The influence of internationalization and formal institutions on corruption and firm innovation in emerging markets

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Abstract: Corruption is most common in emerging markets, whereas small medium enterprises are at the largest danger of becoming involved in corruptive practices. At this point, prior researchers were unable to establish a sufficient agreement about the effects of corruption, institutional quality and internationalization on SMEs' firm innovation in emerging markets. Applying the World Bank database, which encompasses 8153 SMEs in eight different emerging markets countries led through a logistic regression analysis to intriguing outcomes. Namely, this thesis found that corruption can definitely enhance SMEs' firm innovation as a non-market strategy to overcome bureaucratic obstacles. Interestingly, this thesis demonstrated that high-quality institution decreases SMEs firm innovation and that high-quality institutions strengthen the effect of corruption on firm innovation in emerging markets. In contrary to other results, internationalization indicated to enhance SMEs' firm innovation and also seems to reduce the degree to which corruption is used while undertaking internationalization activities.

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Chapter 1 - Introduction

Since SMEs are at the highest risk of being involved in corruptive activities, international business scholars are significantly more interested in the role of corruption as a non-market strategy to realise firm innovation (Imran; Rehman & Khan, 2020; Wellalage Locke & Samujh, 2019). Corruption is considered as the misuse of power for private gain, which is mainly seen as a negative attribute (Reiter & Steensma, 2010). To illustrate this, the impact of corruption is US$ 1,5 trillion per year worldwide (Kaufmann, Kraay, & Mastruzzi, 2009). Most of this impact derives from emerging markets, such as India, Argentina, Czech Republic and China, where corruption is more prevalent (Uberti, 2018).

Firm innovation consists of a social process through which individuals and teams create wealth by bringing unique components of resources together to exploit marketplace opportunities (Puffer, McCarthy & Boisot, 2010). Nowadays, it is widely agreed that innovation is essential for economic growth and development of a firm, which is supported by stable institutions (Anokhin & Schulze, 2009; Imran, et al., 2020). However, in emerging markets, firms experience less developed institutions, which seems to hinder innovation (Dutt & Traca, 2010). In this case, organizations face a variety of bureaucratic obstacles to obtain permits or approvals to actually create firm innovation (Krammer, 2019). Previous studies demonstrated that corruption is a potential non-market strategy to avert these bureaucratic constraints, whereas fewer resources are necessary, and thus more innovations can be produced (Hitchen, Nylund, Ferràs & Mussons, 2017). Furthermore, corruption could function as a tool to gain access to decision-making processes or to forge relationships (Kasuga, 2013; Darendeli & Hill, 2016; Leff, 1964). According to these scholars, corruption has a positive influence on firm innovation. However, opposite scholars assume that corruption has a negative impact due to the fact that corruption as a non-market strategy decreases the pace of innovations and also increases uncertainty among important environmental access (nguyen, Uddin, & Yazdifar, 2019). Other studies recently acknowledged that the impact of corruption is multidimensional, which can thus have positive and negative consequences for firm innovation in emerging markets (Krammer, 2019). In sum, multiple studies are contradictory about how corruption certainly enhances or hinders firm innovation (Nguyen, 2020).

Low-quality institutions seem to decrease firm innovation because more bureaucratic restrictions are present. Different scholars argue that well- established institutions function as a helping hand to overcome these bureaucratic restrictions (Cuervo-Cazurra, 2008). There is also

recent research that assumes that well-established institutions hinder firm innovation (Hsu, Tian & Xu, 2012; Mahendra, Zuhdi & Muyanto, 2015). Reasoning for this is that high-quality institutions impose higher requirements for obtaining their assistance (Hsu et al., 2012; Mahendra et al., 2015). In emerging markets, SMEs often lack resources and, therefore, are not capable to comply with those requirements (Hitchen et al., 2017). Nonetheless, the influence of bribery on firm innovation and the institutional dependencies of this relationship are less well understood (Krammer, 2019; Xie, Qi & Zhu, 2019).

While firms experience poor institutional quality, they expand more often internationally (Aulakh, Kotabe & Teegen, 2000). Recent studies reveal that firms who operate internationally enhance their firm innovation. This makes sense given that these firms can consume more resources and are exposed to new capabilities and knowledge (Luo, 2000). While operating internationally, scholars assume that these firms are less prone to apply bribes to get things done, such as permits or approvals. Reasoning for this is that they have to comply with international standards or expand to well-established institutional environments (Imran et al., 2020). In such cases, SMEs experience bureaucratic restrictions whereas less bribery is essential for developing firm innovation in emerging markets (Cronje,2003).

