

# Financial Support and Institutional Environment on Resource Actions by SMEs

The effect of public and private financial support on implemented resource actions by SMEs across Europe

**Radboud University**



<i>Author:</i>	Thomas Steenbrink
<i>Student number:</i>	1047740
<i>Supervisor:</i>	A.U. Saka-Helmhout
<i>Co-reader:</i>	M. Wierenga
<i>Date:</i>	9-8-2021

## **Abstract**

This study looked into the effect of public and private financial support on the resource actions implemented by European SMEs. The process of finding an answer to this relation, the database of Flash Eurobarometer 456, Kantar TNS Political & Social has been used. After a missing data analysis and scoping down the irrelevant cases, the dataset remained of 2719 valid cases. The theorised relations were tested through a multiple regression analysis. The results showed that public, as well as private financial support, positively increase the implemented resource actions by SMEs. The theorised moderation effect of the institutional environment showed an insignificant result on the direct relations.

**Keywords:** Resource Actions, Public Financial Support, Private Financial Support, Institutional Environment.

**Paper type:** Master Thesis

## Table of content

<b>Abstract.....</b>	<b>1</b>
<b>Chapter 1: Introduction .....</b>	<b>4</b>
1.1 Background.....	4
1.2 Problem statement.....	5
1.3 Objective and research question .....	6
1.4 Relevance.....	7
1.5 Outline.....	8
<b>Chapter 2: Theoretical framework.....</b>	<b>9</b>
2.1 The Adoption of Resource Actions.....	9
2.2 Financial support.....	11
2.3 Institutional environment.....	13
2.4 Conceptual model .....	19
<b>Chapter 3: Methodology .....</b>	<b>20</b>
3.1 Dataset and sample.....	20
3.2 Variables.....	21
3.2.1 Dependent variable .....	21
3.2.2 Independent variable.....	22
3.2.3 Moderating variable.....	22
3.2.4 Control variables.....	23
3.3 Analytical technique.....	23
3.4 Research ethics.....	26
<b>Chapter 4: Results .....</b>	<b>27</b>
4.1 Descriptive statistics.....	27
4.2 Assumptions .....	29
4.3: Regression analysis .....	36
<b>Chapter 5: Discussion.....</b>	<b>41</b>
5.1: The impact of financial support on SMEs resource actions .....	41
5.2: The effect of the institutional environment .....	42
5.3: Control variables.....	43
<b>Chapter 6: Conclusion.....</b>	<b>46</b>
6.1: Findings of the study.....	46
6.2: Implications .....	48
6.3: Limitations.....	49

6.4: Directions for future research .....	50
<b>References .....</b>	<b>51</b>
<b>Appendix.....</b>	<b>57</b>
Appendix 1: Total list of countries Flash Eurobarometer 456 .....	57
Appendix 2: Descriptive analysis .....	58
Appendix 3: Missing value analysis .....	62
Appendix 4: Normality test .....	66
Appendix 5: Boxplot SME_RA.....	69
Appendix 6: Multiple regression analysis.....	70

## Chapter 1: Introduction

This chapter will provide a first overview of the investigated topic. It starts with describing the background of the problem, continuing with the problem statement. This will result in the problem statement together with the research question. After, the relevance of this study will be given, and the chapter ends with the outline of the paper.

### 1.1 Background

Across the globe there is a growing concern regarding sustainability practices. Since the Paris Climate Agreement in 2015, 197 countries agreed to reduce their carbon emission to stop the rise of the global temperature by 2 degrees Celsius (United Nations Framework Convention on Climate Change, 2018).

Countries translated the United Nations Framework Convention on Climate Change (UNFCCC) agreement towards legislation to meet the goals set in the Paris Climate Agreement. This newly defined legislation is aimed at making the step towards sustainability practises more attractive for firms by giving grants or subsidies and benefits for pursuing sustainability practises (Rijksoverheid, 2020).

Looking at the sustainability issue on a corporate level, it is obvious that some firms are currently following a proactive environmental strategy, while others wait for government regulations regarding resource actions (Reilly & Weirup, 2012). Previous research in the field of environmental strategy is predominantly addressing the focus on MNEs, while more recent literature is currently aimed at the relation between SMEs and environmental strategy (Spence, 1999) (Jenkins, 2004) (Perrini, Russo, & Tencati, 2007) (Kusyk & Lozano, 2007) (Reilly & Weirup, 2012). The focus on resource actions from a MNE view is mostly because of the greater visibility of MNE practises in a physical sense compared to the small visibility of SMEs (Perrini, Russo, & Tencati, 2007). As a result, governments, NGO's and other stakeholders are more inclined to question and exert pressure on MNEs than on SMEs (Lynch-Wood, Williamson, & Jenkins, 2009). The institutional pressures MNEs face, are also applicable to SMEs, however, SMEs do not experience these pressures as important as MNEs do, due to the lack of urgency in their local environment (Perrini, Russo, & Tencati, 2007) (Lynch-Wood, Williamson, & Jenkins, 2009). Within SMEs, sustainability practises are dependent on the beliefs and values of the people managing the SME (Jenkins, 2004) (Perrini, Russo, & Tencati,

2007) (Nejati, Quazi, Amran, & Ahmad, 2017). Therefore, these practises are based upon the relationships between the managing director of the SME and the various stakeholders and local environment.

### 1.2 Problem statement

The research conducted in the field of MNEs is helpful in explaining the pressures for resource actions, however, the response of SMEs regarding these pressures greatly differs. The focus on SME resource actions is becoming more important since SMEs account for 99% of all European businesses and the impact of the institutional environment differs among SMEs. Moreover, Nejati et al. (2017) looked into the relation between resource actions and performance. They found that a long-term strategic approach towards a proactive environmental strategy results in an increase in financial performance. Furthermore, they found that SME managers are precautionary in investing in environmental strategies, which raises the question why SMEs still want to pursue environmental strategies (Nejati, Quazi, Amran, & Ahmad, 2017).

As addressed in the paragraph before, Nejati et al. (2017) stated that SME managers are precautionary in investing in socially responsible actions, however, the literature fails to explain how these barriers can be circumvented. Since they state that SME managers are careful in making financial investments, it is important to look into how financial hurdles can be solved to help SMEs pursue environmental strategies. Complementary, Clement and Hansen (2003) investigated public financial incentives and the effect on SMEs environmental performance (Clement & Hansen, 2003). They found that public subsidies are an important element for SMEs to start with environmental strategies. However, they conducted their research only in the Nordic European countries, Denmark, Finland, Norway, and Sweden and did not take institutional factors into account which may influence this relationship. In addition, Clement and Hansen (2003) state that little is known about how these financial incentives have stimulated the development of environmental strategies and that this requires further investigation (Clement & Hansen, 2003). Moreover, Kuskys & Lozano (2007) found that SMEs have smaller resources which constrain them to invest in resource actions, since SMEs are risk averse (Kusyk & Lozano, 2007). This means that SMEs experience less pressure, and when they do experience pressure, it is harder to comply to these pressures due to the scarce resources they possess.

Looking at the different pressures SMEs face, Clement and Hansen (2003) stated that the institutional environment of the firms could influence the relationship between the financial incentives by the government and the implemented resource actions. Different scholars came up with several results regarding the institutional environment on the resource actions by SMEs. Perrini et al. (2007) found that the larger a firm, the more inclined the firm is in executing environmental strategies. Furthermore, they state that the level of importance of environmental pressures differ between MNEs and SMEs, however, that the current understanding why this differs is worthwhile looking into (Perrini, Russo, & Tencati, 2007). In addition, they failed in explaining why and how larger firms differ compared to SMEs. Furthermore, Lynch-wood et al. (2009) noted that voluntary resource actions differ between MNEs and SMEs, where SMEs experience little pressures from stakeholders to go beyond the legal environmental requirements inclined by the government. They state that future research should investigate the differences in the institutional environment and the adoption of resource actions by SMEs (Lynch-Wood, Williamson, & Jenkins, 2009). Kusiak and Lozano (2007) extended the stakeholder theory on SMEs resource actions, by looking into barriers and drivers of social performance (Kusiak & Lozano, 2007). They looked into how SMEs face pressure of stakeholders and to what extent this resulted in different drivers and barriers of resource actions. In addition, Raza et al (2019) investigated different stakeholder pressures, market orientation and CSR commitment and the influence of these three on organisational competitive differentiation (Raza, Liu, & Usman, 2019). In their paper they state that CSR commitment of SMEs only result from stakeholder pressure. To conclude, the addressed scholars have different arguments regarding the pressures SMEs encounter to pursue environmental strategies.

Extending the research provided by Perrini et al. (2007) Lynch-wood et al. (2009) Kusiak and Lozano (2007), Raza et al. (2019) and Clement and Hansen (2003), will deliver further understanding on which financial support and institutional factors influence SMEs in implementing resource actions considering the scarce resources they possess naturally.

### 1.3 Objective and research question

The gap found, about how institutions influence the relation between financial support and the environmental strategies by SMEs in Europe, will provide a broader understanding how financial support influence SMEs resource actions and how this is affected by the institutional environment. While Perrini et al. (2007) Lynch-wood et al. (2009) and Kusiak and Lozano (2007) explained differences between environmental strategies by MNEs and SMEs, a broad

understanding why the adoption of environmental strategies differs among SMEs is lacking. Furthermore, the results by Raza et al. (2019) show how institutions matter, however, this study was applied in a different environmental context namely, Pakistani SMEs. Moreover, Clement and Hansen (2003) explained the effect of financial incentives on environmental performance in the Nordic European countries. Applying the findings of Raza et al (2019) and Clement and Hansen (2003) into the context of SMEs in the Europe business environment extends the understanding of SMEs environmental strategies (Raza, Liu, & Usman, 2019). Therefore, the objective of this master thesis is to fill the research gap how institutions influence the relation between financial support and the pursued environmental strategies by SMEs in Europe.

*‘To what extent is the relation between financial support and resource actions influenced by the institutional environment among SMEs?’*

#### 1.4 Relevance

The scope of SMEs is rather important since 99% of all European businesses are defined as SMEs (European Commission, 2018). Furthermore, since 2013, 85% of new employment was coming from SMEs, this means that SMEs have a large share in the total employment and business environment in the European Union (European Commission, 2018). Also, the characteristics of SMEs differ greatly compared to MNEs, which is assumed by early CSR literature. This resulted in false assumptions that MNE resource actions can be reapplied to SMEs (Jenkins, 2004) (Spence, 1999) (Lynch-Wood, Williamson, & Jenkins, 2009). In addition, SMEs individually do not account for a big share of environmental impact, however, their cumulative impact on the environment is remarkable which requires further attention (European Commission, 2018) (Stoian & Gilman, 2017). These facts highlight the importance of research in the field of SMEs.

The relevance of this master thesis consists of two parts, theoretical relevance, and practical relevance. This master thesis tries to explain the resource actions applied by SMEs. It broadens the understanding how financial and institutional factors influence these resource actions. It is considered important to find the relations between the financial support and implemented resource actions since governments are using tax money to fund and help SMEs to go for more sustainable solutions. Moreover, institutions play a role, however, there is no consensus reached about how institutions influence the relation between financial support and resource actions by SMEs.



As stated in paragraph 1.2, early academic research is dominant in the field of MNEs, while to date more research is done in the context of SMEs. However, the gap found leaves room for further research into the field of resource actions and SMEs. Given previous addressed studies, this study changes the perspective and context and looks at resource actions from an SMEs perspective which reflects the theoretical relevance. Furthermore, this thesis helps policy makers, SMEs owners and managers, and other institutional stakeholders in understanding the driving factors behind the resource actions of SMEs. This contributes to the practical relevance since it gives answers how resource actions can be influenced, and which factors help the best for conducting and improving resource actions by SMEs.

### 1.5 Outline

This research is going to continue as follows. In the second chapter more detailed descriptions will be given about the main concepts, namely, resource actions, financial support and the institutional environment. The theoretical framework in chapter 2 enables prior information to be mapped into a visual conceptualization of the various topics of this analysis and how they contribute to each other. This results in a conceptual model. The third chapter discusses the methodology used, and the operationalisation of the main concepts. Chapters 4 will elaborate on the quantitative analyses, while chapter 5 covers the discussion. The thesis concludes with chapter 6 elaborating the conclusions of the whole study, addressing implications, and possible directions for further research.

## Chapter 2: Theoretical framework

In this chapter, the main concepts that are being investigated in this study will be provided. First, the main concepts of resource actions will come forward. Second, the theory of financial support is addressed and how this relates towards resource actions. Finally, the institutional environment will be explained, also related towards resource actions as well as the moderating effect on financial support. Based upon the explained main concepts, several hypotheses are defined. The chapter concludes with a conceptual model, which graphically shows the main concepts and their relationships.

### 2.1 The Adoption of Resource Actions

Resource actions are stemming from the overall concept of corporate social responsibility (CSR). The origin of CSR is coming from the definition of Freeman's stakeholder theory, he defines stakeholders as; *'any group or individual who can affect or is affected by the achievement of the firm's objectives.'* (Freeman, 1984, p. 216). He argued that firms need to be more aware of their external environment since they are sensitive to influences of this external environment (Freeman, 1984). Elkington (1997) described that companies struggled to adopt resource actions since they were only going to cost money. He argued that corporate social responsibility is a three-dimensional concept, consisting of social, economic, and environmental aspects, also known as the Triple Bottom Line (Russo M. V., 2008). Firms should not be focussing on one of these dimensions at once, but rather see it as a complementary concept. Once firms see it as a unified concept, they can benefit from the framework related to implementing corporate social responsibility actions. It must be seen as a triangle of economy, society and environment, also known as people, planet and profit (Elkington, 1997). Firms need to find a balance between these concepts.

The theory of Elkington (1997) and his view on the Triple Bottom Line is since then widely applied in the field of business and social studies (Alhaddi, 2015). The Triple Bottom Line is mostly used in studies regarding sustainability and resource actions. A more specific aspect of CSR is addressed by Guillamon-Saorin et al. (2018), who state that firms distribute resources in an efficient way to add value for both the company and society, this relates to the profit and planet aspect of the Triple Bottom Line (Guillamon-Saorin, Kapelko, & Stefanou, 2018) (Alhaddi, 2015). They state that CSR is aimed at improving society, while adding value for the company. This connects to the definition of resource efficiency, which is aimed at reducing the

resources needed by the firm to diminish its environmental impact (European Commission, 2021). The European Commission (2011) stresses the importance of mutual value between businesses and society and sees that the CSR mechanism remains informal for most SMEs (European Commission, 2011).

Resource efficiency can be translated into several specific practises, resource actions aimed at reducing the impact of the firm on the environment. To be more specific, resource actions are measures or actions to reduce the environmental impact of the firm's operations in different areas under their direct control (European Commission, 2021). This means that resource activities are geared at lowering the business's resource usage while the firm has direct influence on the reduction of this resource utilisation. Neves et al. (2014) defined 12 resource actions that firms have implemented within the food sector (Neves, Drohomeretski, da Costa, & de Lima, 2014). Neves et al. (2014) argued that the resource actions are aimed at reducing the utilisation of resources, simultaneously with adding value to the company by achieving their goals. So, it can be argued that implementing resource actions is a double-edged sword, reducing the impact on the environment while achieving added value for the company.

There are more incentives that influence firms to implement resource actions besides the benefits of resource efficiency. Rademaekers et al. (2012) investigated the most used incentives by policy makers and came up with three dimensions of incentives; Administrative, Economic and Reputational incentives (Rademaekers, et al., 2012). They found that economic and reputational incentives were the most effective. Economic since this kind of incentive reduces the barrier of short-term benefits and potential investment risk for firms. Reputational was found as a very effective incentive for firms to implement resource actions, this is the case since these kinds of benefits do not cost great efforts of financial resources to obtain. Moreover, since SMEs are embedded into the local context, this increases their local responsiveness and improves the reputation of the SME. However, the authors stated that the governmental quality, like regulations, can obstruct the influence of the financial incentives since these governmental systems can vary in their financial priorities (Rademaekers, et al., 2012). The authors only looked into incentives applied by policy makers, not to other financial resources that can stimulate firms adopting resource actions, this is being discussed in the next paragraph.

## 2.2 Financial support

Literature to date shows that provided financial support takes on different forms (Clement & Hansen, 2003) (Kaya, 2014) (European Commission, 2018) (Oguntoye & Quartey, 2020). A distinction can be made between public financial support and private or market-based financial support. Public support consists of government institutions providing capital or tax incentives to help or reinforce the financial state of SMEs. Private or market-based support incorporates a more diverse set of different parties that provide financial support. This can be a bank, financial equity provider, sponsor, investors, or relatives. The effect of these two different forms on the implementation of resource actions will be discussed from here onwards.

### *Public financial support*

Public financial support is a type of policy instrument by governmental institutions to direct capital to firms, who need to apply for this support under certain conditions (Wang & Zhang, 2020) (Dvouletý, Srhoj, & Pantea, 2020). Providing capital is a direct measure by the government, however, the government can also take indirect measures to help firms like lowering tax rates to persuade and help firms (Lee, Walker, & Zeng, 2017) (Wang & Zhang, 2020) (Dvouletý, Srhoj, & Pantea, 2020). Both ways of support, direct and indirect measures, will be discussed in this section.

