (2015). How does corporate social

responsibility contribute to firm financial performance? The mediating role of competitive

advantage, reputation, and customer satisfaction. *Journal of Business Research*, *68*(2), 341–350.

https://doi.org/10.1016/j.jbusres.2014.06.024

Salazar, J., Husted, B. W., & Biehl, M. (2012). Thoughts on the Evaluation of Corporate Social

Performance Through Projects. *Journal of Business Ethics*, *105*(2), 175–186.

https://doi.org/10.1007/s10551-011-0957-z

Saleem, Q., & Rehman, R. U. (2011). *Impacts of liquidity ratios on profitability*. *1*(7), 4.

Salzmann, O., Ionescu-somers, A., & Steger, U. (2005). The Business Case for Corporate Sustainability:

Literature Review and Research Options. *European Management Journal*, *23*(1), 27–36.

https://doi.org/10.1016/j.emj.2004.12.007

Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of

Extension*, *37*(2), 1–5.

Sarbutts, N. (2003). Can SMEs "do" CSR? A practitioner's view of the ways small- and medium-sized

enterprises are able to manage reputation through corporate social responsibility. *Journal of

Communication Management*, *7*, 340–347. https://doi.org/10.1108/13632540310807476

Schoonjans, B., Van Cauwenberge, P., & Vander Bauwhede, H. (2013). Formal business networking and

SME growth. *Small Business Economics*, *41*(1), 169–181. https://doi.org/10.1007/s11187-011-

9408-6

Schreck, P. (2011). Reviewing the Business Case for Corporate Social Responsibility: New Evidence and

Analysis. *Journal of Business Ethics*, *103*(2), 167. https://doi.org/10.1007/s10551-011-0867-0

Sen, S., & Cowley, J. (2013). The Relevance of Stakeholder Theory and Social Capital Theory in the

Context of CSR in SMEs: An Australian Perspective. *Journal of Business Ethics*, *118*(2), 413–427.

https://doi.org/10.1007/s10551-012-1598-6

Sharma, S., Pablo, A. L., & Vredenburg, H. (1999). Corporate environmental responsiveness strategies:

The importance of issue interpretation and organizational context. *The Journal of Applied

Behavioral Science*, *35*(1), 87–108. http://dx.doi.org/10.1177/0021886399351008

Simon, M. K., & Goes, J. (2013). *Scope, Limitations and Delimitations*. 3.

Simpson, M., Taylor, N., & Barker, K. (2004). Environmental responsibility in SMEs: Does it deliver

    competitive advantage? *Business Strategy and the Environment*, *13*(3), 156–171.

    https://doi.org/10.1002/bse.398

Slonim, R., Wang, C., Garbarino, E., & Merrett, D. (2013). Opting-in: Participation bias in economic

    experiments. *Journal of Economic Behavior & Organization*, *90*, 43–70.

    https://doi.org/10.1016/j.jebo.2013.03.013

SME United. (2020). *Non-financial reporting: SMEs need a simplified voluntary standard*.

    https://www.smeunited.eu/news/non-financial-reporting-smes-need-a-simplified-voluntary-standard

Spence, Laura J. (1999). Does size matter? The state of the art in small business ethics. *Business Ethics:*

    A European Review, *8*(3), 163–174. https://doi.org/10.1111/1467-8608.00144

Spence, Laura J., & Schmidpeter, R. (2003). SMEs, Social Capital and the Common Good. *Journal of*

    Business Ethics, *45*(1), 93–108. https://doi.org/10.1023/A:1024176613469

Sprinkle, G. B., & Maines, L. A. (2010). The benefits and costs of corporate social responsibility. *Business*

    Horizons, *53*(5), 445–453. https://doi.org/10.1016/j.bushor.2010.05.006

Stam, W., Arzlanian, S., & Elfring, T. (2014). Social capital of entrepreneurs and small firm performance: A

    meta-analysis of contextual and methodological moderators. *Journal of Business Venturing*, *29*(1),

    152–173. https://doi.org/10.1016/j.jbusvent.2013.01.002

Statistieken over kmo's in België | FOD Economie. (n.d.). Retrieved February 4, 2021, from

    https://economie.fgov.be/nl/themas/ondernemingen/kmos-en-zelfstandigen-cijfers/statistieken-

    over-kmos-belgie

Sweeney, L. (2005). *Corporate social responsibility in Ireland: Barriers and opportunities experienced by*