1.2 Problem statement

Most scholars agree that a great deal of corruption is already investigated. Nonetheless, these scholars have primarily shed a light on the influence of corruption and firm innovation in emerging markets at country-level. This has started to shift, whereas more studies investigate the relationship at firm-level. On that occasion, researchers revealed contradictory results. Specifically, Veracierto (2008) and Baumol (1990) found negative consequences of applying bribery to realize firm innovation, while Krammer (2019) and D'Este, Iammarino, Savona & von Tunzelmann, 2012) revealed that bribery could enhance firm innovation. As a consequence of these contradictions, Nguyen (2020) assumed that it is not fully understood how corruption impacts firm innovation. In other words, the relationship between remains ambiguous.

Secondly, extant research shows contradictions with respect to the direct effect of institutional quality and the moderation effect (Hsu et al., 2012; Mahendra et al., 2015; Cuervo-Cazurra, 2008; de Vaal & Ebben, 2011; Anokhin & Schulze, 2009; Pirtea, Sipos & Ionescu, 2019). As a result, scholars argue that research in this field is limited (Krammer, 2019; Xie et al., 2018) This seems quite important, given that the growth of firms is determined by contextual factors

(Xie et al., 2018). This thesis should, therefore, focus on the effect of institutional quality and firm innovation in emerging markets.

Even though prior research has already extended the knowledge about corruption and firm innovation, less is known about corruption beyond national borders (Zyglidopoulos, Dieleman, & Hirsch, 2020). Extant research failed to address the effect of corruption beyond the national borders on firm innovation. This gap seems also important to study based on the fact that more SMEs move abroad nowadays (Aulakh et al., 2000). This is confirmed by the study of Pirtea et al., (2019), which assumes that the current literature could be expanded by considering more dimensions. Equivalent, Krammer (2019) proposed to investigate whether the effect of corruption is positive, negative, or both.

The differences between studies in respect to corruption, institutional quality and the lack of knowledge about internationalization will be incorporate as literature gaps within this thesis.

1.3 Objectives & research question

Previous research regarding the impact of corruption on firm innovation has increased in recent years. However, scholars agreed that the dynamics of corruption are not fully understood at firm-level yet (e.g., Ayyagari, Demirgüç-Kunt & Maksimovic, 2014; Paunov, 2016; Xie et al., 2019). As a result of contractionary outcomes, this thesis will seek to discover the effect of corruption on SMEs' firm innovation in emerging markets in a broader perspective. This is done because Nguyen (2020) assumed that the effect is still ambiguous, and contradictions are present in the literature.

Additionally, this thesis will demonstrate how institutional contingencies affect corruption and firm innovation. Meaning that this thesis aims to reveal the different outcomes in terms of institutional quality. Finally, this thesis will dig deeper into the dynamics of corruption behind the national borders of firms. As indicated by Krammer (2019) and Zyglidopoulos et al., (2020) is current research into this field limited. This is important to extend existing literature because SMEs expand more frequently abroad beyond the national borders.

In sum, the following research was formulated:

''What is the effect of corruption on SMEs' firm innovation in emerging markets, and to what extent is this effect influenced by institutional quality and internationalisation''

1.4 Relevance

Since current research demonstrated inconsistent results with respect to the relationship between corruption and firm innovation in emerging markets much remains ambiguous. A first theoretical contribution is made by expanding the existing literature about the impact of bribes on the number of introduced products and services by SMEs in emerging markets. Secondly, this thesis extends the literature regarding the institutional dependencies and their influence on corruption on SMEs' firm innovation. This is crucial because extant literature is lacking, limited ,and inconsistent (Krammer, 2019; Xie et al., 2018; Hsu et al., 2012; Mahendra et al., 2015; Cuervo-Cazurra, 2008; de Vaal & Ebben, 2011;). Furthermore, at this point, extant literature lacks insights into the impact of corruption beyond the border. Therefore, this thesis means to highlight the link between the effect of corruption on innovation and the level of a firm's internationalization in emerging markets.