Overall, Wang and Zhang (2020) and Dvouletý et al. (2020) found that public financial support enhances firm survival and performance. Moreover, in the available literature about public financial support, a consensus is reached on how this financial support also affects resource actions by firms, namely, public financial support helps and motivates SMEs in pursuing environmental strategies (Wang & Zhang, 2020) (Dvouletý, Srhoj, & Pantea, 2020). However, there is no broad understanding on which kind of support helps best. For instance, Wang and Zhang (2020) looked into the effect of state subsidies by the Chinese government on the environmental spending by state-owned and non-state-owned enterprises. They found a positive effect between the public subsidies and the environmental spending by state-owned as well as non-state-owned firms. This means that firms who receive public financial support will behave more environmentally responsible in contrary to the firms who do not receive the public subsidies. This is also in line with the results of the research executed by Lee et al. (2017), who also found a positive relationship between voluntary CSR disclosure and governmental subsidies (Lee, Walker, & Zeng, 2017). This result was stronger for direct, non-tax-related subsidies. Moreover, Yang et al. (2021) found that firms obtaining public subsidies, participated

more in technological innovation aimed at resource actions compared to firms that did not obtain public financial support (Yang, Tang, & Zhang, 2021).

The addressed literature of Wang and Zhang (2020), Dvouletý et al. (2020) and Lee et al. (2017) are comprising SMEs as well as MNEs in emerging economies. However, the research context of this paper is looking into the SME context in Europe. Looking into the literature about the European SME context provides evidence that the previous relation found in emerging economies can also be applied to the European SME context. Rademaekers et al. (2012), Blundel et al. (2013) and Cecere, Corrocher and Mancusi (2020) looked into the European SME context of financial support to implement resource actions. Rademaekers et al. (2012) found that SMEs mostly react to public financial support to implement resource actions (Rademaekers, et al., 2012). This is supported by Blundel et al. (2013) who found that direct financial support from governments stimulates SMEs in implementing resource actions (Blundel, Monaghan, & Thomas, 2013). Moreover, Cecere et al. (2020) support the claims made by Rademaekers et al. (2012), Blundel et al. (2013). They also confirm that public financial support is the most effective in stimulating SMEs to adopt resource actions (Cecere, Corrocher, & Mancusi, 2020).

Following the previous reasoning, it can be concluded that public financial support enhances resource actions implemented by SMEs. This results in the following hypothesis:

*H1a: Public financial support positively impact SMEs' resource actions.*

#### *Private and market-based financial support*

SMEs mostly rely on private forms of financial support (Kaya, 2014) (European Commission, 2018) (Bakos, Siu, Orenge, & Kasiri, 2019). The reason behind this is that governments are spending taxpayer's money to financially support privately owned businesses and are therefore hesitant in giving direct subsidies to SMEs.

The private and market-based financial sector consists of a diverse set of institutions, Investment Banks, Commercial Banks, Internet Banks, Retail Banking, Insurance companies, and Mortgage companies. These different institutions can provide loans, equity, or other financial resources for companies (EDUCBA, 2021). To obtain financial support, SMEs mostly rely on regular bank loans (van der Wiel, Dubovik, & van Solinge, 2019) (Kaya, 2014). The

choice for regular bank loans is because of the strict financial regulations and risk prevention that other financial institutions apply to SMEs. However, banks are also conservative in granting SMEs a loan, due to the organizational structure of SMEs. Normally, SMEs do not publish business strategies or annual reports, which makes SMEs less transparent compared to large multinational firms. This informal nature of the SMEs makes it harder for banks to assess the SMEs' business and financial state. This results in limited access to financial support from banks (Kaya, 2014) (Abraham & Schmukler, 2017). There are more factors that enable or constrain SMEs in their search for financial support. Bakos et al. (2019) described barriers and drivers for SMEs pursuing resource actions. They found that it is harder to obtain loans and public support for SMEs (Bakos, Siu, Orengo, & Kasiri, 2019). This is in line with the results found by Zhu et al. (2012), who also found that access to finance is the main obstacle for SMEs (Zhu, Wittmann, & Peng, 2012). This barrier of obtaining financial support results in the shift of financial support towards family members or other relatives (Hussain, Millman, & Matlay, 2006) (Bakos, Siu, Orengo, & Kasiri, 2019). Furthermore, Forkuoh et al. (2015) address that the shift towards private external finance is due to the limitations with bank-based external finance (Forkuoh, Li, Affum-Osei, & Quaye, 2015). Therefore, based upon the arguments brought by Bakos et al. (2019), Zhu et al. (2012), Forkuoh et al. (2015), the following hypothesis is derived:

*H1b: Private financial support positively impacts SMEs' environmental practices.*

An influencing factor on the availability and adoption of financial support is brought to light by Bakos et al. (2019). They found that a lack of governmental legislation is a barrier for SMEs in implementing sustainable practices. Moreover, Rademaekers et al. (2012) found that legislation is an improving factor in increasing resource actions by SMEs (Rademaekers, et al., 2012). In addition, Cungu et al. (2008) found that the weak institutions in Hungary constrained the availability of investments for SMEs (Cungu, Cow, Swinnen, & Vranken, 2008). Therefore, it can be concluded that institutions can play a vital role in the implementation of resource actions by SMEs, this is being elaborated in the next paragraph.

### 2.3 Institutional environment

The institutional environment is part of the institutional theory that has been thoroughly researched. The institutional theory originates from 1991, when the American economist North defined the institutional theory (North, 1991). He described institutional theory from an

economic perspective as humanly devised constraints that influence the interaction of people, this could be, political, social, or economic. These constraints could be formal, as well as informal. Formal constraints are established to work out trust problems and provide protection, informal constraints include cultural traditions. Formal institutions are regulations and laws, whereas informal institutions consist of codes of behaviour and norms and values (North, 1991). Formal and informal institutions are built upon broad agreements about how people or organisations should behave, and these are transferred over time through culture (Van Kranenburg & Voinea, 2017). This means that institutions can change the behaviour of people as well as that people and culture change institutions.

There are more views on Institutional Theory. Scott (2001) took a more social point of view on the institutional theory, he saw institutions more as social structures which consist of regulative, normative, and cultural-cognitive elements that direct actions of behaviour (Scott, 2001). He divided the institutional theory into three pillars, the regulative, the normative and the cognitive pillar. The regulative pillar consists of laws, regulations, and rules, this is coercive. The normative pillar consists of norms and values. The last pillar, the cognitive pillar, consists of culture and religion, also defined as the cultural pillar (Van Kranenburg & Voinea, 2017). The main argument of Scott (2001) is that the regulative pillar is expressed into written laws and regulations to which a society should comply, while the normative and cultural-cognitive pillar is not formalised by law, but by norms and values expressed by individuals in a certain culture.

The definitions of the institutional theory by North (1991) and Scott (2001) slightly differ, however, both institutional views are broadly applied in management science (Kostova, Roth, & Dacin, 2008). Kostova et al. (2008) found that organizations need to adhere to the institutional environment they operate in, this gives organizations legitimacy to operate in this environment. This means, that for firms, it is important to understand the environment you are in to secure organizational survival. Bruton et al (2010) found three pathways in the current business literature regarding the institutional environment (Bruton, Ahlstrom, & Li, 2010). The first is based upon the “institutional setting”, which means that firms can be either constrained or empowered by the institutions located in their environment. The second comprises organizational legitimacy, which gives firms the right to operate in a certain institutional environment. The third pathway is institutional entrepreneurship, which states how organizations develop the institutional framework to alter and adapt their organizational structure towards better collaboration within the institutional framework. The aim of this

research is focussed on the first stream defined by Bruton et al. (2010), the institutional setting which either constrains or empower firms.

### *The influence of institutional quality on resource actions*

The effect of the institutional context as a constrain or empowerment is broadly investigated. For instance, Zhu et al. (2012) found that lack of institutional support counted as a main barrier in the SME context, this stresses the importance for SMEs to adhere to the institutional environment (Zhu, Wittmann, & Peng, 2012). They also stated that a lack of institutional knowledge and regulations hamper SMEs' performance and innovation. Lynch-wood et al. (2009) found that not every firm experiences the same external pressures from stakeholders which is related to the size of the firm (Lynch-Wood, Williamson, & Jenkins, 2009). They found that SMEs operate in a rather small and simple context, which results in the feeling of less pressures from the external environment. However, this can change if these customers and institutions act cooperatively (Lynch-Wood, Williamson, & Jenkins, 2009). This is also found by Kuskys & Lozano (2007), who states that SMEs are embedded into a local context with fewer demanding customers and institutions (Kusyk & Lozano, 2007). Moreover, they stated that SMEs have smaller resources which constrain them to invest in resource actions since SMEs are risk averse. This means that SMEs experience less pressure from the external environment, and when they do experience pressure, it is harder to comply due to the fewer resources they possess (Perrini, Russo, & Tencati, 2007). In addition, Raza et al. (2019) found that external pressures result in more resource actions implemented by SMEs, this emphasises the role those formal institutions need to take to influence SMEs' environmental behaviour (Raza, Liu, & Usman, 2019). Moreover, Bakos (2019) identified barriers and drivers for SMEs in adopting resource actions. They found that the main driver of resource actions for SMEs is governmental regulations. One of the main barriers identified was a lack of environmental legislation. These stress the importance of strong formal institutions in the implementation of resource actions (Bakos, Siu, Orengo, & Kasiri, 2019). To conclude, it can be stated that strong formal institutions have a positive effect on the implementation of resource actions by SMEs. This results in the following hypothesis:

*H2: Strong formal institutions positively impact SMEs' environmental practices.*



### *Institutional environment as a moderator between financial support and resource actions*

Given the barriers and drivers defined by Bakos (2019), governmental legislation results as the main driver for resource actions. The absence of environmental legislation was found to be the main barrier for SMEs pursuing resource actions, so, it can be expected that weak formal institutions negatively influence resource actions. Also, as addressed in the previous paragraph, public financial support enhances SMEs in pursuing environmental strategies. However, if the formal institutional environment is weak, because of a lack of legislation, it will negatively influence the availability of financial support towards SMEs (European Commission, 2018) (Bakos, Siu, Orengo, & Kasiri, 2019). Moreover, Luca (2016) found that self-interested weak governmental institutions constrain the effectiveness of governmental investments (Luca, 2016). He found that the complex nature of governmental institutions had a negative effect on the support firms received. This means that weak institutions negatively influence the availability and distribution of public financial support towards firms. The study by Luca (2016) was conducted in the institutional environment of Turkey, therefore, in this research it will be investigated if this relation holds in the institutional context of Europe.

The relation between weak institutions and private or market-based financial investments is also investigated. Rodrik (1991) found that policy uncertainty results in a withhold of private investments due to the risk that could occur for the investors (Rodrik, 1991). Furthermore, Feng (2001) looked into three political determinants that may influence property rights and private investment. The three political determinants were political freedom, political instability, and policy uncertainty (Feng, 2001). The results found, showed that political instability, as well as policy uncertainty has a negative effect on private investments. These two concepts result in fear and refrain from private parties to invest in firms. This means that the weak institutional environment has a negative effect on the carried out private investments. Moreover, Svensson (1998) investigated why domestic private investment rates differ greatly between countries. He found that countries with an unstable legal system and unreliable governmental structure result in lower domestic investments (Svensson, 1998). In addition, Shanmugam (2020) dived into the topic of financial development. He applied several governance indicators on the concepts of Foreign Direct Investment and Domestic Private Investment (Shanmugam, 2020). Looking at domestic private investment, he has found that political instability has a negative significant effect on the level of domestic investment, while rule and law have a positive effect. Iheonu (2019) looked into the effect of governance on domestic private investment in the geographical context of Africa (Iheonu, 2019). The effects found by Iheonu (2019) support the work by the

previously addressed scholars, low quality of governance and an unstable political environment have strong negative effects on the decision for domestic investments.

Looking more closely into the European research context, it can be said that within Europe, some countries have weak institutions. For instance, Marinescu (2013) conducted a comparison study of the differences in institutional quality across Europe (Marinescu, 2013). He made two groups of countries, one from Central and Eastern Europe, and one from Western European countries. He found that there are significant institutional differences between the regions in Europe. The most significant difference was found in the institutional quality indicator of institutional constraint regarding investments and trade (Marinescu, 2013). This highlights the fact that also within the European institutional context, differences occur between states that affect the financial institutional landscape, which in turn can affect the investments from SMEs in resource actions. This is supported by Mc Namara and O Donohoe (2013), who conducted research about the role of institutional environments on SME credit availability in European countries (Mc Namara & O Donohoe, 2013). They found that judicial, bankruptcy, and social environments of the European countries are highly influencing the availability of credit for SMEs. Again, this stresses the influence of the institutional environment on financial support towards SMEs. Moreover, Sun, Edziah, Sun, and Kporsu (2019) looked into institutional quality, green innovation and energy efficiency in 71 countries, developed countries as well as developing countries (Sun, Edziah, Sun, & Kporsu, 2019). The results showed that reliable governmental institutions and funding lead to an increase in investments by firms in energy efficiency. Furthermore, they found that weak governmental institutions hinder this relationship.

Zooming in on the relationship of institutional quality and financial support, Arbolino and Boffardi (2017) found that the quality of the institutions in Europe have a significant effect on the availability and the effectiveness of public financial support (Arbolino & Boffardi, 2017). They found that the quality of the institution is necessary to obtain the highest return of public financial support. Moreover, the OECD conducted research investigating the current state of knowledge about SMEs and their contribution to social and economic well-being (OECD, 2017). They identified challenges and opportunities for SMEs in the European business context. The OECD also investigated the institutional environment of SMEs and found evidence that an inefficient institutional environment makes it difficult for SMEs to obtain and effectively deploy public financial support (OECD, 2017). Spoz (2014) found that SMEs face barriers in

obtaining public financial support, the two major barriers identified were excessive bureaucracy and strict procedures (Spoz, 2014). This is in line with the findings by Arbolino and Boffardi (2017) and the barriers found by the OECD (2017).

Focussing on the influence of institutional quality on the availability of private support to enhance and stimulate resource actions, Lindenberg (2014) found that there needs to be a favourable institutional environment (Lindenberg, 2014). This means, that the institutional environment should be structured to provide the right conditions for private investors to improve their green investments. This in line with the findings by Polzin, Flotow and Klerkx (2016) who found that governmental institutions should strengthen and provide financial support for firms adopting resource actions (Polzin, Flotow, & Klerkx, 2016). Moreover, institutions should reduce the barriers firms face when acquiring private capital for implementing resource actions. Polzin (2017) found that institutions can influence the private financial investment environment, which in turn leads to more private investments towards firms implementing resource actions (Polzin, 2017).

Following the previous reasoning about the influence of institutional quality on public and private financial support, it can be stated that a weak institutional environment has a negative effect on investments. Therefore, a weak institutional environment makes it harder for SMEs in general to obtain financial support. Given the fact that financial support positively improves the ability for SMEs to implement resource actions, a weak institutional environment negatively moderates this relationship. It is also found that clear legislation and a stable institutional environment have a positive effect on domestic financial support. This results in the following hypothesis:

*H3a: Strong formal institutions positively moderate the effect of public financial support on SMEs' resource actions.*

*H3b: Strong formal institutions positively moderate the effect of private financial support on SMEs' resource actions.*

## 2.4 Conceptual model

The theoretical framework considering resource actions, financial support and the institutional environment resulted in the aforementioned hypotheses. The outcome of this is represented in the following conceptual model as shown in Figure 1:

H1a	<i>Public financial support positively impacts SMEs' resource actions.</i>
H1b	<i>Private financial support positively impacts SMEs' resource actions.</i>
H2	<i>Strong formal institutions positively impact SMEs' resource actions.</i>
H3a	<i>Strong formal institutions positively moderate the effect of public financial support on SMEs' resource actions</i>
H3b	<i>Strong formal institutions positively moderate the effect of private financial support on SMEs' resource actions</i>

Table 1 Hypotheses table overview

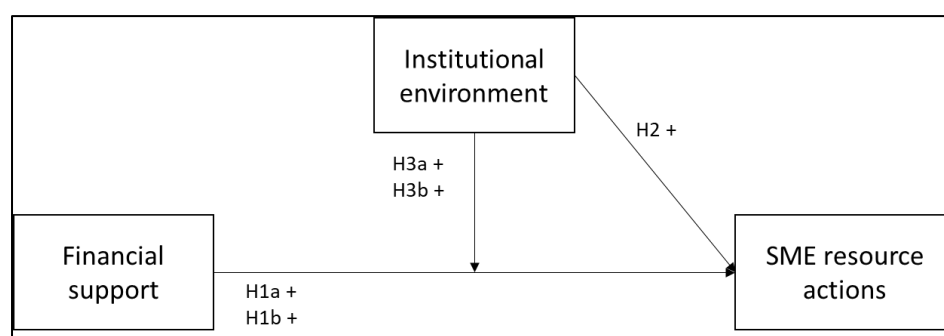


Figure 1 Conceptual model

## Chapter 3: Methodology

The following chapter will elaborate more on the data used in this study. The chapter starts by explaining the sample and dataset. After, the variables, dependent, independent, moderation, and control variables will then be presented. Following the variables, the analytical techniques that are being used in the analysis will be presented. The chapter will conclude with a declaration on research integrity.