    SMEs when undertaking CSR | EndNote Click.

    https://kopernio.com/viewer?doi=10.1108%2F14720700710820597&token=WzI5MjA3MDMsIjEwLj

    ExMDgvMTQ3MjA3MDA3MTA4MjA1OTciXQ.IuOmP3ypDUXigGdQDnecqHp8aOI

Tang, Z., Hull, C. E., & Rothenberg, S. (2012). How Corporate Social Responsibility Engagement Strategy

    Moderates the CSR-Financial Performance Relationship: CSR Engagement Strategy. *Journal of*

    Management Studies, *49*(7), 1274–1303. https://doi.org/10.1111/j.1467-6486.2012.01068.x

Tellis, W. M. (1997). *Introduction to Case Study*. 15.

Teoh, S. H., Welch, I., & Wazzan, C. P. (1999). The Effect of Socially Activist Investment Policies on the Financial Markets: Evidence from the South African Boycott. *The Journal of Business*, *72*(1), 35–89. https://doi.org/10.1086/209602

Thomas, S. J. C. and J. M. (n.d.). *Corporate financial performance and corporate social performance: An update and reinvestigation | Kopernio*. Retrieved October 4, 2020, from https://kopernio.com/viewer?doi=10.1002%2Fcsr.182&token=WzI5MjA3MDMsIjEwLjEwMDIvY3NyLjE4MiJd.vP-OCHTu1-vn5QzKmZ78XzHaLRA

Thompson, C. G., Kim, R. S., Aloe, A. M., & Becker, B. J. (2017). Extracting the Variance Inflation Factor and Other Multicollinearity Diagnostics from Typical Regression Results. *Basic and Applied Social Psychology*, *39*(2), 81–90. https://doi.org/10.1080/01973533.2016.1277529

Thompson, J. K., & Smith, H. L. (1991). Social Responsibility and Small Business: Suggestions for Research. *Journal of Small Business Management*, *29*(1), 30.

Tilley, F. (2000). Small firm environmental ethics: How deep do they go? *Business Ethics: A European Review*, *9*(1), 31–41. https://doi.org/10.1111/1467-8608.00167

Tobin, J. (1958). Estimation of Relationships for Limited Dependent Variables. *Econometrica*, *26*(1), 24–36. https://doi.org/10.2307/1907382

Torugsa, N. A., O'Donohue, W., & Hecker, R. (2012). Capabilities, Proactive CSR and Financial Performance in SMEs: Empirical Evidence from an Australian Manufacturing Industry Sector. *Journal of Business Ethics*, *109*(4), 483–500. https://doi.org/10.1007/s10551-011-1141-1

Turban, D. B., & Greening, D. W. (1997). Corporate Social Performance And Organizational Attractiveness To Prospective Employees. *Academy of Management Journal*, *40*(3), 658–672. https://doi.org/10.5465/257057

Turker, D. (2009). Measuring Corporate Social Responsibility: A Scale Development Study. *Journal of Business Ethics*, *85*(4), 411–427. https://doi.org/10.1007/s10551-008-9780-6

Udayasankar, K. (2008). Corporate Social Responsibility and Firm Size. *Journal of Business Ethics*, *83*(2), 167–175. https://doi.org/10.1007/s10551-007-9609-8

UNIZO. (2019). *KMO-rapport*. https://www.unizo.be/kmo-rapport-2019

Valdez-Juárez, L. E., Gallardo-Vázquez, D., & Ramos-Escobar, E. A. (2018). CSR and the Supply Chain: Effects on the Results of SMEs. *Sustainability*, *10*(7), 2356. https://doi.org/10.3390/su10072356

Vance, S. (1975). Are socially responsible corporations good investment risks? *Management Review*, *64*(8), 18–24.