Alongside the theoretical relevance, this thesis encounters also practical relevance for managers and policymakers functioning in SMEs across various emerging markets. After examining the effect of corruption, managers will gain more insights that bribery as a non-market strategy can help to enhance their newly introduced product and service innovations in emerging markets. For policymakers might this thesis provide clearer insights how they could promote firm innovation at SMEs. Thus, it might shed some light on whether policymakers should apply stricter regulation to avoid corruption while this enhances firm innovation. In different circumstances, could it be that institutions should apply less strict regulation to enhance firm innovation among SMEs in emerging markets.

1.5 Outline of this thesis

This study will continue as follow. The second chapter will elaborate on already existing literature to explain the relationship of corruption, innovation, formal institutions internationalization. By examining this, several hypotheses will be formulated to define the relationships, which will be visualized in a conceptual model. Furthermore, the methodology will be described in chapter 3. The next chapter will consist of the discussion followed by conclusions as well as suggestions for further research.

Chapter 2 - Theoretical framework

This theoretical framework provides an overview of the most important academic insights related to critical concepts within this study. Initially, extant academic IB literature regarding firm innovation will be given and linked to small medium enterprises in emerging markets. Subsequently, the additional concepts of corruption, institutional quality and internationalization will also be discussed and how these influence product innovations directly or as moderator. As a result, multiple hypotheses will be derived including their predictions and relationships. This will eventually be visualized in a conceptual model.

2.1 Firm innovation

Even though innovation is a prominent subject in academic articles, innovation in general remains ambiguous (Crossan & Apaydin, 2010). Innovation is mostly seen as product innovation but encounters more characteristics of innovation. Scholars suggest that product innovation could consist of setting up a new process of production, substitution of cheaper material, reorganization of production or an improvement in instruments or methods of realizing innovation (Kline & Rosenberg, 2010). Nonetheless, studies agree that innovation encompasses improvements and renewal (Kahn, 2018). In this research, product innovation is considered as ''*the multi-stage process whereby organizations transform ideas into new/improved products, services or processes, in order to advance, compete and differentiate themselves successfully in their marketplace*'' (Baregheh, Rowley, & Sambrook, 2009, p1334). This is in line with the indication of Kline and Rosenberg (1986) that innovation is regarded as an evolutionary, nonlinear and iterative process between the organization and its environment (Kline & Rosenberg, 1986; Dosi & Nelson, 1994; Malecki, 1997).

Innovation is generally driven by three principles approaches such as induced innovation, evolutionary theory of technological change and part-dependent of innovation (Dixon, 1997). Dixon's study (1997) indicates that innovation is supported by the demand-pull, local search, imitation of practices and satisfaction behaviour of firms. The process in which those innovations are generated consists of the following steps: idea generation or intervention, development and commercialization. (Kotsemir, & Meissner, 2013; Kahn, 2018). However, an innovation process can take many forms depending on their incremental change to radical shifts of routines (Bullinger, 2008). Innovation inheres two different types like technological and non-technological innovations. Technological innovation is defined as product and process innovation, while non-technological innovation is associated with organizational and marketing

innovation (Geldes, Felzensztein, & Palacios-Fenech, 2017). Those types can be illustrated by radical and incremental change. Radical innovation illustrates fundamental changes in new products that represent revolutionary changes in technology with experiencing high uncertainty. Whereas incremental innovation portrays minor changes to existing products using extant technologies (Song & Thieme, 2009). Firms increasingly participate more in explorative and exploitative activities, which results in innovation. By doing this, a firm develops a competitive sustainable advantage (Brown & Eisenhardt, 1995).

In general, SMEs are significant contributors in terms of providing added value in developing countries (Mahemba & Bruijn, 2003). In the context of emerging markets, organizations focus on improving their practices, processes and organizational models within their company instead of altering the global technological frontier. (Ayyagari, Demirgüç-Kunt & Maksimovic, 2011). SMEs can choose to make new innovations by themselves or adopt already existing innovations from other companies. The choice between both depends on the internal capabilities and the strategic orientation of a SME (Mahemba & Bruin, 2003). However, Mahemba and Bruijn (2003) suggest that adopting an innovation would be a more suitable choice and strategy for SMEs in emerging markets. Innovation is frequently more focused on exploitation activities, which is basically always context-driven in emerging markets (Ayyagari, et al., 2011).