### 3.1 Dataset and sample

The Flash Eurobarometer 456 of the European Commission is being used in this study to answer the formulated hypotheses in Chapter 2. The Flash Eurobarometer 456 study is called ‘*SMEs, resource efficiency and green markets*’ and investigates the current resource efficiency actions by European SMEs. This is the most recent Flash Eurobarometer from 2018, older surveys conducted into the field of SME resource efficiency are not being taken into account since they make use of different variables, questionnaires, and datasets. The Flash Eurobarometer 456 looks at the current and planned resource actions taken by SMEs and their reasons behind them. The Flash Eurobarometer 456 also dives into barriers SMEs face when implementing resource efficiency actions. Also, the role of supporting policy is addressed when SMEs implement resource efficiency actions. The study was published in January 2018 and executed by Kantar TNS Political & Social network (European Commission, 2018). The researchers conducted telephone interviews via landline and mobile phones, with 15,019 different enterprises. Kantar TNS Political & Social conducted the survey for the European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs.

A SME can be defined based upon two requirements, headcount and turnover or balance sheet total. This definition has also been used in the Flash Eurobarometer 456 (European Commission, 2020). The staff headcount should not cross the upper limit of 250 employees. The turnover cannot exceed the boundary of 50 million euros, or the balance sheet should be equal of less than 43 million euros. However, there is a differentiation made in the definition of SMEs, as the abbreviation already states, Small and Medium Enterprises. This differentiation is made in three groups; micro, small and medium and has corresponding values for headcount and turnover or balance sheet total. The overview of the SME definition can be seen in Table 2: SME definition (European Commission, 2020).

<b>SME category</b>	<b>Staff headcount</b>	<b>Turnover</b>	<b>Balance sheet total</b>
Medium	< 250	≤ 50 million	≤ 43 million
Small	< 50	≤ 10 million	≤ 10 million
Micro	< 10	≤ 2 million	≤ 2 million

*Table 2 SME definition (European Commission, 2020)*

As stated in the paragraph before, the dataset of the Flash Eurobarometer 456 consists of 15,019 different enterprises and is of quantitative nature. The countries where these enterprises are in, are the total of 28 member states of the European Union. Also, SMEs from Albania, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, Turkey, Iceland, Moldova, Norway, and the United States were considered (European Commission, 2018). After the data cleaning process, the number of enterprises will be different as well as the countries. This will come forward in Chapter 4.

The main concepts, as stated in Chapter 2, are investigated based on data available by the Flash Eurobarometer 456. The next paragraph goes through how these concepts were defined.

### 3.2 Variables

This section will address the variables that are used in this study and how they will be measured.

#### *3.2.1 Dependent variable*

The dependent variable is based upon the main concept of SMEs resource actions. This is derived from the theory about CSR based upon the Triple Bottom Line by Elkington (1997). A more specific aspect of CSR is addressed by Guillamon-Saorin, Kapelko, & Stefanou (2018), who stated that firms distribute resources in an efficient way to add value for both the company and society, which related to the profit and planet aspect of the Triple Bottom Line (Guillamon-Saorin, Kapelko, & Stefanou, 2018) (Elkington, 1997). This distribution of resources is also found in the Flash Eurobarometer 456, by the resource efficiency actions executed by SMEs. These actions were: (1) minimising waste, (2) saving energy, (3) saving materials, (4) saving water, (5) recycling, (6) design modifications, (7) selling scrap material, and (8) using renewable energy.

All eight resource efficiency actions will be analysed by making 1 variable out of these eight actions. This means that for the dependent variable, all eight resource efficiency actions will be used in the analysis by calculating a sum score. This will be created to get a scale level variable which can be used in a linear regression analysis. Not all SMEs in the dataset did implement environmental actions, the analysis by the Flash Eurobarometer 456 showed that around 15% did not implement any environmental actions. This indicates that the dataset is skewed; so, this should be considered when drawing conclusions from the data.

### 3.2.2 Independent variable

The independent variable is defined based upon the concept of financial support. As stated in Chapter 2, this is divided into public and private financial support. Public financial support is defined as public financial support, and private financial support is defined as financial support by family or friends. The Flash Eurobarometer 456 also makes this distinction between public financial support and support from family and friends (European Commission, 2018). The Flash Eurobarometer 456 defines this as *Public funding such as grants guarantees and loans*, and *Private funding from friends and relatives*.

### 3.2.3 Moderating variable

The concept of the moderating variable is based upon the institutional environment. As Sun, Edziah, Sun and Kporsu (2019) found that a strong institutional environment leads to an increase in investments into efficiency practises (Sun, Edziah, Sun, & Kporsu, 2019). The Flash Eurobarometer 456 investigated the main barriers SMEs bump into when implementing resource efficiency actions. They found eight main barriers for SMEs: (1) complexity of administrative or legal procedures, (2) cost of environmental actions, (3) difficulty to adapt environmental legislation, (4) lack of specific environmental expertise, (5) technical requirements of the legislation not being up to date, (6) difficulty in choosing right efficiency actions, (7) lack of demand for resource efficient product, (8) lack of supply of required materials. The results of the Flash Eurobarometer 456 showed that the main barrier is a weak institutional environment, namely, *complexity of administrative or legal procedures*. This is used as a proxy for the institutional environment as q7.1 ‘‘Complex procedures’’. Considering the theoretical background regarding the barriers for implementing resource actions as described in Chapter 2, this is taken as a proxy for the institutional environment used as moderating variable.

### 3.2.4 Control variables

A control variable is a variable that is being held constant during the analysis (Hair, Black, Babin, & Anderson, 2019). This variable is not the main interest of the study; however, it could influence the main investigated relationship. Mc Namara & O Donohoe (2013) argued that firm size could be of influence on the main relationship between financial support and resource actions. They claimed that smaller businesses had greater difficulty acquiring financial help than larger businesses which is also supported by the theoretical framework (Mc Namara & O Donohoe, 2013). Stoian and Gilman (2017) used firm age, since they discovered that older firms had more established firm capabilities to acquire capital and invest firm resources more efficiently than newly established firms (Stoian & Gilman, 2017). Moreover, they used the sector of the company as a control variable, since they found that this could influence the relationship as well. This is also found by Perrini, Russo, and Tencati (2007) and Russo and Tencati (2008), they discovered that resource actions differ among firms in different sectors (Perrini, Russo, & Tencati, 2007) (Russo & Tencati, 2008). In addition, it is argued that SMEs face difficulties in attracting financial resources due to the resources SMEs naturally possess and the credit risk that is linked to this (Bakos, Siu, Orengo, & Kasiri, 2019) (Cecere, Corrocher, & Mancusi, 2020). Thus, it is argued that the current financial state of a SMEs can influence the attraction of financial support. Therefore, looking at the database, turnover is taken into account as the last control variable. To conclude, Marinescu (2013) conducted a comparison study within the geographic context of Europe (Marinescu, 2013). He found significant differences between the institutional regions that influence the business environment. Therefore, the institutional regions of Europe are considered as a control variable.

This results in the following control variables:

- Firm size
- Firm age
- Industry
- Turnover
- European country clusters

### 3.3 Analytical technique

To test the formulated hypotheses, an appropriate analytical technique should be picked. Based on the available dataset, a multiple regression analysis will be conducted. Multiple regression analysis is a statistical method used to examine the relationship between a single dependent



variable and several independent variables in a general linear model (Hair, Black, Babin, & Anderson, 2019, p. 260). So, there is a criterion variable (dependent variable) and several predictors (independent variables) that are used to predict the dependent variable. The regression analysis weights the different independent variables to find the maximal prediction of the dependent variable. This results in different weightings, which display the individual contribution to the prediction of the dependent variable by every independent variable. The complete set of weightings are called the regression variate, which is a linear combination of all independent variables that best predict the dependent variable. The general form of the multiple regression equation for a total population is as followed (Hair, Black, Babin, & Anderson, 2019, p. 260):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon$$

The dependent variable Y in this equation is predicted by the intercept  $\beta_0$  and the independent variables are represented by the different X's. The  $\varepsilon$  stands for the error term.

There are some assumptions that need to be addressed when conducting a multiple regression analysis, these assumptions are evaluated in Chapter 4 and modifications are made when needed:

- Variables are metrical measured,
- Linear relationship between dependent and the independent variables,
- Residuals are normally distributed,
- No multicollinearity,
- Homoscedasticity.

As addressed in the previous section, the dependent variable in this study is calculated by taking the sum of q1.1 to q1.8 into a new variable named SME Resource actions (SME\_RA). For the independent and moderating variables, the dataset measured it on a dichotomous scale, yes or no, on the questions regarding public or private financial support. For the analysis, independent variables q6.1 ‘*Public financial support*’ and q6.3 ‘*Private financial support*’ are used. Variable q7.1 is used as moderating variable ‘*Complex procedures*’.

The control variables are measured on different scales. Firm size is measured on an ordinal scale representing the different levels of SME size, ranging from micro ‘*1 to 9 employees*’, to small ‘*10 to 49 employees*’ up until large SME ‘*50 to 249 employees*’ and one category up

*'more than 250 employees'*. The latter category is excluded since this represents firms that lie outside the definition of SMEs. This control variable is recoded into dummy variables Micro, Small, and Medium. Firm age is measured on an ordinal level, asking in what year the company was established categorized in 4 different categories. This is also recoded into a dummy variable, for firms founded before 2010 and firms founded after 2010. This is based on a data driven explanation. The 4 categories are not evenly distributed, since the first category *'firms established before 2010'* accounts for 84.5% of the cases. The second category enhances firms between 2010 and 2013, the third is between 2013 and 2017, and the fourth 2017 and up. So, these unevenly distributed answer categories together with the skewness of firms founded before 2010, resulted in the two dummies as described above.

The sector variables are on an ordinal scale, ranging in four categories, which are also recoded into four dummies, namely, Manufacturing, Retail, Services, and Industry. These four categories are based upon the definition from the Statistical Classification of Economic Activities in the European Community, mostly referred to as the NACE codes (Commission of the European Communities, 2008). This is a widely used industry standard classification scheme. The sector Manufacturing comprises NACE code C: Manufacturing. The sector Retail covers NACE code G: Wholesale and Retail Trade. The sector Services comprises NACE codes H: Transportation and Storage, I: Accommodation and Food Service Activities, J: Information and Communication, K: Financial and Insurance Activities, L: Real Estate Activities and M: Professional, Scientific and Technical Activities. The sector Industry contains NACE codes B: Mining and Quarrying, D: Electricity, Gas, Steam and Air Conditioning Supply, E: Water Supply; Sewerage, Waste Management and Remediation Activities and F: Construction.

Turnover is measured on an ordinal scale, from *'100 000 euros or less'* up until *'More than 50 million euros'*. This resulted in a variable with 5 levels. If companies exert the upper boundaries of the definition regarding SMEs, they will be excluded from the sample since this is out of the scope of this thesis.

The European regions are used as control variables and included as dummies. This is based on the geographical regions by the UNSD (UNSD, 2020). The institutional regions are West Europe, Central Europe, North Europe, East Europe, South Europe, and Southeast Europe.

All these variables are made applicable for using multiple regression analysis. However, for conducting multiple regression analysis, some assumptions should be met which will be addressed in the following Chapter 4: Results (Hair, Black, Babin, & Anderson, 2019).

### 3.4 Research ethics

This research is carried out adhering to the main principles that are defined by the Netherlands Code of Conduct for Research Integrity (2018). This institute defined five principles that researchers should follow when conducting research, these five principles are: (1) honesty, (2) scrupulousness, (3) Transparency, (4) independence, and (5) responsibility (KNAW; NFU; NWO; TO2-federatie; Vereniging Hogescholen; VSNU, 2018). This research followed these five principles with great care.

The data that has been used in this report is derived from the database belonging to the Flash Eurobarometer, Kantar TNS Political & Social. The Kantar TNS Political & Social conducted this research on behalf of the European Commission. The researchers of Kantar TNS Political & Social assures their research integrity, and their analytical process and findings are closely monitored by the European Commission. The validity of their research is guaranteed since they conduct around 1000 interviews per country via the telephone, nevertheless, it should be noted that the sample sizes for the smaller European countries were less, which necessitates caution when interpreting the results (European Commission, n.d.). In Chapter 4, after the missing data analysis and descriptive statistics, these considerations will be further elaborated.

As previously addressed, the data has already been gathered by Kantar TNS Political & Social which means that the researcher had no influence on the data gathering process. The dataset is made freely available by the European Commission. The researcher can assure that the data analysis and the results and conclusions that follow have not been harmed nor manipulated. It can be guaranteed that the data has not been distorted according to the ethics of the researcher. The dataset that has been used in the analytical process will be stored online and made freely available for interested parties via [www.researchgate.net](http://www.researchgate.net).

## Chapter 4: Results

The analysis' findings will be presented in this chapter. First, some descriptive statistics are presented, and then the chapter moves on to evaluating the regression analysis' assumptions. The chapter concludes with a test of the hypotheses that have been proposed.

### 4.1 Descriptive statistics

The total questionnaire of the Flash Eurobarometer is conducted among 15,019 companies. The analysis started with excluding the companies that were out of the boundaries regarding the definition of an SME, and countries that were out not of European origin. So, cases that exerted the boundary of 250 employees or more than 50 million in turnover or were not of European origin have been deleted. This resulted in a total dataset of 14,401 valid cases to conduct the analysis with. From the dataset, a subsample is taken. This is done to only include cases that have a score on the independent variables. This is executed since the analysis should only incorporate the cases that have gotten external support, to compare the effect from private or public entities on SME Resource Actions. By this alteration, the subsampled dataset is reduced to  $N = 2744$  cases. The following analysis has been conducted through this subsample dataset.

The dataset comprises 36 different European countries. The countries are not evenly divided throughout the sample, all the descriptive analysis dataset can also be found in Appendix 2: Descriptive analysis. The companies in these countries were divided into four different sectors, this was quite evenly distributed from 18% in the sector Industry, 26.2% in Manufacturing, 27.2% in Services towards 28.7% in sector Retail. Moreover, the size of the companies in the dataset is divided into the grouping related to the SME definition, here, the category of Small has a share of 40.5% whereas Micro and Medium have a share of 29.2% and 30.3%.

To continue the analysis, the SME Resource Actions need to be summed up into one variable as stated in Chapter 3: Methodology. It is determined whether this is achievable by calculating the Cronbach's alpha for all eight elements. The Cronbach's alpha output is relatively low; nevertheless, this is not a concern since the eight items are all responses to potentially implemented resource actions and clearly indicate the construct. By taking the sum score of the eight items, a more reliable test can be conducted via multiple regression analysis. The Inter-Item Correlation Matrix shows exclusively positive and significant scores, and the Item-Total

Statistics show that no item will significantly increase the Cronbach's alpha when deleted. These different tables are shown in Appendix 2: Descriptive analysis.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,578	,583	8

Table 3 Reliability Statistics, Cronbach's Alpha

After the alteration of the variable SMEs Resource Actions (SME\_RA), a missing value analysis has been conducted. The missing value analysis takes into consideration all of the original variables that were applied in this study. The used variables were:

- TNS COUNTRY ID (tnsentry)
- Employee size (scr10t)
- Industry sector (nace\_b)
- Turnover (scr14)
- SME\_ResourceActions
- Public financial support (q6.1)
- Private financial support (q6.3)
- Complex procedures (q7.1)

The output of the missing value analysis showed that the missing values were not missing completely at random, Little's MCAR test results were  $\chi^2 = (20, N = 2352) = 60.909, p < 0.001$ . As a result of this significant finding, the missing value analysis was carried out more precisely to determine which variables were missing. The variable Turnover (scr14) was missing in 14,1% of the cases, which exceeds the boundaries of 10% missing's that are neglectable. Crosstabulations were made to see if scr14 is missing at a specific group of variables. The analysis of the crosstabulation resulted that younger companies, founded after 1 January 2017, had more missing values on average since only 15.8% of these cases had a score on turnover. This has some consequences for the multiple regression analysis interpretation; what these consequences are will be discussed when evaluating the multiple regression analysis results. The regression analysis has been executed with listwise deletion; this is done since the missing values were for the nominal variable Turnover. For this variable, the missing values could not be replaced by an imputation score since the variable was neither metric nor ordinal. The tables

and outcomes of the missing value analysis can be found in Appendix 3: Missing value analysis. By using listwise deletion, the multiple regression analysis has been executed with 2719 valid cases.

#### 4.2 Assumptions

In order to execute a multiple regression analysis, it is necessary to examine certain elements of the data that will be used. Hair, et al. (2019) defined four key aspects that need to be addressed beforehand: 1) normal distribution of variables, 2) potential outliers, 3) adequate sample size and 4) presence of multicollinearity (Hair, Black, Babin, & Anderson, 2019). After these assumptions, the four regression assumptions will be checked.

##### *Normal distributions of variables*

Within SPSS, it can be checked if the variables that are being used are normally distributed. Hair, et al. (2019) state that normality of the variables can be checked via the skewness and the kurtosis values of the variable. However, in the current analysis, only the dependent variable is of continuous nature, all other variables are dummified or binary variables. Therefore, only the variable SME\_RA will be checked for normality. Looking at the skewness- and kurtosis values and their corresponding standard error values, it can be concluded that SME\_RA is not normally distributed. The values of normality lie beyond the boundaries of two times the standard deviation, moreover, the Kolmogorov-Smirnov linearity test is found significant which means that the data is not normally divided. The Kolmogorov-Smirnov test indicates that SME\_RA is not normally distributed,  $D(2744) = 0.947, p < 0.001$ .