Vintilă, G., & Alexandra Nenu, E. (2016). Liquidity and Profitability Analysis on the Romanian Listed Companies. *Journal of Eastern Europe Research in Business and Economics*, 1–8. https://doi.org/10.5171/2016.161707

Visser, W. (2010). *The Age of Responsibility: CSR 2.0 and the New DNA of Business* (SSRN Scholarly Paper ID 1725159). Social Science Research Network. https://papers.ssrn.com/abstract=1725159

Vives, A. (2006). Social and Environmental Responsibility in Small and Medium Enterprises in Latin America. *Journal of Corporate Citizenship*, *2006*. https://doi.org/10.9774/GLEAF.4700.2006.sp.00006

Vo, L. C. (2011). Corporate social responsibility and SMEs: A literature review and agenda for future research. *Problems and Perspectives in Management*, *9*, 89–97.

Vyakarnam, S., Bailey, A., Myers, A., & Burnett, D. (1997). Towards an Understanding of Ethical Behaviour in Small Firms. *Journal of Business Ethics*, *16*(15), 1625–1636. https://doi.org/10.1023/A:1022452502299

Waddock, S. A., & Graves, S. B. (1997b). The Corporate Social Performance–Financial Performance Link. *Strategic Management Journal*, *18*(4), 303–319. https://doi.org/10.1002/(SICI)1097-0266(199704)18:4<303::AID-SMJ869>3.0.CO;2-G

Wagner, M., Phu, N. V., Azomahou, T., & Wehrmeyer, W. (2002). The relationship between the environmental and economic performance of firms: An empirical analysis of the European paper industry. *Corporate Social Responsibility and Environmental Management*, *9*(3), 133–146. https://doi.org/10.1002/csr.22

Wahba, H. (2008). Does the market value corporate environmental responsibility? An empirical examination. *Corporate Social Responsibility and Environmental Management*, *15*(2), 89–99. https://doi.org/10.1002/csr.153

Wang, H., Choi, J., & Li, J. (2008). Too Little or Too Much? Untangling the Relationship Between Corporate Philanthropy and Firm Financial Performance. *Organization Science*, *19*(1), 143–159. https://doi.org/10.1287/orsc.1070.0271

Wang, Q., Dou, J., & Jia, S. (2015). A Meta-Analytic Review of Corporate Social Responsibility and Corporate Financial Performance: The Moderating Effect of Contextual Factors. *Business & Society*. https://doi.org/10.1177/0007650315584317

Weber, M. (2008). The business case for corporate social responsibility: A company-level measurement approach for CSR. *European Management Journal*, *26*(4), 247–261. https://doi.org/10.1016/j.emj.2008.01.006

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180. https://doi.org/10.1002/smj.4250050207

Withisuphakorn, P., & Jiraporn, P. (2016). The effect of firm maturity on corporate social responsibility (CSR): Do older firms invest more in CSR? *Applied Economics Letters*, *23*(4), 298–301. https://doi.org/10.1080/13504851.2015.1071464

Wood, D. J. (1991). Corporate Social Performance Revisited. *Academy of Management Review*, *16*(4), 691–718. https://doi.org/10.5465/amr.1991.4279616

Wood, D. J. (2010). Measuring Corporate Social Performance: A Review. *International Journal of Management Reviews*, *12*(1), 50–84. https://doi.org/10.1111/j.1468-2370.2009.00274.x

World Bank SME Finance. (n.d.). [Text/HTML]. World Bank. Retrieved January 10, 2021, from https://www.worldbank.org/en/topic/smefinance

Wright, P., & Ferris, S. P. (1997). Agency Conflict and Corporate Strategy: The Effect of Divestment on Corporate Value. *Strategic Management Journal*, *18*(1), 77–83. https://doi.org/10.1002/(SICI)1097-0266(199701)18:1<77::AID-SMJ810>3.0.CO;2-R

Yasuda, T. (2005). Firm Growth, Size, Age and Behavior in Japanese Manufacturing. *Small Business Economics*, *24*(1), 1–15. https://doi.org/10.1007/s11187-005-7568-y

Zaefarian, G., Kadile, V., Henneberg, S. C., & Leischnig, A. (2017). Endogeneity bias in marketing research: Problem, causes and remedies. *Industrial Marketing Management*, *65*, 39–46. https://doi.org/10.1016/j.indmarman.2017.05.006