2.2 Corruption

In recent years various scholars have studied the influence of corruption on different economical outcomes as well as performance (Sena, Duygun, Lubrano, Marra & Shaban, 2018). While others say corruption enhances economic growth, the opposite studies declare that corruption hampers economic growth by its influence on investment (Méon & Sekkat 2005). In today's world, corruption is widely accepted to be a multidimensional phenomenon (Hellman, Jones & Kaufmann, 2003), which might include bribery of public officials, kickbacks in public procurement and misappropriation of public funds. Overall, the definition of corruption consists of a lot of variation among articles. However, several studies agree that corruption encounters the misuse of public power for private gain in an illegal manner (Mauro, 1995; Reiter & Steensma, 2010; Xie et al., 2019). Bribing practices remain the most common amid different components of corruption in order to overcome unfavourable delays due to bureaucratic processes (Uhlenbruck, Rodriguez, Doh, & Eden, 2006; Myrdal, 1968). A bureaucratic process starts from importing raw materials to exporting the finished products, which regularly result in considerable time wasted and unacceptable delays (Kasuga, 2013).

Bribery is primarily used to enhance the speed of their actions (Svensson, 1999). General managers consider how much a firm is willing to pay bribes to bureaucrats. The willingness of using a bribe seems to depend on the manager's ability and the outcome of the bribe (Kasuga, 2013). However, there is still a debate going on, if corruption is mainly positive or negative for economic activities.

Extant research acknowledges that corruption has a negative influence on a country's economic performance (Sena et al., 2018). Baumol (1990) finds that a high level of corruption leads to an increase of high market uncertainty which ultimately seems to dissuade entrepreneurial talents of firms from investing. By facing this, firms tend to focus on more rewarding and easier plan activities (Baumol, 1990). Others argue that corruption hampers economic growth because it hinders trust between actors and their environment which is needed to develop high value-added activities (Anokhin & Schulze, 2009; Kabadurmus & Sylwester, 2020). Corruption implies more drawbacks such as a decrease in productivity as well as effectiveness of foreign aid (Dutt, & Traca, 2010). Veracierto (2008) assumed that the pace of innovation within organizations slows down when corruption is involved. All these negative consequences are argued as the sanding effect of corruption. In contrast to prior studies, do opposite studies advocate the positive effects of corruption. These positive effects are mainly seen in countries with inefficient institutions and thus weak institutional settings (Dreher & Gassebner, 2013; Méon & Weill, 2010). In these environments, corruption is predominantly used in order to overcome bureaucratic obstacles as inefficiencies, rigid regulation, political risks and it makes up for a lack of favourable affiliations (Krammer, 2019). As a consequence of using bribes, procedures can be quicker ran through, whereas firms faster obtain bureaucratic permits to get things done (Goedhuys, Mohnen & Taha, 2016). Scholars indicate this as the greasing effect of corruption (Krammer, 2019).

Corruption is seen as more prevalent in less economically developed countries such as emergent markets (Uberti, 2018). Within these markets, corruption practices are more accepted than in other parts of the world (Tian, Ruan & Xiang, 2017). Unnecessary rules and procedures, which create institutional voids are an important determinant of corruption when it provides opportunities. These institutional voids are more seen in emerging markets than in developing countries (Khanna & Palepu, 2010). Tian et al., (2017) indicated that companies use bribes frequently in order to overcome bureaucratic obstacles (Tian et al., 2017) in order to move up the pace.

2.2.1 Corruption and firm innovation

Corruption in terms of bribery is a legal or illegal transaction between rational actors and opportunistic actors who seek for self-interest in the appropriate context, for instance, speed up approvals. Firm innovation is essential for SMEs' ultimate survival and economic growth (Zapata-Cantu, 2020). A firm has a strategic option to introduce a new product through innovation (Dawid, Kopel & Kort, 2010). Bribery can positively facilitate new product innovation within SMEs for several reasons in emergent markets.