Descriptives			
		Statistic	Std. Error
SME_RA	Mean	4,3448	,03568
	95% Confidence Interval for Mean	Lower Bound	4,2748
		Upper Bound	4,4147
	5% Trimmed Mean	4,3580	
	Median	5,0000	
	Variance	3,493	
	Std. Deviation	1,86901	
	Minimum	1,00	
	Maximum	8,00	
	Range	7,00	
	Interquartile Range	3,00	
	Skewness	-,195	,047
	Kurtosis	-,857	,093

Table 4 Descriptives SME\_RA

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SME_RA	,146	2744	,000	,947	2744	,000
a. Lilliefors Significance Correction						

Table 5 Test of Normality, Kolmogorov-Smirnov test

This conclusion is also confirmed by the histogram, it shows that it is slightly skewed towards the right. The output and graphic results can be found in Appendix 4: Normality test. The variable SME\_RA is transformed into different variables to check if the test of normality changed towards a normal distribution. SME\_RA is transformed by taking the inverse, square, square root, and the log transmission. The results showed that the test of normality remained significant, therefore, still no normality is found in the variable. Moreover, taking the skewness and kurtosis and their standard errors into account of the transformed variables, the test of normality remained exceeding the boundaries of two times the standard deviation. Therefore, the original variable SME\_RA will remain in the analysis since this increases the power and interpretability of the outcomes compared to the transformed variables.

### Potential outliers

To see if there are any outliers in the data, a boxplot is made. This is only done for the dependent variable SME Resource Actions since all other variables are dummified. Because the boxplot for SME RA shows no outliers, the conclusion is that there are no significant outliers in the

dataset that might impact the results of the multiple regression analysis. The boxplot is shown in Appendix 5: Boxplot SME\_RA.

#### *Adequate sample size*

To conduct a multiple regression analysis, there is the assumption that every independent variable should have at least 10 observations, 15 or 20 is most desired (Hair, Black, Babin, & Anderson, 2019). These numbers of observations boost the strength and generalizability of the findings. In this analysis, there are five independent variables, therefore, a sample of  $5 * 20 = 100$  should be sufficient. The total dataset comprises 2719 valid cases, so it can be concluded that the size of the sample is adequate for conducting a multiple regression analysis.

#### *Presence of multicollinearity*

When a multiple regression analysis will be executed with more than 2 independent variables, multicollinearity must be absent in the direct and indirect variables. SPSS can compute several collinearity statistics, VIF-values, and tolerance statistics. The VIF-value shows if there is a strong linear relationship with the other variables and should be  $< 10$  (Hair, Black, Babin, & Anderson, 2019). The tolerance statistics should not exceed  $> 1$  and be  $> .10$ . The output of SPSS showed that multicollinearity is absent. The VIF-value of q6.1 and q6.3 were 1.054 and 1.029 with the corresponding tolerance statistics of .948 and .972. The output can be checked in Appendix 6: Multiple regression analysis. The conclusion is drawn that there is no presence of multicollinearity.



Descriptive Statistics			
	Mean	Std. Deviation	N
SME_ResourceActions	4,3461	1,86771	2719
q6.1 Public financial incentives	,30	,457	2719
q6.3 Private financial incentives	,07	,249	2719
q7.1 Complex procedures	,39	,487	2719
PublicIncXComplexProc	,1460	,35318	2719
PrivateIncXComplexProc	,0302	,17105	2719
Founded_Pre_2010	,8510	,35611	2719
Sector_Retail	,2869	,45238	2719
Sector_Service	,2722	,44515	2719
Sector_Industry	,1798	,38413	2719
Sector_Manu	,2611	,43933	2719
SizeMedium	,3038	,45998	2719
SizeMicro	,2920	,45477	2719
SizeSmall	,4042	,49083	2719
Western_Eu	,2600	,43873	2719
Central_Eu	,1578	,36460	2719
Northern_Eu	,1622	,36869	2719
Eastern_Eu	,0725	,25928	2719
Southern_Eu	,1409	,34794	2719
South_East_Eu	,2067	,40501	2719
Turnover_Medium	,1508	,35791	2719
Turnover_Mic	,4748	,49946	2719
Turnover_Small	,2369	,42523	2719

Table 6 Descriptive statistics all included variables.

SME_ResourceActions		
SME_ResourceActions	Pearson Correlation	1
	Sig. (2-tailed)	
q6.1 Public financial incentives	Pearson Correlation	,070**
	Sig. (2-tailed)	,000
q6.3 Private financial incentives	Pearson Correlation	,012
	Sig. (2-tailed)	,517
q7.1 Complex procedures	Pearson Correlation	,139**
	Sig. (2-tailed)	,000
PublicIncXComplexProc	Pearson Correlation	,106**
	Sig. (2-tailed)	,000
PrivateIncXComplexProc	Pearson Correlation	,036
	Sig. (2-tailed)	,058
Founded_Pre_2010	Pearson Correlation	,052**
	Sig. (2-tailed)	,007
Sector_Retail	Pearson Correlation	-,025
	Sig. (2-tailed)	,196
Sector_Service	Pearson Correlation	-,077**
	Sig. (2-tailed)	,000
Sector_Industry	Pearson Correlation	-,003
	Sig. (2-tailed)	,868
Sector_Manu	Pearson Correlation	,107**
	Sig. (2-tailed)	,000
SizeMedium	Pearson Correlation	,114**
	Sig. (2-tailed)	,000
SizeMicro	Pearson Correlation	-,118**
	Sig. (2-tailed)	,000
SizeSmall	Pearson Correlation	,003
	Sig. (2-tailed)	,873
Western_Eu	Pearson Correlation	,128**
	Sig. (2-tailed)	,000
Central_Eu	Pearson Correlation	,043
	Sig. (2-tailed)	,025
Northern_Eu	Pearson Correlation	,013
	Sig. (2-tailed)	,497
Eastern_Eu	Pearson Correlation	-,063**
	Sig. (2-tailed)	,001
Southern_Eu	Pearson Correlation	,055**
	Sig. (2-tailed)	,004
South_East_Eu	Pearson Correlation	-,196**
	Sig. (2-tailed)	,000
Turnover_Medium	Pearson Correlation	,123**
	Sig. (2-tailed)	,000
Turnover_Mic	Pearson Correlation	-,144**
	Sig. (2-tailed)	,000
Turnover_Small	Pearson Correlation	,039*
	Sig. (2-tailed)	,042
**. Correlation is significant at the 0.01 level (2-tailed).		
*. Correlation is significant at the 0.05 level (2-tailed).		
c. Listwise N=2719		

Table 7 Pearson's correlation

After that, the correlations will be examined to see if any relationships can be found. Pearson Correlation is used to see the relations between the variables and the dependent variable SME\_RA. The results show that q6.1 “Public financial support”, have a positive weak correlation  $r(2718) = 0.070; p < 0.001$ , whereas q6.3 “Private financial support”, do not show any significant correlation  $r(2718) = 0.012; p = 0.517$ . The moderating variable q7.1 “Complex procedures”, showed a positive significant result on SME\_RA ( $r(2718) = 0.139; p < 0.001$ ).

These previous four assumptions are evaluated before the analysis, the multiple regression analysis also comprises four assumptions these are discussed from now onwards. The following assumptions need to be checked before the regression output can be interpreted: 1) homoscedasticity, 2) linearity, 3) independence of error term, and 4) normality of the error term distribution (Hair, Black, Babin, & Anderson, 2019).

### *Homoscedasticity*

The assumption of homoscedasticity is checked via the scatterplot. In this plot, the predicted value and residual values are displayed. The scatterplot should not contain a funnel or pattern, in this analysis this is not the case. All dots are evenly dispersed, and no pattern is found. The conclusion is made that there is no sign of homoscedasticity, and therefore, the data is heteroscedastic.

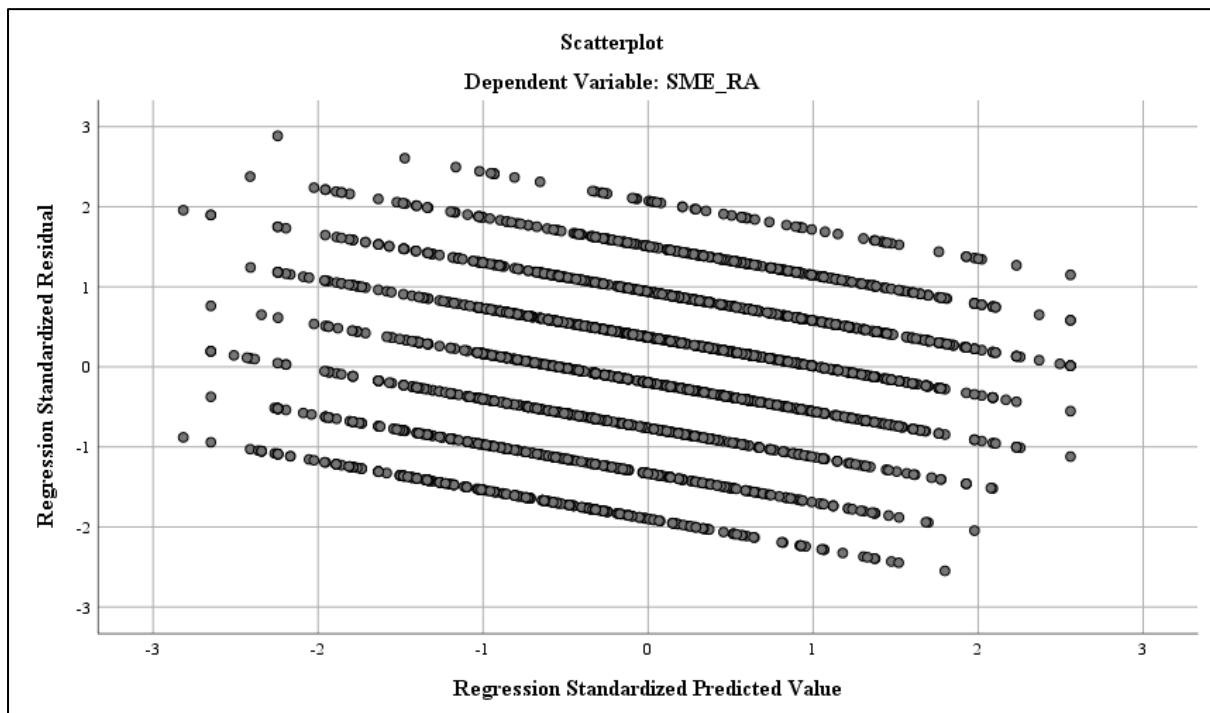


Figure 2 Scatterplot

### *Linearity*

The previously used scatterplot is also used to check the data for linearity. If there is a systematic pattern between the predicted values and the residuals, the data is not linear. The data is linear because there is no pattern found and the data is evenly distributed around the zero value on the y-axis.

### *Independence of error term*

The statistics of the error terms are being used to check whether the errors in the analysis are not related. This is checked in Table 8: Residuals Statistics, the values for the standardised predicted value should show a mean of 0 and a standard deviation of 1. The output shows these values; therefore, the error terms are independent in this regression analysis.

Residuals Statistics <sup>a</sup>					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,5533	5,9752	4,3461	,63652	2719
Residual	-4,49101	5,08273	,00000	1,75590	2719
Std. Predicted Value	-2,817	2,559	,000	1,000	2719
Std. Residual	-2,549	2,885	,000	,997	2719
a. Dependent Variable: SME_ResourceActions					

Table 8 Residuals Statistics

### *Normal distribution*

The last assumption before the interpretation of the multiple regression analysis is the normal distribution. This can be checked in two ways, P-P plot, and looking at the skewness and kurtosis. The P-P plot shows the probability that the used dataset is normally distributed, which is checked by looking at the dots following the straight black line. When the dots follow the line, normality is checked in the data. Looking at the P-P plot, it goes in the beginning a bit below the line, where in the end it goes on top of the line. However, the deviations are not that significant. The second option is to calculate if the kurtosis divided by the standard error of the kurtosis lies within +3 or -3, this is done in paragraph 4.2: Assumptions.

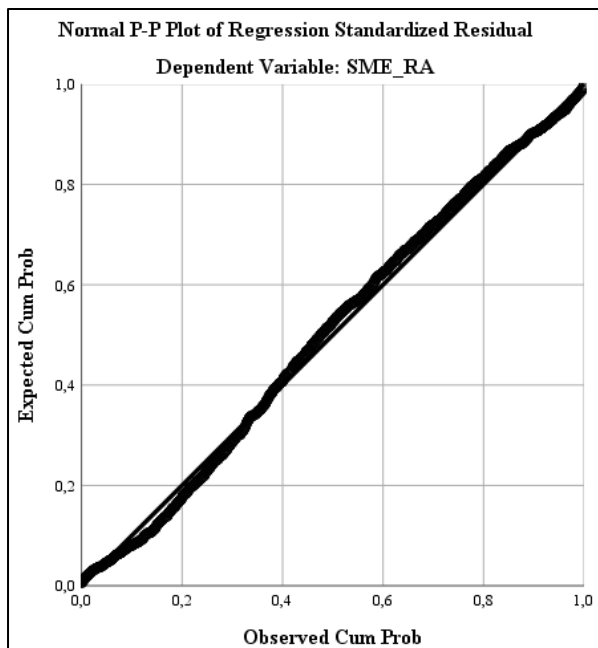


Figure 3 Normal P-P Plot

Since all assumptions are checked and proven sufficient, the multiple regression analysis can be interpreted.

#### 4.3: Regression analysis

To see how the correlations are related to the dependent variable SME\_RA, a multiple regression analysis is executed. This is done via several blocks, to see how the models change when additional variables are added. In the first model, all control variables are added. After, in model two, the direct effect is added. So, q6.1 and q6.3 are added. The third model comprises the previously added variables as well as the moderating variable q7.1. For the fourth and last model, the interaction terms are added of q7.1 on q6.1 and q6.3.

The ANOVA table shows that all four models are significantly better in predicting regression outcome ( $F(11, 2707) = 12.955; p < 0.001$ ). The model summary indicates how much of the whole model is explained by the various building blocks, as well as if the differences between the models are significant.

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	858,982	13	66,076	20,729	,000 <sup>b</sup>
	Residual	8622,353	2705	3,188		
	Total	9481,336	2718			
2	Regression	914,823	15	60,988	19,244	,000 <sup>c</sup>
	Residual	8566,512	2703	3,169		
	Total	9481,336	2718			
3	Regression	1101,164	16	68,823	22,190	,000 <sup>d</sup>
	Residual	8380,172	2702	3,101		
	Total	9481,336	2718			
4	Regression	1101,214	18	61,179	19,711	,000 <sup>e</sup>
	Residual	8380,122	2700	3,104		
	Total	9481,336	2718			

Table 9 ANOVA table

Table 10 shows that the first three models are significant while the fourth is not ( $F(2, 2702) = 0.041$ ,  $p = 0.960$ ). This result means that the first three models can be used for interpretation and for further interpretation the fourth is left out of the analysis. Moreover, in the first model, with only the control variables, the predictive capacity is 9.1% ( $R^2 = 0.091$ ). When adding the direct effects, the predictive capacity slightly increases towards 9.6% ( $R^2 = 0.096$ ). In the third model, the moderators are added, this results in an increase of 2% towards an overall predictive capacity of 11.6% ( $R^2 = 0.116$ ).

Model Summary <sup>e</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,301 <sup>a</sup>	,091	,086	1,78537	,091	20,729	13	2705	,000
2	,311 <sup>b</sup>	,096	,091	1,78024	,006	8,810	2	2703	,000
3	,341 <sup>c</sup>	,116	,111	1,76110	,020	60,081	1	2702	,000
4	,341 <sup>d</sup>	,116	,110	1,76175	,000	,008	2	2700	,992

Table 10 Model Summary multiple regression analysis

The regression coefficients are interpreted from the third model since this model has the highest predictive capacity  $F(16, 2702) = 22.190$ ,  $p < 0.001$ ,  $R^2 = 0.116$ .

<i>Variable</i>	<i>Model I</i>	<i>Model II</i>	<i>Model III</i>	<i>Model IV</i>
	Regression coefficient (std error)	Regression coefficient (std error)	Regression coefficient (std error)	Regression coefficient (std error)
(Constant)	5,412 (0,000)	5,295 (0,000)	5,115 (0,000)	5,116 (0,000)
Founded_before_2010	0,083 (0,396)	0,099 (0,314)	0,106 (0,276)	0,106 (0,0275)
Sector_Retail	-0,320 (0,001)	-0,301 (0,002)	-0,291 (0,002)	-0,291 (0,002)
Sector_Service	-0,576 (0,000)	-0,559 (0,000)	-0,548 (0,000)	-0,548 (0,000)
Sector_Industry	-0,257 (0,015)	-0,253 (0,017)	-0,289 (0,006)	-0,289 (0,006)
SizeMicro	-0,509 (0,000)	-0,490 (0,000)	-0,483 (0,000)	-0,483 (0,000)
SizeSmall	-0,216 (0,014)	-0,210 (0,018)	-0,193 (0,027)	-0,194 (0,027)
Central_Eu	-0,234 (0,033)	-0,265 (0,015)	-0,300 (0,006)	-0,300 (0,006)
Northern_Eu	-0,378 (0,001)	-0,353 (0,001)	-0,342 (0,001)	-0,342 (0,001)
Eastern_Eu	-0,868 (0,000)	-0,897 (0,000)	-0,978 (0,000)	-0,978 (0,000)
Southern_Eu	-0,178 (0,118)	-0,150 (0,185)	-0,163 (0,148)	-0,162 (0,149)
South_East_Eu	-1,182 (0,000)	-1,192 (0,000)	-1,224 (0,000)	-1,224 (0,000)
Turnover_Mic	-0,285 (0,002)	-0,309 (0,001)	-0,307 (0,001)	-0,307 (0,001)
Turnover_Small	-0,168 (0,082)	-0,185 (0,056)	-0,208 (0,030)	-0,208 (0,030)
q6.1 Public financial support		0,272 (0,000)	0,201 (0,008)	0,195 (0,054)
q6.3 Private financial support		0,304 (0,029)	0,263 (0,056)	0,275 (0,138)
q7.1 Complex procedures			0,547 (0,000)	0,545 (0,000)
PublicSup X ComplexProc				0,013 (0,931)
PrivateSup X ComplexProc				-0,025 (0,927)
R Square	0,091 (0,000)	0,096 (0,000)	0,116 (0,000)	0,116 (0,992)

Table 11 Coefficients model 3

The first model contained the control variables. The direct and moderation effect are added later to see how this affect the relation while the control variables are in place. The control variables gave some interesting results. The sectors Industry ( $B = -.289, p < 0.01$ ), Retail ( $B = -.291, p < 0.01$ ) and Service ( $B = -.548, p < 0.001$ ) all had negative coefficients in comparison with the reference sector Manufacturing which is let out of the analysis. The age of the firms did not have any influence, since the variable ‘‘Founded before 2010’’ showed no significant result in reference to younger firms founded after 2010 ( $B = 0.106, p = 0.276$ ). The size of the companies did influence the prediction, Micro size firms had a lower score for SME\_ResourceActions ( $B = -.483, p < 0.01$ ) in comparison with Medium sized firms. The category Small sized firms had also a significant negative effect ( $B = -.193, p < 0.05$ ). This means, that smaller firms have fewer resource actions implemented in comparison to medium sized firms.