Zhang, Y., Wei, J., Zhu, Y., & George-Ufot, G. (2020). Untangling the relationship between Corporate Environmental Performance and Corporate Financial Performance: The double-edged moderating effects of environmental uncertainty. *Journal of Cleaner Production*, *263*, 121584. https://doi.org/10.1016/j.jclepro.2020.121584

Zhao, X., & Murrell, A. (2021). Does A Virtuous Circle Really Exist? Revisiting the Causal Linkage Between CSP and CFP. *Journal of Business Ethics.* https://doi.org/10.1007/s10551-021-04769-5

Zhao, X., & Murrell, A. J. (2016). Revisiting the corporate social performance-financial performance link: A replication of Waddock and Graves. *Strategic Management Journal*, *37*(11), 2378–2388. https://doi.org/10.1002/smj.2579

Attachment 1: Overview of Research on the CSP-CFP linkage

Table 13 *Existing research on the CSP-CFP association in large firms*

AUTHOR	THEORY	INDEPENDENT VARIABLE	DEPENDENT VARIABLE	CONTROLS	FINDINGS
Barnett & Salomon (2012)	stakeholder theory	fund's screening intensity	risk-adjusted performance of a social responsible investment	fund age, size, fund's risk profile and % stocks vs bonds	curvilinear relationship (U-shape): it takes a while for the company to see the benefits
Brammer & Millington (2008)	instrumental stakeholder theory, agency theory and Porter's hypothesis	number of charitable donations	leverage, profitability and cash holdings	size, industry, R&D, and advertising intensity	firms with both unusually high and low CSP have higher financial performance than other firms
Callan & Thomas (2009)	stakeholder theory	KLD dataset	ROA, ROE, ROS and Tobin's Q	size, capital, risk, R&D, ad spending	positive
Guenster et al. (2011)	resource-based view of the firm	a comprehensive database of firm-level eco-efficiency scores	ROA and Tobin's Q	size, age, sales growth, R&D investments	positive
Jo & Harjoto (2012)	stakeholder theory and overinvestment argument based on agency theory	KLD dataset	industry adjusted Tobin's Q & ROA	size, leverage, R&D, ad spending, industry	positive

Konar & Cohen (2001)	n.d.	TRI88 (pounds of toxic chemicals emitted per dollar revenue of the firm) and LAW89 (number of environmental lawsuits pending against the firm)	Tobin's Q	R&D investment, ad spending, industry, sales growth, import-consumption ratio, market share of the firm	positive
Lee & Park (2009)	social impact theory and synergy theory	KLD stats database	average market value, ROA & ROE	size, leverage, year effects	positive for hotels, no statistically significant relationship for casinos
McWilliams & Siegel (2000)	supply and demand framework	KLD dataset	measures of accounting profits (not clearly stated which measures)	size, risk, industry, advertising spend, R&D investments	no statistically significant relationship
Saeidi et al. (2015)	existing literature	scale items on economic, legal, ethical and discretionary dimensions	balanced scorecard methodology	firm size, age and revenue	positive
Tang et al. (2012)	absorptive capacity theory integrated in resource-based view	KLD dataset	ROA	slack resources, R&D investment, industry and firm size	positive
Wang et al. (2008)	resource dependency theory and cost-benefit analysis	dollar amount of charitable giving scaled by a firm's sales	ROA and Tobin's Q	R&D investment, ad spending, firms size, firm age and debt ratio	inverse U-shape: first, the benefits prevail but after a while, the costs start to take over

Source: own elaboration along the lines of Grewatsch and Kleindienst (2017)

Table 14 *Existing research on the CSP-CFP link in small firms*

AUTHOR	THEORY	INDEPENDENT VARIABLE	DEPENDENT VARIABLE	CONTROLS	FINDINGS
Aragón et al. (2016)	resource-based view of the firm	survey items measuring environmental performance	both perceptions of managers and objective data on ROI and earnings growth	size and dealer affiliation	positive
Bagur-Femenias et al. (2013)	cost-benefit analysis	survey items concerning external pressure and adoption of environmental practices	survey on the evolution of sales, benefits and market share over the past 2 years	/	positive
Cantele & Zardini (2018)	stakeholder theory	survey items on the social, environmental, economic dimension and sustainability formal practices implementation	survey on ROA, ROS and turnover of the last 3 years	/	positive
Choi et al. (2018)	social capital theory	charitable donations	ROA	size, leverage, operating cash flows, sales growth, R&D expense, advertising expense, age, percentage of foreign investors ownership	strong positive relationship for the larger or hi-tech SMEs