In the context of emerging markets, organizations continuously experience unfavourable regulations, such as approvals, permits, certifications and licenses. However, SMEs have fewer resources available to deal with these institutional voids (Hitchen et al., 2017) and are constantly forced to negotiate and manage the limitations imposed by various institutions (Webb, Ireland & Ketchen, 2014). Hadjimanolis (1999) and Goedhuys et al., (2016) found evidence that these bureaucratic obstacles significantly influence the number of product innovations. Bribery can facilitate a less uncertain and faster way to deal with unfavourable bureaucratic obstacles (Krammer, 2019). To illustrate that, productivity and performance would be enhanced and thus transactions cost would be decreased (D'Este et al., 2012). Ahlin & Bose (2007) and Sharma, Pathak, Borah & Adhikary (2020) indicate that lowering transaction costs lead to a rise in the number of product introductions. Hence, bribery is a more efficient and quicker way to implement product developments in emerging markets.

Secondly, bribes can facilitate access to restricted decision-making processes. In the context of emerging markets, political authors do not often allow any participates in their decision-making process, where a SME needs to deal with unfavourable regulation (D'Este et al., 2012). This is considered as the 'red tape', which includes meaningless paperwork, unnecessary rules, procedures and regulation (Bozeman, 1993; Goedhuys et al., 2016). To deal with the 'red tape' SMEs have to consume resources and therefore less resource will be left to actually develop new product innovations (Chryssochoidis & Wong, 1998; Audretsch, Belitski & Brush, 2020). Kasuga (2013) considers bribery as an effective way to cut the red tape in order to gain influence over political authors and their decision-making process. This is in line with Leff (1964) who argues that bribery might be the only solution. In this case, bribery offers SMEs an option to advance their innovations to political authors before the regulation has been made by politicians (Leff, 1964; Kasuga, 2013).

Finally, product innovation of SMEs can be predominantly risky and costly in emerging markets (Berenson & Mohr-Jackson,1994; Games, 2019) and can be chosen as a strategic option to be profitable in the long term. However, in emerging markets, SMEs experience more political changes, risks and pressure and thus they do differ in their political and economic landscapes. This induces more uncertainty and major challenges which need to be monitored continuously (Marquis & Raynard, 2015). Delays are mainly seen in product innovation and lead to a decline in sales, profitability and competitive disadvantages (Krammer, 2019). Therefore, firms are willing to avoid these delays and willing to use bribes as insurance, so changes do not damage or conflict with their activities (Leff, 1964; Audretsch et al., 2020). Bribery can form and facilitate a strong relationship with bureaucratic authorities, who can function as a shield for political changes. In this case, a SME will not be affected by political changes, which increases the number of product innovations produced (Darendeli & Hill, 2016)

So, bribery helps to overcome bureaucratic obstacles and thus decreases transaction costs, influence the decision-making processes and tackle delays. This indicate that bribery has a positive effect on product innovation in emerging markets and therefore it is hypothesis that:

H1*: Corruption has a positive effect on firm innovation by SMEs in emergent markets*

2.3 Institutional theory

The interaction between organizations and institutions is highlighted in the institutional theory (Voinea & Van Kranenburg, 2017). Scott (1995) and North (1990) are one of the most famous authors who have studied this institutional environment. North (1990) defines institutions as '*'the rules of the game in a society or, more formally, are the humanly devised constraints that shape human actions''* (North, 1990, p3). Behaviour of organizations is thus shaped by the surrounding formal and informal institutions (Palthe, 2014). The formal institutions constrain behaviour with law, regulation and rules, while informal institutions represent norms and cultures (Voinea & van Kranenburg, 2017). These institutions establish political, legal and social arrangements, which creates order as well as reduces uncertainty (Voinea & van Kranenburg, 2017).

Scott (1981) argues that the institutional environment encompasses regulative, normative and cognitive social systems. The regulative pillar implies law, regulation and rules, which sanctions, punish or reward behaviour. The normative pillar indicates how things should be

done and is referred as norms. As a result, the normative pillar can empower or enable change within an organization (Scott, 1981). The third pillar consists of culture and religion, which includes those inhabitants who have a shared mind (Voinea & van Kranenburg, 2017). In other words, it can be concluded that behaviour of organizations is not only determined by economic premises but also originate from the institutional context, such as norms and culture (Meyer & Rowan, 1977).