Looking at the different European regions, South-East Europe ( $B = -1.224, p < 0.001$ ) and East Europe ( $B = -.978, p < 0.001$ ) both had a significant negative regression coefficient compared to the reference dummy West Europe. The region North Europe ( $B = -.342, p < 0.01$ ) had a significant negative result in reference to West Europe. Moreover, Central Europe also had a significant negative effect ( $B = -.300, p < 0.001$ ). Taking a look at the turnover, the dummies Turnover Micro ( $B = -.307, p < 0.01$ ) and Turnover Small ( $B = -.208, p < 0.05$ ) both had negative significant regression coefficients compared to firms with Turnover Medium. The table corresponding to these statistical outcomes of model 3 can be found in Appendix 6: Multiple regression analysis.

The direct effect was found significant for variable q6.1 ‘‘Public financial support’’, with an unstandardized regression coefficient  $B = .201, p < 0.01$ . This means that hypothesis H1a is accepted, public financial support positively impacts SMEs’ resource actions. The second direct effect of q6.3 ‘‘Private financial support’’ also significantly predicts the dependent variable SME\_ResourceActions,  $B = 0.263, p < 0.05$ . This conclusion is based upon the fact that the hypothesised direction is one-tailed. In the case of a one-tailed hypothesis, the significance should be divided by two (2) since the regression output is two-tailed. Therefore, private financial support does positively impact SMEs’ resource actions. Moreover, the second hypothesis H2 is accepted. This is based upon variable q7.1 ‘‘Complex procedures’’ which is used as a proxy for the institutional environment,  $B = 0.547, p < 0.001$ . So, a more complex and institutionalised environment results in more implemented resource actions at SMEs in Europe.



The moderation effect had no effect given the insignificance of the fourth model where the interaction terms were included. This means that hypothesis H3a and H3b are both rejected.

The following hypotheses are accepted and rejected based on the drawn hypotheses:

<b>Hypotheses</b>	<i>B</i>	<i>Sig (p - value)</i>	<i>Accepted/ Rejected</i>
<i>Direct effect</i>			
<b>H1a</b> Public financial support	0,201	< 0,01	Accepted
<b>H1b</b> Private financial support	0,263	< 0,05	Accepted
<i>Direct moderator effect</i>			
<b>H2</b> Complex procedures	0,547	< 0,001	Accepted
<i>Moderation effect</i>			
<b>H3a</b> Public financial support X Complex Procedures	No significant model		Rejected
<b>H3b</b> Private financial support X Complex Procedures	No significant model		Rejected

Table 12 Hypotheses overview after multiple regression analysis

## Chapter 5: Discussion

This chapter will discuss the hypotheses that were formulated and the results of the multiple regression analysis. Furthermore, the findings are compared to theoretical findings, and interpretations for the results are provided.

### 5.1: The impact of financial support on SMEs resource actions

The direct effects that are tested in this study were public financial support and private financial support that positively impacts SMEs resource actions.

Throughout the years, several scholars have investigated the relation of public financial support on the adoption of resource actions by SMEs. The main findings were that public financial support increases the adoption and implementation of resource actions (Wang & Zhang, 2020) (Blundel, Monaghan, & Thomas, 2013) (Clement & Hansen, 2003) (Lee, Walker, & Zeng, 2017) (Rademaekers, et al., 2012). However, these previous studies had a slightly different research context, this study was focused on SMEs within Europe. After the analysis, the results showed that there was a significant relationship between public financial support and the implemented resource actions by SMEs. This indicates that the findings of the multiple regression study matched the theoretical framework on this relationship that has been identified.

Zooming in on the second direct effect, that of private financial support. Research showed that based on barriers that SMEs face when applying for public or bank based external financial support, these firms shift towards private forms of support (Zhu, Wittmann, & Peng, 2012) (Hussain, Millman, & Matlay, 2006). Due to this shift, SMEs are relying on different sources of financial support to implement resource actions. The studies found, provide evidence that this private form of financial support results in resource actions implemented by SMEs (Bakos, Siu, Orenge, & Kasiri, 2019) (European Commission, 2018) (Forkuoh, Li, Affum-Osei, & Quaye, 2015). The results of this study were in line with the reasoning of these aforementioned scholars, therefore, the theory regarding the effect of private financial support on resource actions is confirmed.

## 5.2: The effect of the institutional environment

The moderation effect is split up in two, a direct effect on SME resource actions and a moderation effect on the previously described main effects. First, the direct effect will be elaborated and after, the moderation effects will be discussed.

The direct effect is based upon evidence that Sun et al. (2019), Arbolino et al (2017) and Marinescu (2013) found. These scholars argued that strong institutions positively influence the availability and implementation of resource actions by SMEs. These strong institutions make it easier for SMEs to obtain financial support and helps them to implement resource actions. Based upon this reasoning, it was expected that the institutional environment increases the implemented resource actions by SMEs. The analysis showed that the direct effect of the institutional environment positively influenced the implemented resource actions by SMEs and is therefore in line with the theoretical reasoning.

Taking a look at the indirect moderation effect, the literature clearly showed that the theorised direct relations are influenced by strong formal institutions. Marinescu (2013), Mc Namara & O Donohoe (2013), and the OECD (2017) found that unstable, unreliable, and a weak institutional environment negatively influence the availability of financial support towards SMEs (Marinescu, 2013) (Mc Namara & O Donohoe, 2013) (OECD, 2017). Besides, Lindenberg (2014), Polzin et al. (2016), Polzin (2017) and Arbolino & Boffardi (2017) have found that a strong institutional environment enhances the availability of private as well as public financial support towards SMEs in implementing resource actions (Lindenberg, 2014) (Polzin, Flotow, & Klerkx, 2016) (Polzin, 2017) (Arbolino & Boffardi, 2017). This means that the main effects of public and private support are moderated by the institutional environment. Surprisingly, the results of the analysis did not show this theorised effect. The fourth model showed that this moderation effect was insignificant, and, therefore, could not be interpreted.

The theorised relations were based upon the theory brought up by Lindenberg (2014), Polzin et al. (2016), Polzin (2017) and Arbolino & Boffardi (2017), however, in the analysis, this is reflected as complex procedures. This is based upon the reasoning by Shanmugam (2020), who found that governmental rules and law had a positive effect on the availability of domestic investment, public as well as private (Shanmugam, 2020). Within the analysis, this is reflected by variable q7.1: Complex procedures. However, complex procedures could also constrain SMEs in obtaining financial support, which is in turn found by Luca (2016), who found that

complex and bureaucratic institutions constrain the availability and distribution of financial support towards SMEs (Luca, 2016). This reasoning contradicts the previously found moderating relationship which is tested in the analysis. Moreover, Skjærseth, Stokke & Wettestad (2006) found that soft law is more successful in encouraging firms to implement resource actions, instead of hard law (Skjærseth, Stokke, & Wettestad, 2006). More recently, this is also found by Pickering, McGee, Karlsson-Vinkhuyzen and Wenta (2018). They found that softer norms and regulations stimulate firms to increase their environmental expenditures and initiatives. Also, they found that strict norms and law enforcement require long and hard negotiations which result in a decrease in resource actions since all parties need to agree with the targets set by the governments (Pickering, McGee, Karlsson-Vinkhuyzen, & Wenta, 2019). This counter the arguments brought up by the earlier scholars that stated that more strict laws and regulations increase resource actions, which explains the insignificant effect of the moderation relation.

Furthermore, the insignificant effect could also be explained by a more data driven argument. The insignificant effects could be explained by the fact that all variables were binary measured. This made calculating the interaction terms exceedingly arbitrary, leaving little opportunity for interpretation as to how hard the legal or administrative procedures were for the companies. Only when a company answered yes on the question if they encountered complex procedures when setting up resource actions, they were included in this analysis. This made it harder to examine possible issues and limited the interpretation.

### 5.3: Control variables

The control variables showed some interesting results. All control variables were included in the multiple regression analysis via dummies. The first control variable was based on the theoretical grounds brought up by Stoian and Gilman (2017), they found that compared to newly founded firms, older firms have more established internal skills and processes to attract capital and divide company resources more efficiently (Stoian & Gilman, 2017). The output showed that there was an insignificant result, therefore, there is no difference found between the age of the firms and the implemented resource actions. This can be ascribed to the fact that the population of companies that were founded after 2010, was very small. The dummy founded before 2010 consisted of 2012 cases, while the dummy related to the firms founded after 2010, so the younger firms, only had 337 cases. This overrepresentation of older firms could have led to an insignificant result.

The sectors where the firms are operating in were added as a second control variable. This was based upon the theoretical foundation by Perrini, Russo, and Tencati (2007), and Russo and Tencati (2008). They found that resource actions differ among firms in different sectors (Perrini, Russo, & Tencati, 2007) (Russo & Tencati, 2008). The dataset contained four different sectors, manufacturing, retail, services, and industry. Manufacturing was taken as the reference category. All three sectors that were included in the regression model, showed significantly lower values for implemented resource actions compared to the reference group of manufacturing. These differences can be contributed to the nature of the sectors. It may be easier to deploy more and diverse resource actions in a manufacturing environment. In the manufacturing sector, for example, it may be easier to change the manufacturing process to save water and materials than in the retail sector, where such changes are not feasible. This denotes that this result should be regarded with caution.

Furthermore, the size of the companies could be influencing the resource actions taken by SMEs, this is based upon the study by Mc Namara & O Donohoe (2013). They claimed that the link between financial support and environmental practices might be influenced by the size of the company. They believe that smaller businesses have greater challenges in receiving financial backing than larger businesses, which is also supported by the theoretical framework in Chapter 2 (Mc Namara & O Donohoe, 2013). In the regression model, this is divided upon the categories belonging to the SME definition of micro, small and medium firms. In this case, size medium is taken as the reference category. The results of the analysis showed that both micro and small sized firms have a lower score on de resource actions taken by SMEs, which is in line with the reasoning by Mc Namara & O Donohoe (2013). This result is also in line with the reasoning brought up by Adomako (2019), who calls this the liability of newness (Adomako, Amankwah-Amoah, Danso, Konadu, & Owusu-Agyei, 2019). Younger firms have fewer resources and internal processes in place due to their limited experience. This causes that it is harder for these younger firms to apply for financial support as well as to implement resource actions.

In contrary to the moderating variable, the control variables of the five institutional regions of Europe did show some interesting results. To include the institutional regions of Europe is based upon work by Marinescu (2013), who conducted comparative research in the context of Europe's institutional regions. He investigated the differences between the Central, Eastern and Western European business environment. The findings showed considerable disparities in the

institutional areas that have an impact on the business climate (Marinescu, 2013). These differences are also seen after the regression analysis. All four regions showed a negative result compared to the reference category Western Europe. This is in line with the findings by Marinescu (2013), where the business environment of West Europe showed significant differences with the other regions. This means that the institutional environment in West Europe is the most favourable for implementing resource actions, while the institutional context of Southeast Europe is the least favourable. The reason why the dummy did show significant results, while the moderating variable q7.1 Complex procedures did not show any result could be explained by the institutional theory brought up by North (1991) and extended by Scott (2001). They both conceptualise the institutional context as a mix of formal as well as informal rules and ways to behave. This is much broader than the formal concept that is taken by q7.1 Complex procedures. The dummy variable of the European regions is much broader and exceeds the formal part that is captured by variable q7.1 Complex procedures.

At last, turnover is used as a control variable. Based upon arguments brought up by Bakos et al. (2019) and Cecere et al. (2020), it is harder for SMEs to attract financial support (Bakos, Siu, Orengo, & Kasiri, 2019) (Cecere, Corrocher, & Mancusi, 2020). This is because SMEs have a unique organizational structure. SMEs, overall, do not disclose company strategies or annual reports, making them less transparent than multinational corporations. After the analysis, the same outcome is found for the dummy micro turnover and the dummy small turnover. These dummies are related to the SME turnover definition of micro and small size firms. These dummies showed a significantly lower score for implemented SMEs resource actions in comparison with the reference category medium sized firms which is in line with the theoretical findings.

## Chapter 6: Conclusion

This chapter examines the entire study, as well as the results reached and the consequences for theory and practice. Furthermore, the limitations will be discussed, and the chapter will conclude with recommendations for further research.

### 6.1: Findings of the study

Given the growing pressures towards governments to meet the climate agreement of Paris, incentives are brought up by governments to steer companies to implement sustainable practises. One of the incentives that are proven effective is that of financial incentives. However, up to date, most research is focused on how MNEs experience these pressures and incentives instead of SMEs. This focus is mainly due to the greater physical visibility of MNEs in comparison with SMEs. Nonetheless, SMEs account for 99% of the business environment in Europe, which makes the scope of SMEs rather important considering the cumulative amount of impact on emissions. Furthermore, the characteristics of SMEs greatly differ compared to MNEs, which is assumed by early CSR literature. This resulted in false assumptions that MNE sustainability practises can be reapplied to SMEs (Jenkins, 2004) (Spence, 1999) (Lynch-Wood, Williamson, & Jenkins, 2009). These facts highlight the importance of research in the field of SMEs and provide the gap on which financial pressures and institutional factors influence SMEs in pursuing environmental practices considering the scarce resources they possess naturally.

This study focussed on the financial support that governments place to influence SMEs to implement resource actions. The theoretical framework dived into the topics of the adoption of resource actions, financial support, and the influence of the institutional environment. The concept of resource actions is based upon the stakeholder theory of Freeman (1984). Nowadays this is transformed into the Triple Bottom Line, which is a three-dimensional concept, consisting of social, economic, and environmental aspects (Russo M. V., 2008). This concept can be translated into several specific practices, resource actions, aimed at reducing the impact of the firm on the environment. These are measures or practises to reduce the environmental impact of the firm's operations in different areas under their direct control (European Commission, 2021). Neves et al. (2014) argue that resource actions are aimed at reducing the utilisation of resources, simultaneously adding value to the company by achieving its goals. So, it can be stated that implementing resource actions is a double-edged sword, reducing the

impact on the environment while achieving added value for the company (Neves, Drohomieretski, da Costa, & de Lima, 2014). The following eight resource actions were evaluated in this study:

- Saving water
- Saving energy
- Using predominantly renewable energy
- Saving materials
- Minimising waste
- Selling your scrap material to another company
- Recycling, by reusing material or waste
- Design sustainable products

There are more incentives that influence firms to implement environmental practices besides the benefits of resource efficiency. Rademaekers et al. (2012) looked into the most used incentives by policymakers and came up with three dimensions of incentives; administrative, economic and reputational incentives (Rademaekers, et al., 2012). They found that economic and reputational incentives were the most effective. Looking at the financial incentives, it can be said that there are different forms of incentives. A distinction can be made between public financial support and private or market-based financial support (Clement & Hansen, 2003) (Kaya, 2014) (European Commission, 2018) (Oguntoye & Quartey, 2020). Public support consists of governmental institutions providing capital or tax incentives to help or reinforce the financial state of SMEs. Private or market-based support incorporates a more diverse set of different parties that provide financial support. This can either be a bank, financial equity provider, a sponsor, investors, or relatives. The study found that public financial support significantly enhances the implementation of resource actions by SMEs (Rademaekers, et al., 2012) (Blundel, Monaghan, & Thomas, 2013) (Cecere, Corrocher, & Mancusi, 2020). Moreover, it is also found that due to the limitations SMEs have in obtaining public support, they shift towards private forms of financial support. To obtain financial support, SMEs mostly rely on regular bank loans (van der Wiel, Dubovik, & van Solinge, 2019) (Kaya, 2014). The choice for bank loans is because of the strict financial regulations and risk prevention that other financial institutions apply to SMEs. However, banks are also conservative in granting SMEs a loan, due to the organizational structure of SMEs. This barrier of obtaining financial support results in the shift of financial support towards family members or other relatives (Hussain, Millman, & Matlay, 2006) (Bakos, Siu, Orengo, & Kasiri, 2019). This other usage of financial



support is furthermore investigated in this study, the results showed that also private financial support by friends and family enhances the resource actions implemented by SMEs.