Clemens (2006)	competitive advantage	survey comparing green performance to competitors	survey comparing accounting measures to competitors	firm size and respondent's confidence in existing green standards	positive
Larrán Jorge et al. (2015)	(natural) resource-based view	survey on green performance	survey on seven indicators previously used by other researchers to evaluate business performance	firm size	positive
Martinez-Conesa et al. (2017)	stakeholder theory	survey containing 4 stakeholder dimensions: employees, customers, suppliers and local community	survey on comparing performance to that of similar firms in the same industry	/	positive
O'Donohue & Torugsa (2016)	resource-based view of the firm	survey on environmental performance	survey on ROA, net profit to sales, liquidity compared to competitors	firm heterogeneity, firm size and potential negative effect of the global financial crisis	positive
Reverte et al. (2016)	resource-based view of the firm	survey on social, economic and environmental dimension of CSR	both quantitative and qualitative indicators of performance	firm strategy, size, age and industry	positive
Torugsa et al. (2012)	resource-based view of the firm	survey on social, economic and environmental dimension of CSR	survey comparing ROA and net profits to sales to that of similar firms	size, duration of experience in managing CSR and potential negative influence of global financial crisis	positive

Source: own elaboration along the lines of Grewatsch and Kleindienst (2017)

Attachment 2: Questionnaire

Table 15 *Questionnaire items*

Social Dimension of CSR
SOC1. We support the employment of disabled people and people at risk of social exclusion
SOC2. We foster training and professional development of our employees
SOC3. We comply with standards related to labour risks, health, safety and hygiene programmes
SOC4. We are committed to job creation
SOC5. We have human resource policies aimed at facilitating the conciliation of employees' professional and personal lives
SOC6. We consider employees' initiatives and proposals in management decisions
SOC7. We are committed to the improvement of the quality of life of our employees
SOC8. Equal opportunities exist for all employees without any type of discrimination
SOC9. We participate in social projects to the community (sponsorships, charities, etc.)
SOC10. We are aware of the importance of making pension plans for our employees
Economic Dimension of CSR
EC1. We are particularly concerned to offer high quality products and/or services to our customers
EC2. Our products and/or services satisfy national and international quality standards (i.e., ISO standards)
EC3. We are characterized as having the best quality-to-price ratio for our products and/or services
EC4. The guarantee of our products and/or services is broader than the market average
EC5. We provide our customers with accurate and complete information about our products and/or services
EC6. Respect for consumer rights is a management priority for our company
EC7. We foster business relationships with suppliers of our same region
EC8. We have effective procedures for handling complaints by our customers
EC9. We offer clear and precise information in the labelling of our products related to our warranty obligations.
EC10. We have a formal procedure for the interaction and dialogue with our customers, suppliers and the other stakeholders of our company
Environmental Dimension of CSR
ENV1. We are able to minimize our environmental impact using environmentally-friendly products
ENV2. We make investments in energy savings programmes
ENV3. We adopt programmes for the introduction of alternative sources of energy
ENV4. We participate in activities related to the protection and improvement of our natural environment
ENV5. We are in favour of reductions in gas emissions and in the production of wastes, and in favour of recycling materials
ENV6. We have a positive predisposition to the use, purchase, or production of ecological goods
ENV7. We value the use of recyclable containers and packaging

Source: Reverte et al. (2016)

Attachment 3: OLS Assumptions

Before starting off with the OLS regression analysis, a number of assumptions need to be tested (Berry, 1993). Below, only the findings from the main model are reported, however, a similar approach was used for the additional tests.

3.1. Linearity of the regression function

In order to be able to perform linear regression, the relationship between the predictor and outcome variables should be linear. To check whether this assumption is satisfied or not, a scatterplot needs to be executed of the residual versus the predicted value which is depicted in Figure 1 and 2 (Berry, 1993; Gujarati, 2003). Considering that both of the dependent variables' error terms do not systematically differentiate from zero, it can be assumed that the linearity condition is met.

3.2. Homoscedasticity

On top of the linearity condition, homoscedasticity needs to be present in order to be able to execute OLS regression. In other words, the error terms should be constant across all levels of the independent variable (Gujarati, 2003). To meet this requirement, the scatterplots represented by Figure 1 and 2 should show no specific relationship between the standardized residuals and the predictor, which is the case in this situation. Additionally, the Breusch-Pagan test was executed as an additional test (Koenker, 1981). With a p-value of 0,365 for the equation with ROA and of 0,315 for the equation with sales growth, the null-hypothesis was not rejected and hereby confirming that the data is homoscedastic.

3.3. Outliers and Influential Cases

Furthermore, the dataset should be checked for potential outliers and influential cases. Outliers are defined as extreme observations and can have a big impact on the model (Ghosh & Vogt, 2012). Rather than truncating these data points, they were winsorized at the 1st and 99th percentile so that they would still be taken into account and would not be changed fundamentally. This was done for both independent variables and for the current ratio, one of the four control variables in the regression model. In order to check whether influential cases are present within the dataset, the Cook's distance should be taken into account. A Cook's distance larger than one is worrisome, however, the maximum amounted to 0,42 which is considerably below the accepted standard.

3.4. Normality of Error Terms

Two tests were performed to assess the normality of the error terms: a normal probability plot was made and additionally, the Kolmogorov-Smirnov test was executed. As can be seen in Figure 3 and 4, the residuals do not seem to diverge significantly from the normality line. However, the null hypothesis of the Kolmogorov-Smirnov test was faintly rejected at a 0,05 significance level, indicating that there are small departures from normality. Fortunately, this does not pose any serious issues, especially in large datasets (Blanca et al., 2017).

3.5. Multicollinearity

The last condition that needs to be met before being able to execute OLS regression analysis is multicollinearity. Multicollinearity refers to a situation in which two or more independent variables are highly correlated with one another and is typically measured by means of the variance inflation factor (Alin, 2010). As the highest VIF amounts to 1.419, it can be concluded that multicollinearity is not present.
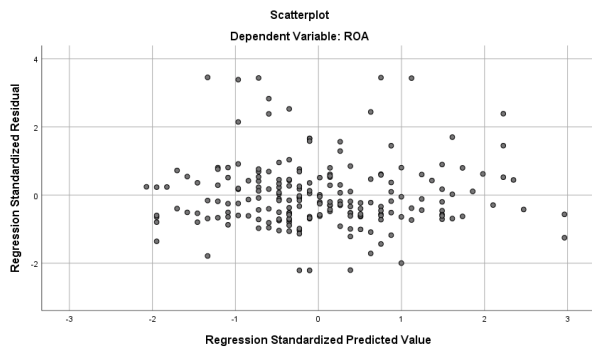
Figure 1 *Scatterplot of ROA*
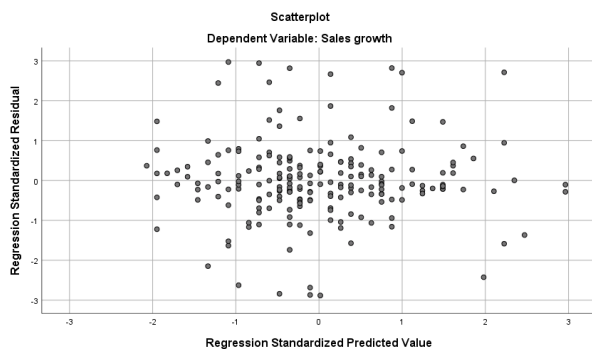