However, the theory showed that this relationship is influenced by a lack of governmental legislation. Bakos et al. (2019) and Rademaekers et al. (2012) investigated that legislation is an improving as well as limiting factor in increasing or decreasing resource actions by SMEs (Rademaekers, et al., 2012). This is conceptualized as the institutional environment, which is founded by North (1991) and extended by Scott (2001). The definitions of the institutional theory by North (1991) and Scott (2001) slightly differ, however, both institutional views are broadly applied in management science (Kostova, Roth, & Dacin, 2008). Raza et al. (2019) found that external pressures result in more resource actions implemented by SMEs, this emphasises the role those formal institutions need to take, to influence SMEs' environmental behaviour (Raza, Liu, & Usman, 2019). Moreover, Bakos (2019) identified barriers and drivers for SMEs in adopting resource actions. They found that the main driver of resource actions for SMEs is governmental regulations. One of the main barriers identified was a lack of environmental legislation. This stresses the importance of strong formal institutions in the implementation of resource actions. However, contrary to the theory, this study showed that this moderation effect was insignificant. Surprisingly, the dummy variables showed that there are differences between the European regions that have been controlled for. These dummies reflected the institutional regions of Europe, which influenced the implemented resource actions taken by SMEs. The dummy showed that the institutional context of Western Europe is the most favourable to implement resource actions, while the institutional context of Southeast Europe is the least favourable.

## 6.2: Implications

This study has some theoretical and managerial implications for the field of International Business.

This research is constructed from three different angles, that of resource actions, financial support, and the institutional environment, all three in the context of European SMEs. The research concludes that public, as well as private financial support enhances the resource actions taken by European SMEs. This study puts the focus on two financial support possibilities and looked at the effects on the implemented resource actions. Given the recent research in the field of financial support and MNEs, this study has changed the perspective and looked to the matter

within the SME European business context. This changes the current perspective while taking both financial support possibilities into account is a unique contribution to the literature. Also, this study looked into 8 different general resource actions all across different sectors, while most literature is focussed on resource actions based on the sector the firms are operating in. Moreover, adding the institutional environment into the relationship of financial support broadens the understanding of how SMEs could be influenced and what factors limit or strengthen them in implementing resource actions.

Furthermore, the study's managerial implications provide that policymakers can now focus on how to efficiently assign financial support to SMEs in order to meet the Paris climate agreement's objectives. Policymakers can best assist SMEs in making the transition to more sustainable practices by adopting the conclusions of this study. Furthermore, SMEs' managers are aware of which kind of financial support will best assist them in undertaking resource actions. It supports SMEs in deciding between different sorts of support while keeping in mind that both types assist them in accomplishing their objectives.

### 6.3: Limitations

There are certain limitations to this research. These are an important aspect of this study since this has implications for the interpretation of the methodology and results.

The most prominent limitation of this study was that all variables were datafied into binary variables. This made it harder to interpret the outcomes clearly since the questions were coded into yes and no answers instead of continuous variables. All used variables were made into dummies to conduct a regression analysis, however, due to the binary variables not the full advantages of the multiple regression analysis could be made. As an example, the binary data made it unclear how much financial support a company has gotten from a public institution, the data only showed that a company got support or not. A second limitation was that this thesis only investigated both public and private financial support, it did not investigate which of the two options is the most effective. So, this study did not execute a comparison study, no conclusions are drawn on which type of financial support is the most effective in stimulating SMEs to implement resource actions. Moreover, the third limitation is the scope of this study. The scope was SMEs within Europe, however, the Western European countries were overly represented in the data, while the Eastern European countries were less represented. This resulted in slightly skewed data however, the countries were taken into account via dummies

as control variables. Still, this overrepresentation must be considered. Fourth, the concept of the institutional environment that has been used as moderator was not included in the analysis as theorised by North (1991) and Scott (2001). The dataset only contained the variable q7.1 ‘‘Complex procedures’’, which is used as a proxy for formal institutions, while the informal institutions that are addressed by these scholars are not included. Moreover, looking at the statistical limitations, the assumption of normality has not been met for the dependent variable. The dependent variable is transformed by taking the inverse, square, square root, and the log transmission. The results showed that the test of normality remained significant, therefore, still no normality was found in the variable. Since the dependent variable remained skewed, the original data has been used.

#### 6.4: Directions for future research

Following up on the limitations, various research directions are suggested for future study. Future research should analyse the found relationships with more continuous data. By reanalysing the main findings with data that is from a higher measurement level, the main findings of this study could be confirmed as well as extended by diving into how SMEs use the different financial support to implement their resource actions and to what extent this is influenced by the institutional environment. Furthermore, this study dived into two different forms of financial support, this could be extended by taking a comparison on which type of financial support works best. This broadens the current knowledge about the prosperity of financial support from private as well as public institutions. Finally, future research should look at how much the informal institutional context influences the main relationships.

## References

- Abraham, F., & Schmukler, S. L. (2017). *Addressing the SME Finance Problem*. Malaysia: Development Research Group, the World Bank.
- Adomako, S., Amankwah-Amoah, J., Danso, A., Konadu, R., & Owusu-Agyei, S. (2019). Environmental sustainability orientation and performance of family and nonfamily firms. *Business Strategy and the Environment*, 1250-1259.
- Alhaddi, H. (2015). Triple Bottom Line and Sustainability: A Literature Review. *Business and Management Studies*, 6-10.
- Arbolino, R., & Boffardi, R. (2017). The Impact of Institutional Quality and Efficient Cohesion Investments on Economic Growth Evidence from Italian Regions. *Sustainability*, 1432.
- Bakos, J., Siu, M., Orengo, A., & Kasiri, N. (2019). An analysis of environmental sustainability in small & medium sized enterprises: Patterns and trends. *Business Strategy and the Environment*, 1285–1296.
- Blundel, R., Monaghan, A., & Thomas, C. (2013). SMEs and environmental responsibility: a policy perspective. *Business Ethics: A European Review*, 246-262.
- Bruton, G. D., Ahlstrom, D., & Li, H.-L. (2010). Institutional Theory and Entrepreneurship: Where Are We Now and Where Do We Need to Move in the Future? *Entrepreneurship Theory and Practice*, 421-440.
- Cecere, G., Corrocher, N., & Mancusi, M. L. (2020). Financial constraints and public funding of eco-innovation: empirical evidence from European SMEs. *Small Business Economics: An Entrepreneurship Journal*, 285-302.
- Clement, K., & Hansen, M. (2003). Financial incentives to improve environmental performance: a review of Nordic public sector support for SMEs. *European Environment*, 34-47.
- Commission of the European Communities. (2008). *Statistical Classification of Economic Activities in the European Community, Rev. 2*. European Commission.
- Cungu, A., Cow, H., Swinnen, J. F., & Vranken, L. (2008). Investment with weak contract enforcement: evidence from Hungary during transition. *European Review of Agricultural Economics*, 75-91.
- Dvouletý, O., Srhoj, S., & Pantea, S. (2020). Public SME grants and firm performance in European Union: A systematic review of empirical evidence. *Small Business Economics*.

- EDUCBA. (2021, February 9). *Financial Institution | Types, Features, Functions of Financial Institutions*. Retrieved from <https://www.educba.com/>: <https://www.educba.com/financial-institution/>
- Elkington, J. (1997). Accounting for the Triple Bottom Line. *Cannibals With Forks: the triple bottom line of 21st Century Business*, 18-22.
- European Commission. (2011). *Corporate Social Responsibility: a new definition, a new agenda for action*. Brussels.
- European Commission. (2018). *Flash Eurobarometer 456 (Small and Medium Enterprises, Resource Efficiency and Green Markets, wave 4)*. Brussels: GESIS data archive, Cologne. ZA6917 data file version 1.0.0, <https://doi.org/10.4232/1.12966>.
- European Commission. (2020). *User guide to the SME Definition*. Luxembourg: Publications Office of the European Union, 2020: European Union.
- European Commission. (2021, January 28). *Best environmental management practice - EU Science Hub*. Retrieved from <https://ec.europa.eu/>: <https://ec.europa.eu/jrc/en/research-topic/best-environmental-management-practice>
- European Commission. (2021, January 28). *Resource Efficiency - Environment - European Commission*. Retrieved from <https://ec.europa.eu/>: [https://ec.europa.eu/environment/resource\\_efficiency/](https://ec.europa.eu/environment/resource_efficiency/)
- European Commission. (n.d.). *Public Opinion - European Commission*. Retrieved from <https://ec.europa.eu/>: <https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm>
- Feng, Y. (2001). Political Freedom, Political Instability, and Policy Uncertainty: A Study of Political Institutions and Private Investment in Developing Countries. *International Studies Quarterly*, 271-294.
- Forkuoh, S. K., Li, Y., Affum-Osei, E., & Quaye, I. (2015). Informal Financial Services, a Panacea for SMEs Financing? A Case Study of SMEs in the Ashanti Region of Ghana. *American Journal of Industrial and Business Management*, 779-793.
- Freeman, R. (1984). *Strategic Management: A Stakeholder Approach*. Pitman, Boston, MA.
- Guillamon-Saorin, E., Kapelko, M., & Stefanou, S. E. (2018). Corporate Social Responsibility and Operational Inefficiency: A Dynamic Approach. *Sustainability*, 26.

- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis*. Hampshire: Cengage Learning EMEA.
- Hussain, J., Millman, C., & Matlay, H. (2006). SME financing in the UK and in China: a comparative perspective. *Journal of Small Business and Enterprise Development*, 584-599.
- Iheonu, C. O. (2019). Governance and Domestic Investment in Africa. *European Journal of Government and Economics*, 63-80.
- Jenkins, H. (2004). A Critique of Conventional Csr: An SME Perspective. *Journal of General Management*, 37-57.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). The Worldwide Governance Indicators: Methodology and Analytical Issues . *The World Bank - Policy Research Working Paper*.
- Kaya, O. (2014). *SME financing in the euro area: New solutions to an old problem*. Frankfurt am Main, Germany: Deutsche Bank Research.
- KNAW; NFU; NWO; TO2-federatie; Vereniging Hogescholen; VSNU. (2018). *Netherlands Code of Conduct for Research Integrity*. DANS.
- Kostova, T., Roth, K., & Dacin, T. M. (2008). Institutional Theory in the Study of Multinational Corporations: Critique and New Directions. *Academy of Management Review*, 994-1006.
- Kusyk, S. M., & Lozano, J. M. (2007). SME social performance: a four-cell typology of key drivers and barriers on social issues and their implications for stakeholder theory. *Corporate Governance: The international journal of business in society*, 502-515.
- Leahy, S. (2019, November 5). *Most countries aren't hitting 2030 climate goals, and everyone will pay the price*. Retrieved from <https://www.nationalgeographic.com/>: <https://www.nationalgeographic.com/science/2019/11/nations-miss-paris-targets-climate-driven-weather-events-cost-billions/>
- Lee, E., Walker, M., & Zeng, C. (. (2017). Do Chinese state subsidies affect voluntary corporate social responsibility disclosure? *Journal of Accounting and Public Policy*, 179-200.
- Lindenberg, N. (2014). Public Instruments to Leverage Private Capital for Green Investments in Developing Countries. *German Development Institute*.
- Luca, D. (2016). Do bureaucracies enhance or constrain policy effectiveness? Evidence from Turkey's central management of public investment. *London School of Economics and Political Science*.

- Lynch-Wood, G., Williamson, D., & Jenkins, W. (2009). The over-reliance on self-regulation in CSR policy. *Business Ethics: A European Review*, 52-65.
- Marinescu, C. (2013). Institutional Quality of the Business Environment: Some European Practices in a Comparative Analysis. *Amfiteatru Economic Journal*, 270-287.
- Mc Namara, A., & O Donohoe, D. S. (2013). The Role of Institutional Environments in Shaping SME Credit Availability: A European Perspective.
- Nejati, M., Quazi, A., Amran, A., & Ahmad, N. H. (2017). Social Responsibility and Performance: Does Strategic Orientation Matter for Small Businesses? *Journal of Small Business Management*, 43–59.
- Neves, T., Droghda, E., da Costa, S., & de Lima, E. (2014). Sustainable operations management: practices and measures in the food industry. *Int. J. Advanced Operations Management*, 335–352.
- North, D. C. (1991). *Institutions, Institutional Change and Economic Performance*. Cambridge : University of Cambridge.
- OECD. (2017). *Enhancing the Contributions of SMEs in a Global and Digitalised Economy*. Paris: OECD.
- Oguntoye, O., & Quartey, S. H. (2020). Environmental support programmes for small businesses: A systematic literature review. *Business Strategy Development*, 304–317.
- Perrini, F., Russo, A., & Tencati, A. (2007). CSR Strategies of SMEs and Large Firms. Evidence from Italy. *Journal of Business Ethics*, 285-300.
- Perrini, F., Russo, A., & Tencati, A. (2007). CSR Strategies of SMEs and Large Firms. Evidence from Italy. *Journal of Business Ethics*, 285–300.
- Pickering, J., McGee, J. S., Karlsson-Vinkhuyzen, S. I., & Wenta, J. (2019). Global Climate Governance Between Hard and Soft Law: Can the Paris Agreement’s ‘Crème Brûlée’ Approach Enhance Ecological Reflexivity? *Journal of Environmental Law*, 1-28.
- Polzin, F. (2017). Mobilizing private finance for low-carbon innovation—A systematic review of barriers and solutions. *Renewable and Sustainable Energy Reviews*, 525-535.
- Polzin, F., Flotow, P. v., & Klerkx, L. (2016). Addressing barriers to eco-innovation: Exploring the finance mobilisation functions of institutional innovation intermediaries. *Technological Forecasting & Social Change*, 34-46.

- Rademaekers, K., Williams, R., Ellis, R., Smith, M., Svatikova, D. K., & Bilsen, D. V. (2012). *Study on Incentives Driving Improvement of Environmental Performance of Companies*. Rotterdam: Ecorys.
- Raza, J., Liu, Y., & Usman, M. (2019). Corporate social responsibility commitment of small-to-medium enterprises and organizational competitive differentiation: Stakeholder pressure, market orientation, and socioeconomic context effects. *Journal of Public Affairs*, 413-427.
- Reilly, A., & Weirup, A. (2012). *Sustainability initiatives, social media activity, and organizational culture: An exploratory study*. *Journal of Sustainability and Green Business*.
- Rijksoverheid. (2020, December). *Wat is het Klimaatakkoord? | Klimaatverandering* | *Rijksoverheid.nl*. Retrieved from <https://www.rijksoverheid.nl/https://www.rijksoverheid.nl/onderwerpen/klimaatverandering/klimaatakkoord/wat-is-het-klimaatakkoord>
- Rodrik, D. (1991). Policy uncertainty and private investment in developing countries. *Journal of Development Economics*, 229-242.
- Russo, A., & Tencati, A. (2008). Formal vs. Informal CSR Strategies: Evidence from Italian Micro, Small, Medium-sized and Large Firms. *Journal of Business Ethics*, 339-353.
- Russo, M. V. (2008). *Environmental Management*. Oregon: Sage Publications.
- Scott, R. W. (2001). *Institutions and Organizations*. London: Sage.
- Shanmugam, M. (2020). Foreign Direct Investment and Domestic Private Investment: Role of Governance and Financial Development in Emerging Markets. *Journal of International Economics*, 15-28.
- Skjærseth, J. B., Stokke, O. S., & Wettstad, J. (2006). Soft Law, Hard Law, and Effective Implementation of International Environmental Norms. *Global Environmental Politics*, 104-120.
- Spence, L. J. (1999). Does size matter? The state of the art in small business ethics. *Business Ethics, the Environment & Responsibility*, 163-174.
- Spoz, A. (2014). Significance of the EU Funds in Investments of Small and Medium-Sized Enterprises. *Oeconomia Copernicana*, 61-74.
- Stoian, C., & Gilman, M. (2017). Corporate Social Responsibility That “Pays” : A Strategic Approach to CSR for SMEs. *Journal of Small Business Management*, 5-31.



- Sun, H., Edziah, B. K., Sun, C., & Kporsu, A. K. (2019). Institutional quality, green innovation and energy efficiency. *Energy Policy*.
- Svensson, J. (1998). Investment, property rights and political instability: Theory and evidence . *European Economic Review* , 1317-1341.
- United Nations Framework Convention on Climate Change. (2018, October). *What is the Paris Agreement?* | UNFCCC. Retrieved from <https://unfccc.int/>: <https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>
- UNSD. (2020). *UNSD - Methodology*. Retrieved from <https://unstats.un.org/>: <https://unstats.un.org/unsd/methodology/m49/>
- van der Wiel, K., Dubovik, A., & van Solinge, F. (2019). *Dutch SME bank financing, from a European perspective*. Den Haag: Centraal Planbureau .
- Van Kranenburg, H., & Voinea, C. L. (2017). *Nonmarket Strategic Management*. New York: Routledge.
- Wang, Y., & Zhang, Y. (2020). Do state subsidies increase corporate environmental spending? *International Review of Financial Analysis*.
- Yang, R., Tang, W., & Zhang, J. (2021). Technology improvement strategy for green products under competition: The role of government subsidy. *European Journal of Operational Research*, 653-668.
- Zhu, Y., Wittmann, X., & Peng, M. W. (2012). Institution-based barriers to innovation in SMEs in China. *Asia Pacific Journal of Management*, 1131-1142.