Figure 2 *Scatterplot of Sales Growth*

Figure 3 *Normal P-P Plot for ROA*

Normal P-P Plot of Standardized Residual for ROA

Figure 4 *Normal P-P Plot for Sales Growth*

Normal P-P Plot of Standardized Residual for Salesgrowth
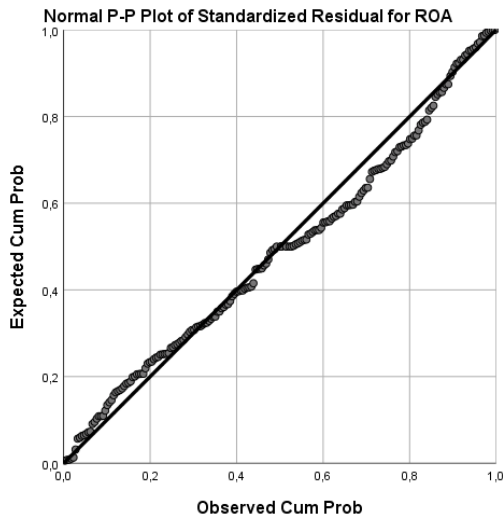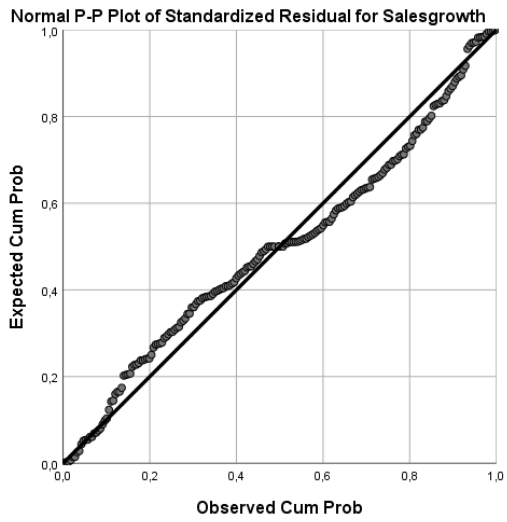
Attachment 4: Alternative Measurement of Industry Variable

With regard to the alternative measurement of the industry variable, a categorization was made based upon the level of technology application within the manufacturing industries as it is argued that high-tech manufacturing industries outperform other manufacturing industries in terms of growth (Almus & Nerlinger, 1999). Ultimately, two dummy variables had to be created called HIGH_TECH and MEDIUM_TECH as a means to account for this potential difference in growth. To be able to do this, the manufacturing sectors that are present within this sample needed to be classified under one of the following categories: high-tech, medium-tech and low-tech. Fortunately, a classification is provided by Eurostat (2018) according to the level of technology implemented within the separate manufacturing sectors and is presented on the following page in Figure 1. In the context of this study, the high-technology and medium-high-technology categories were taken together to form the high-tech category while the medium-low-technology and the low-technology classification served as the basis for the medium-tech category and the low-tech category respectively. The occurrence of the firms included in the sample under each of the three categories is documented below in Table 16. Based upon these three categories, the two dummy variables HIGH_TECH and MEDIUM_TECH were created.

Table 16 *Sample categorization according to technology adaptation*

CATEGORY	N
HIGH-TECH	68
MEDIUM-TECH	46
LOW-TECH	90

Based on NACE Rev. 2 2-digit level

In a few cases (Research and development (R & D), Employment in high-tech and Human resources in science and technology (HRST)), due to restrictions of the source data used, Eurostat also uses a classification based on NACE Rev. 2 at 2-digit level.

- High-technology:
    - Manufacture of basic pharmaceutical products and pharmaceutical preparations (21);
    - Manufacture of computer, electronic and optical products (26)

- Medium-high-technology:
    - Manufacture of chemicals and chemical products (20);
    - Manufacture of electrical equipment (27);
    - Manufacture of machineryand equipment n.e.c. (28);
    - Manufacture of motor vehicles, trailers and semi-trailers (29);
    - Manufacture of other transport equipment (30)

- Medium-low-technology:
    - Manufacture of coke and refined petroleum products (19);
    - Manufacture of rubber and plastic products (22);
    - Manufacture of other non-metallic mineral products (23);
    - Manufacture of basic metals (24);
    - Manufacture of fabricated metal products, except machinery and equipment (25)
    - Repair and installation of machinery and equipment (33)

- Low-technology:
    - Manufacture of food products (10);
    - Manufacture of beverages (11);
    - Manufacture of tobacco products (12);
    - Manufacture of textiles (13);
    - Manufacture of wearing apparel (14);
    - Manufacture of leather and related products (15);
    - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (16);
    - Manufacture of paper and paper products (17);
    - Printing and reproduction of recorded media (18)
    - Manufacture of furniture (31);
    - Other manufacturing (32)

Retrieved from Eurostat (2018)