## Appendix

### Appendix 1: Total list of countries Flash Eurobarometer 456

Belgium	BE	Latvia	LV
Czech Republic	CZ	Luxembourg	LU
Bulgaria	BG	Hungary	HU
Denmark	DK	Malta	MT
Germany	DE	The Netherlands	NL
Estonia	EE	Austria	AT
Greece	EL	Poland	PL
Spain	ES	Portugal	PT
France	FR	Romania	RO
Croatia	HR	Slovenia	SI
Ireland	IE	Slovakia	SK
Italy	IT	Finland	FI
Republic of Cyprus*	CY	Sweden	SE
Lithuania	LT	United Kingdom	UK
Albania	AL	Former Yugoslav Republic of Macedonia**	MK
Montenegro	ME	Serbia	RS
Turkey	TR		
Iceland	IS	Moldova	MD
Norway	NO	United States of America	US

## Appendix 2: Descriptive analysis

All 36 incorporated countries and their share in the dataset.

tnscntry TNS COUNTRY ID					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 BELGIQUE	133	4,8	4,8	4,8
	2 DANMARK	129	4,7	4,7	9,5
	3 DEUTSCHLAND	176	6,4	6,4	16,0
	4 ELLADA	53	1,9	1,9	17,9
	5 ESPANA	147	5,4	5,4	23,3
	6 SUOMI	109	4,0	4,0	27,2
	7 FRANCE	141	5,1	5,1	32,4
	8 IRELAND	123	4,5	4,5	36,8
	9 ITALIA	101	3,7	3,7	40,5
	10 LUXEMBOURG	37	1,3	1,3	41,9
	11 NEDERLAND	155	5,6	5,6	47,5
	12 ÖSTERREICH	162	5,9	5,9	53,4
	13 PORTUGAL	80	2,9	2,9	56,3
	14 SVERIGE	108	3,9	3,9	60,3
	15 UK	129	4,7	4,7	65,0
	31 BALGARIJA	69	2,5	2,5	67,5
	32 KYPROS	24	,9	,9	68,4
	33 CESKA REPUBLIKA	93	3,4	3,4	71,8
	34 EESTI	22	,8	,8	72,6
	35 MAGYARORSZAG	96	3,5	3,5	76,1
	36 LATVIA	49	1,8	1,8	77,8
	37 LIETUVA	46	1,7	1,7	79,5
	38 MALTA	56	2,0	2,0	81,6
	39 POLSKA	80	2,9	2,9	84,5
	40 ROMANIA	10	,4	,4	84,8
	41 SLOVENSKA REPUBLIC	51	1,9	1,9	86,7
	42 SLOVENIJA	106	3,9	3,9	90,6
	43 TURKIYE	25	,9	,9	91,5
	45 ISLAND	38	1,4	1,4	92,9
	46 HRVATSKA	59	2,2	2,2	95,0
	52 NORGE	58	2,1	2,1	97,1
	63 REPUBLIKA MAKEDONIJA	15	,5	,5	97,7
	64 CRNA GORA	9	,3	,3	98,0
	70 SRBIJA	18	,7	,7	98,7
	71 ALBANIA	28	1,0	1,0	99,7
	73 MOLDAVIA	9	,3	,3	100,0
	Total	2744	100,0	100,0	

The distributions across sectors of the firms.

<b>nace_b SECTOR OF ACTIVITY (NACE) - SECTIONS GROUPED</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Manufacturing (NACE category C)	718	26,2	26,2	26,2
	2 Retail (NACE categories G)	788	28,7	28,7	54,9
	3 Services (NACE categories H/I/J/K/L/M)	745	27,2	27,2	82,0
	4 Industry (NACE categories B/D/E/F)	493	18,0	18,0	100,0
	Total	2744	100,0	100,0	

### Statistics

<b>nace_b SECTOR OF ACTIVITY (NACE)</b>		
N	Valid	2744
	Missing	0
Mean		2,37
Std. Error of Mean		,020
Median		2,00
Mode		2
Std. Deviation		1,056
Variance		1,116
Skewness		,137
Std. Error of Skewness		,047
Kurtosis		-1,201
Std. Error of Kurtosis		,093
Range		3
Minimum		1
Maximum		4
Sum		6501

## Size of firms in the dataset

scr10t SCR10T How many employees does your company have?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 1 to 9 employees	798	29,1	29,2	29,2
	2 10 to 49 employees	1107	40,3	40,5	69,7
	3 50 to 249 employees	830	30,2	30,3	100,0
	Total	2735	99,7	100,0	
Missing	5 DK/NA	9	,3		
Total		2744	100,0		

scr10t SCR10T How many employees		
N	Valid	2735
	Missing	9
Mean		2,01
Std. Error of Mean		,015
Median		2,00
Mode		2
Std. Deviation		,772
Variance		,595
Skewness		-,020
Std. Error of Skewness		,047
Kurtosis		-1,320
Std. Error of Kurtosis		,094
Range		2
Minimum		1
Maximum		3
Sum		5502

Cronbach's alpha for computing a sum score for the resource actions variable SME\_RA.

Reliability Statistics		
	Cronbach's Alpha Based on	
Cronbach's Alpha	Standardized Items	N of Items
,578	,583	8

**Inter-Item Correlation Matrix**

	q1.1 Saving water	q1.2 Saving energy	q1.3 Using predominantl y renewable energy	q1.4 Saving materials	q1.5 Minimising waste	q1.6 Selling your scrap material to another company	q1.7 Recycling, by reusing material or waste	q1.8 Design sustainable products
q1.1 Saving water	1,000	,372	,044	,270	,259	,088	,142	,095
q1.2 Saving energy	,372	1,000	,112	,250	,289	,054	,126	,095
q1.3 Using predominantly renewable energy	,044	,112	1,000	,045	,069	,041	,123	,029
q1.4 Saving materials	,270	,250	,045	1,000	,296	,158	,162	,180
q1.5 Minimising waste	,259	,289	,069	,296	1,000	,142	,211	,140
q1.6 Selling your scrap material to another company	,088	,054	,041	,158	,142	1,000	,113	,095
q1.7 Recycling, by reusing material or waste	,142	,126	,123	,162	,211	,113	1,000	,159
q1.8 Design sustainable products	,095	,095	,029	,180	,140	,095	,159	1,000

### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q1.1 Saving water	3,79	2,680	,347	,190	,523
q1.2 Saving energy	3,57	2,810	,362	,198	,523
q1.3 Using predominantly renewable energy	4,10	3,121	,121	,026	,592
q1.4 Saving materials	3,65	2,704	,383	,169	,513
q1.5 Minimising waste	3,58	2,756	,396	,179	,512
q1.6 Selling your scrap material to another company	3,89	2,928	,186	,044	,578
q1.7 Recycling, by reusing material or waste	3,84	2,771	,284	,088	,546
q1.8 Design sustainable products	4,00	2,915	,216	,058	,567

### Appendix 3: Missing value analysis

#### Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes <sup>a</sup>	
				Count	Percent	Low	High
tnscntry	2744	19,53	17,375	0	,0	0	0
scr10t	2735	2,01	,772	9	,3	0	0
nace_b	2744	2,37	1,056	0	,0	0	0
scr14	2356	3,24	1,216	388	14,1	0	0
q7.1	2744	,39	,487	0	,0	0	0
q6.1	2744	,30	,457	0	,0	0	0
q6.3	2744	,07	,248	0	,0	.	.
SME_RA	2744	4,3448	1,86901	0	,0	0	0

a. Number of cases outside the range (Q1 - 1.5\*IQR, Q3 + 1.5\*IQR).

#### Summary of Estimated Means

	tnscntry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
Listwise	19,47	2,00	2,36	3,25	,40	,31	,07	4,3180
All Values	19,53	2,01	2,37	3,24	,39	,30	,07	4,3448
EM	19,53	2,01	2,37	3,26	,39	,30	,07	4,3448

### Summary of Estimated Standard Deviations

	tnscntry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
Listwise	17,439	,769	1,056	1,215	,490	,463	,255	1,87351
All Values	17,375	,772	1,056	1,216	,487	,457	,248	1,86901
EM	17,375	,772	1,056	1,215	,487	,457	,248	1,86901

### Listwise Means

Number of cases	tnscntry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
2352	19,47	2,00	2,36	3,25	,40	,31	,07	4,3180

### Listwise Covariances

	tnscntry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
tnscntry	304,128							
scr10t	,735	,592						
nace_b	-,010	-,079	1,116					
scr14	-2,846	,581	-,165	1,477				
q7.1	,473	,015	,018	,023	,241			
q6.1	,275	,038	-,007	,029	,028	,214		
q6.3	,112	-,021	-,001	-,041	,003	,000	,065	
SME_RA	-6,940	,188	-,178	,426	,142	,064	,007	3,51004

### Listwise Correlations

	tnscntry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
tnscntry	1							
scr10t	,055	1						
nace_b	-,001	-,098	1					
scr14	-,134	,621	-,128	1				
q7.1	,055	,041	,034	,038	1			
q6.1	,034	,106	-,014	,052	,123	1		
q6.3	,025	-,109	-,004	-,134	,027	-,003	1	
SME_RA	-,212	,130	-,090	,187	,155	,074	,015	1



### EM Means<sup>a</sup>

tnsentry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
19,53	2,01	2,37	3,26	,39	,30	,07	4,3448

a. Little's MCAR test: Chi-Square = 60,909, DF = 20, Sig. = ,000

### EM Covariances<sup>a</sup>

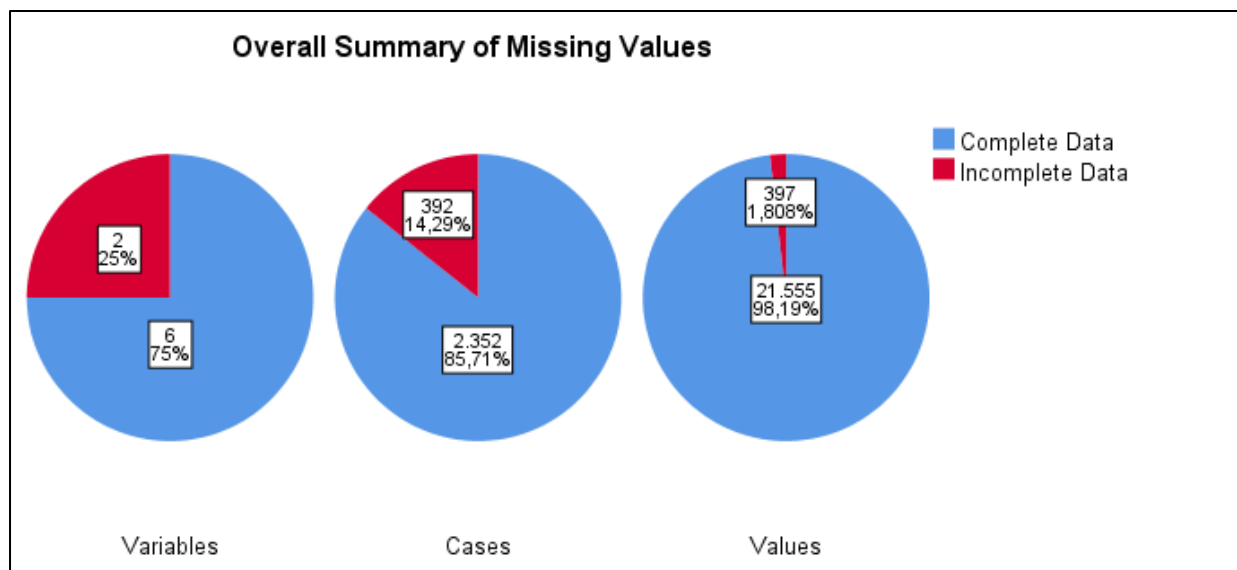
	tnsentry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
tnsentry	301,896							
scr10t	,957	,596						
nace_b	,126	-,072	1,116					
scr14	-2,596	,583	-,158	1,477				
q7.1	,561	,012	,016	,017	,237			
q6.1	,336	,034	-,004	,025	,031	,209		
q6.3	,078	-,021	-,001	-,040	,005	,000	,062	
SME_RA	-6,648	,198	-,155	,430	,126	,060	,006	3,49321

a. Little's MCAR test: Chi-Square = 60,909, DF = 20, Sig. = ,000

### EM Correlations<sup>a</sup>

	tnsentry	scr10t	nace_b	scr14	q7.1	q6.1	q6.3	SME_RA
tnsentry	1							
scr10t	,071	1						
nace_b	,007	-,088	1					
scr14	-,123	,621	-,123	1				
q7.1	,066	,032	,031	,028	1			
q6.1	,042	,097	-,008	,044	,138	1		
q6.3	,018	-,112	-,003	-,132	,039	,001	1	
SME_RA	-,205	,137	-,078	,189	,138	,070	,014	1

a. Little's MCAR test: Chi-Square = 60,909, DF = 20, Sig. = ,000

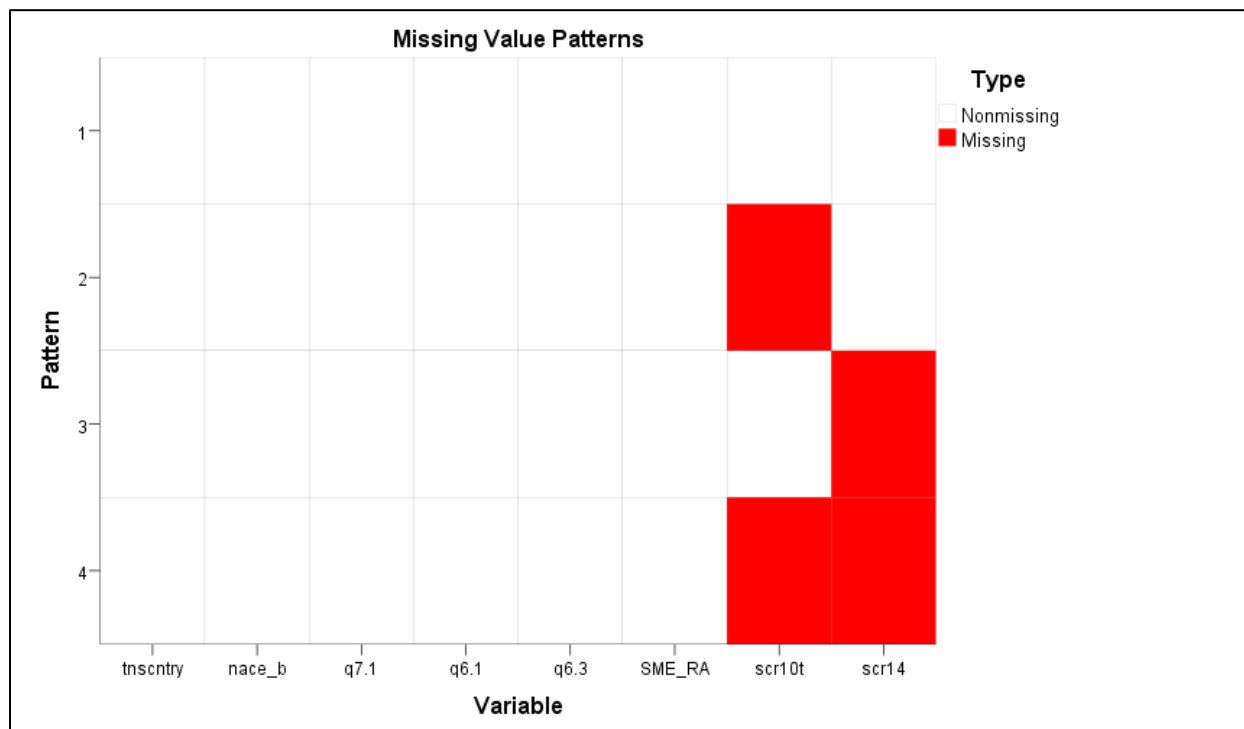


**Variable Summary<sup>a,b</sup>**

	Missing		Valid N
	N	Percent	
scr14 SCR14 What was your turnover last year?	388	14,1%	2356

a. Maximum number of variables shown: 25

b. Minimum percentage of missing values for variable to be included: 10,0%



## Crosstabulations of Categorical Versus Indicator Variables

			scr12t					
			Total	1 Before 1 January 2010	2 Between 1 January 2010 and 31 ...	3 Between 1 January 2013 and 1 January ...	4 After 1 January 2017	5 DK/NA
scr14	Present	Count	2356	2012	172	162	3	7
		Percent	85,9	86,7	85,6	87,1	15,8	38,9
	Missing	% 8 DK/NA	12,0	11,7	11,9	11,3	21,1	44,4
		% 7 Not applicable (DO NOT READ OUT)	2,2	1,6	2,5	1,6	63,2	16,7

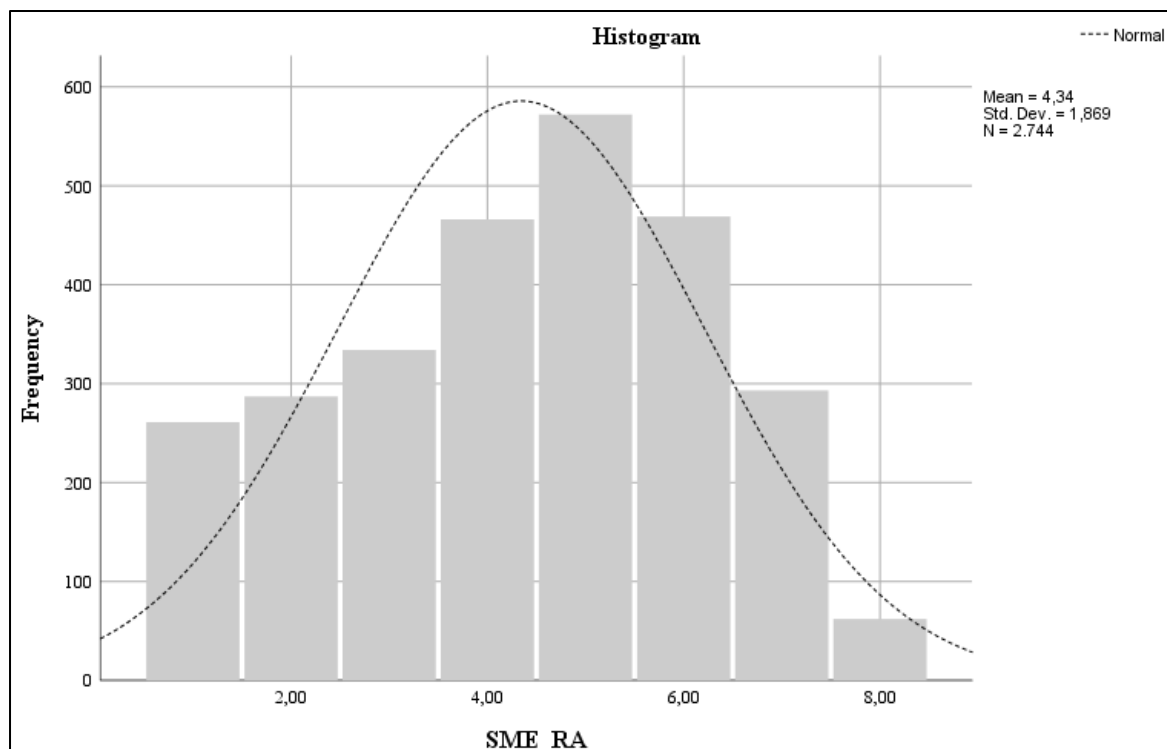
Indicator variables with less than 5% missing are not displayed.

## Appendix 4: Normality test

Descriptives			
		Statistic	Std. Error
SME_RA	Mean	4,3448	,03568
	95% Confidence Interval for Mean	Lower Bound	4,2748
		Upper Bound	4,4147
	5% Trimmed Mean	4,3580	
	Median	5,0000	
	Variance	3,493	
	Std. Deviation	1,86901	
	Minimum	1,00	
	Maximum	8,00	
	Range	7,00	
	Interquartile Range	3,00	
	Skewness	-,195	,047
	Kurtosis	-,857	,093

Tests of Normality						
Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.
SME_RA	,146	2744	,000	,947	2744	,000

a. Lilliefors Significance Correction



Test of normality with transformed SME\_RA

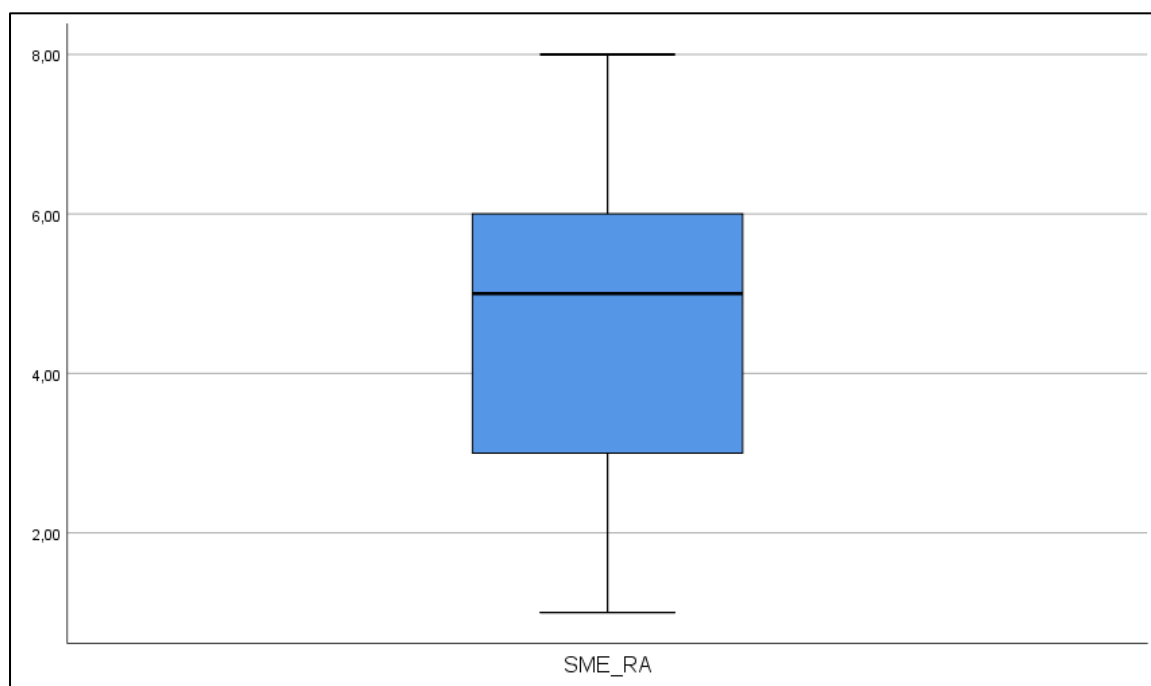
Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Log_SME_RA	2744	100,0%	0	0,0%	2744	100,0%
Inv_SME_RA	2744	100,0%	0	0,0%	2744	100,0%
Squ_SME_RA	2744	100,0%	0	0,0%	2744	100,0%
SquR_SME_RA	2744	100,0%	0	0,0%	2744	100,0%

Descriptives			
			Statistic Std. Error
Log_SME_RA	Mean		,5812 ,00472
	95% Confidence Interval for Mean	Lower Bound	,5719
		Upper Bound	,5904
	5% Trimmed Mean		,5973
	Median		,6990
	Variance		,061
	Std. Deviation		,24709
	Minimum		,00
	Maximum		,90
	Range		,90
	Interquartile Range		,30
	Skewness		-1,111 ,047
	Kurtosis		,377 ,093
Inv_SME_RA	Mean		,3187 ,00466
	95% Confidence Interval for Mean	Lower Bound	,3096
		Upper Bound	,3278
	5% Trimmed Mean		,2911
	Median		,2000
	Variance		,059
	Std. Deviation		,24387
	Minimum		,13
	Maximum		1,00
	Range		,88
	Interquartile Range		,17
	Skewness		1,998 ,047
	Kurtosis		2,914 ,093
Squ_SME_RA	Mean		22,3688 ,30517
	95% Confidence Interval for Mean	Lower Bound	21,7704
		Upper Bound	22,9672
	5% Trimmed Mean		21,6999
	Median		25,0000
	Variance		255,550
	Std. Deviation		15,98594
	Minimum		1,00
	Maximum		64,00
	Range		63,00
	Interquartile Range		27,00
	Skewness		,532 ,047
	Kurtosis		-,495 ,093
SquR_SME_RA	Mean		2,0247 ,00946
	95% Confidence Interval for Mean	Lower Bound	2,0062
		Upper Bound	2,0432
	5% Trimmed Mean		2,0425
	Median		2,2361
	Variance		,245
	Std. Deviation		,49539
	Minimum		1,00
	Maximum		2,83
	Range		1,83
	Interquartile Range		,72
	Skewness		-,633 ,047
	Kurtosis		-,480 ,093

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_SME_RA	,212	2744	,000	,854	2744	,000
Inv_SME_RA	,289	2744	,000	,663	2744	,000
Squ_SME_RA	,146	2744	,000	,925	2744	,000
SquR_SME_RA	,174	2744	,000	,918	2744	,000

a. Lilliefors Significance Correction

### Appendix 5: Boxplot SME\_RA



## Appendix 6: Multiple regression analysis

### Descriptive Statistics

	Mean	Std. Deviation	N
SME_ResourceActions	4,3461	1,86771	2719
Founded_Pre_2010	,8510	,35611	2719
Sector_Retail	,2869	,45238	2719
Sector_Service	,2722	,44515	2719
Sector_Industry	,1798	,38413	2719
SizeMicro	,2920	,45477	2719
SizeSmall	,4042	,49083	2719
Central_Eu	,1578	,36460	2719
Northern_Eu	,1622	,36869	2719
Eastern_Eu	,0725	,25928	2719
Southern_Eu	,1409	,34794	2719
South_East_Eu	,2067	,40501	2719
Turnover_Mic	,4748	,49946	2719
Turnover_Small	,2369	,42523	2719
q6.1 Public financial incentives	,30	,457	2719
q6.3 Private financial incentives	,07	,249	2719
q7.1 Complex procedures	,39	,487	2719
PublicIncXComplexProc	,1460	,35318	2719
PrivateIncXComplexProc	,0302	,17105	2719

### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Turnover_Small, Southern_Eu, Sector_Retail, Founded_Pre_2010, Eastern_Eu, SizeSmall, Central_Eu, Sector_Industry, Northern_Eu, South_East_Eu, Turnover_Mic, Sector_Service, SizeMicro <sup>b</sup>	.	Enter
2	q6.3 Private financial incentives, q6.1 Public financial incentives <sup>b</sup>	.	Enter
3	q7.1 Complex procedures <sup>b</sup>	.	Enter
4	PrivateIncXComplexProc, PublicIncXComplexProc <sup>b</sup>	.	Enter

a. Dependent Variable: SME\_ResourceActions

b. All requested variables entered.

Model Summary<sup>e</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,301 <sup>a</sup>	,091	,086	1,78537	,091	20,729	13	2705	,000
2	,311 <sup>b</sup>	,096	,091	1,78024	,006	8,810	2	2703	,000
3	,341 <sup>c</sup>	,116	,111	1,76110	,020	60,081	1	2702	,000
4	,341 <sup>d</sup>	,116	,110	1,76175	,000	,008	2	2700	,992

a. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro

b. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro, q6.3 Private financial incentives, q6.1 Public financial incentives

c. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro, q6.3 Private financial incentives, q6.1 Public financial incentives, q7.1 Complex procedures

d. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro, q6.3 Private financial incentives, q6.1 Public financial incentives, q7.1 Complex procedures, PrivateIncXComplexProc, PublicIncXComplexProc

e. Dependent Variable: SME\_ResourceActions

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	858,982	13	66,076	20,729	,000 <sup>b</sup>
	Residual	8622,353	2705	3,188		
	Total	9481,336	2718			
2	Regression	914,823	15	60,988	19,244	,000 <sup>c</sup>
	Residual	8566,512	2703	3,169		
	Total	9481,336	2718			
3	Regression	1101,164	16	68,823	22,190	,000 <sup>d</sup>
	Residual	8380,172	2702	3,101		
	Total	9481,336	2718			
4	Regression	1101,214	18	61,179	19,711	,000 <sup>e</sup>
	Residual	8380,122	2700	3,104		
	Total	9481,336	2718			

a. Dependent Variable: SME\_ResourceActions

b. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro

c. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro, q6.3 Private financial incentives, q6.1 Public financial incentives

d. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro, q6.3 Private financial incentives, q6.1 Public financial incentives, q7.1 Complex procedures

e. Predictors: (Constant), Turnover\_Small, Southern\_Eu, Sector\_Retail, Founded\_Pre\_2010, Eastern\_Eu, SizeSmall, Central\_Eu, Sector\_Industry, Northern\_Eu, South\_East\_Eu, Turnover\_Mic, Sector\_Service, SizeMicro, q6.3 Private financial incentives, q6.1 Public financial incentives, q7.1 Complex procedures, PrivateIncXComplexProc, PublicIncXComplexProc



Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5,412	,142		38,211	,000		
	Founded_Pre_2010	,083	,098	,016	,848	,396	,956	1,046
	Sector_Retail	-,320	,095	-,077	-3,368	,001	,636	1,572
	Sector_Service	-,576	,095	-,137	-6,058	,000	,654	1,530
	Sector_Industry	-,257	,106	-,053	-2,424	,015	,709	1,411
	SizeMicro	-,509	,108	-,124	-4,702	,000	,483	2,069
	SizeSmall	-,216	,088	-,057	-2,448	,014	,624	1,603
	Central_Eu	-,234	,109	-,046	-2,138	,033	,737	1,357
	Northern_Eu	-,378	,109	-,075	-3,476	,001	,729	1,371
	Eastern_Eu	-,868	,146	-,121	-5,967	,000	,824	1,214
	Southern_Eu	-,178	,114	-,033	-1,565	,118	,751	1,332
	South_East_Eu	-1,182	,102	-,256	-11,564	,000	,684	1,461
	Turnover_Mic	-,285	,094	-,076	-3,035	,002	,532	1,878
	Turnover_Small	-,168	,097	-,038	-1,740	,082	,692	1,445
2	(Constant)	5,295	,144		36,752	,000		
	Founded_Pre_2010	,099	,098	,019	1,007	,314	,952	1,050
	Sector_Retail	-,301	,095	-,073	-3,174	,002	,634	1,578
	Sector_Service	-,559	,095	-,133	-5,884	,000	,652	1,533
	Sector_Industry	-,253	,106	-,052	-2,396	,017	,709	1,411
	SizeMicro	-,490	,109	-,119	-4,517	,000	,479	2,089
	SizeSmall	-,210	,088	-,055	-2,377	,018	,621	1,611
	Central_Eu	-,265	,109	-,052	-2,424	,015	,733	1,365
	Northern_Eu	-,353	,109	-,070	-3,248	,001	,727	1,375
	Eastern_Eu	-,897	,145	-,125	-6,173	,000	,821	1,218
	Southern_Eu	-,150	,113	-,028	-1,326	,185	,748	1,336
	South_East_Eu	-1,192	,102	-,259	-11,695	,000	,684	1,462
	Turnover_Mic	-,309	,094	-,083	-3,287	,001	,530	1,886
	Turnover_Small	-,185	,097	-,042	-1,914	,056	,691	1,448
	q6.1 Public financial incentives	,272	,076	,067	3,572	,000	,962	1,039
	q6.3 Private financial incentives	,304	,139	,041	2,187	,029	,974	1,027
3	(Constant)	5,115	,144		35,428	,000		
	Founded_Pre_2010	,106	,097	,020	1,090	,276	,952	1,050
	Sector_Retail	-,291	,094	-,070	-3,098	,002	,634	1,578
	Sector_Service	-,548	,094	-,131	-5,835	,000	,652	1,534
	Sector_Industry	-,289	,105	-,059	-2,762	,006	,707	1,414
	SizeMicro	-,483	,107	-,118	-4,503	,000	,479	2,089
	SizeSmall	-,193	,087	-,051	-2,213	,027	,620	1,612
	Central_Eu	-,300	,108	-,059	-2,768	,006	,731	1,367
	Northern_Eu	-,342	,107	-,068	-3,186	,001	,727	1,375
	Eastern_Eu	-,978	,144	-,136	-6,786	,000	,817	1,224
	Southern_Eu	-,163	,112	-,030	-1,448	,148	,748	1,336
	South_East_Eu	-1,224	,101	-,265	-12,127	,000	,683	1,465
	Turnover_Mic	-,307	,093	-,082	-3,305	,001	,530	1,886
	Turnover_Small	-,208	,096	-,047	-2,177	,030	,690	1,449
	q6.1 Public financial incentives	,201	,076	,049	2,652	,008	,948	1,054
	q6.3 Private financial incentives	,263	,138	,035	1,911	,056	,972	1,029
	q7.1 Complex procedures	,547	,071	,143	7,751	,000	,965	1,036
4	(Constant)	5,116	,145		35,220	,000		
	Founded_Pre_2010	,106	,097	,020	1,092	,275	,952	1,051
	Sector_Retail	-,291	,094	-,070	-3,097	,002	,634	1,578
	Sector_Service	-,548	,094	-,131	-5,833	,000	,652	1,534
	Sector_Industry	-,289	,105	-,059	-2,763	,006	,707	1,415
	SizeMicro	-,483	,107	-,118	-4,495	,000	,478	2,092
	SizeSmall	-,194	,087	-,051	-2,214	,027	,620	1,612
	Central_Eu	-,300	,108	-,058	-2,765	,006	,731	1,368
	Northern_Eu	-,342	,108	-,068	-3,184	,001	,727	1,376
	Eastern_Eu	-,978	,144	-,136	-6,778	,000	,816	1,226
	Southern_Eu	-,162	,112	-,030	-1,444	,149	,748	1,338
	South_East_Eu	-1,224	,101	-,265	-12,119	,000	,682	1,466
	Turnover_Mic	-,307	,093	-,082	-3,300	,001	,529	1,890
	Turnover_Small	-,208	,096	-,047	-2,177	,030	,690	1,450
	q6.1 Public financial incentives	,195	,101	,048	1,930	,054	,534	1,873
	q6.3 Private financial incentives	,275	,185	,037	1,484	,138	,538	1,859
	q7.1 Complex procedures	,545	,088	,142	6,214	,000	,626	1,598
	PublicIncXComplexProc	,013	,151	,002	,087	,931	,403	2,482
	PrivateIncXComplexProc	-,025	,274	-,002	-,092	,927	,518	1,929

a. Dependent Variable: SME\_ResourceActions

Residuals Statistics <sup>a</sup>					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,5533	5,9752	4,3461	,63652	2719
Residual	-4,49101	5,08273	,00000	1,75590	2719
Std. Predicted Value	-2,817	2,559	,000	1,000	2719
Std. Residual	-2,549	2,885	,000	,997	2719

a. Dependent Variable: SME\_RA