Organizations strive to be profitable and economic growth to ultimately survive (Zapata-Cantu, 2020). This realization is not only determined by economic motives but also the ability to meet expectations in the institutional context (Scott, 1981). When meeting expectations, they gain legitimacy which refers to ''*the extent an organization's behaviours is supported within a social system'' (*Voinea & Van Kranenburg, 2017). This means that actions should be desirable, being appropriate with the system of norms and that beliefs and definitions are constructed as in the institutional environment *(*Voinea & Van Kranenburg, 2017). Nevertheless, this does not imply that organizations always respond in the same manner. Scott (1995) argues that the actions of organizations towards social pressure differ because institutional contexts are distinctive from each other. Thus, actions as responses, are determined by a specific institutional context where they operate in. However, these constraints and institutional pressures lead to similar behaviours as well as structures to reduce uncertainty (DiMaggio & Powell, 1988). This can be distinguished in coercive, normative and mimetic adaption. Coercive derived from the legal mandates and regulations provided by regulative bodies, whereas normative derives from similar attitudes and approaches of peers, professionals and groups. The desire to deal with uncertainty by replicating processes and technology in order to be as profitable as competitors come from the mimetic pressure (Voinea & Van Kranenburg, 2017).

Institutions must create a well-functioning atmosphere in which customers and sellers can come do business (Khanna & Palepu, 2010). To realize this, intermediates need to provide adequate information and contract enforcement. However, this is also missing in the sense of emerging markets (Khanna & Palepu, 2010). Khanna and Palepu (2010) indicate this lack as an 'institutional void' where institutions not working completely well or are absent (Khanna & Palepu, 2010). As prior mentioned, the institutional influence on economic, society and business differ and thus the degree of transaction costs (TCE), for instance, a high regulative environment generates more TCE for organizations. Institutional voids increase TCE, which makes it less attractive to engage in innovation and hampers the leverage of unique knowledge,

talent and skills (Doh, Rodrigues, Saka-Helmhout & Makhija, 2017). Quality seems thus really important for realizing innovation and is identified as a source of competitive advantage. Therefore, governments alter their legal, political, economic and cultural context to improve their working conditions for organizations (Pedersen, 2010).

2.3.1 The role of formal institutions in product innovation

A large extant of studies tried to explain the dynamics of formal institutions on product innovation. Exclusively, the impact of institutional quality on product innovation has been studied (Wang, Zhao, Dang, Han & Shi, 2019). According to Barasa, Knoben, Vermeulen, Kimuyu & Kinyanjui (2017) consist institutional quality of three dimensions, such as rule of law, regulatory quality, and government policies to control corruption that protects the interest of innovators. Institutional quality seems to lower the risk, provide support for new businesses, and facilitate entrepreneurship (Lee & Law, 2017). Kraay et al., (2010) defined institutional quality as ' *the traditions and institutions by which authority in a country is exercised'* (Kraay et al., 2010, ʹp222).

This definition encompasses three constructs and six Worldbank Governance Indicators (WGI's) such as Voice of Accountability (VA), Political stability and Absence of Voilence (PV), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL) and Control of corruption (Kraay et al., 2010). VA relates to capturing perceptions of the extent to which a country's inhabitant are able to participate in selecting their government, whereas PV includes the capturing perceptions of the likelihood that the government will be destabilized (Kraay et al., 2010). The GE encompasses the quality of public and civil services, and their independence for political pressures, while RQ takes into account the ability of the government to formulate and implement sound policies and regulations. The extent to which agents have confidence and abide rules derived from the RL indicator and CC considers the extent which public power is exercised for public gain (Kraay et al., 2010). Those indicators are derived from dimensions such as the selection, monitoring and replacement of governments, the capacity of the government to effectively formulate and implement sound policies and the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kraay et al., 2010).

Lee and Law (2017) argue that the impact of the regulation on product innovation derives from components, such as compliance with regulation and regulation changes firm's incentives to

invest. A tax imposed by the government reduces the availability of resources which ultimately hinders innovation practices. Strong regulation, such as effective patent law, may encourage firms to invest, while price or market constraints may minimize a firm's ability to invest in innovation activities (Lee and Law, 2017). Van Waarden (2001) studied the effect of formal institutions and found that those institutions were more successful in mitigating risk and unpredictability, which led to more innovation among businesses.

The quality of institutions seems thus an important indicator for product innovation at firm level. This is confirmed by Verheul, Wennekers, Audretsch & Thurik (2002), El-Namaki (1998) and Baumol (2002) who indicate that a well-established institutional context improves the start of new operations and product innovations. Baumol (2002) argues that when firms are plagued by selectivity and randomly enforced rules and laws, they will be less innovative. Knowles and Weatherston (2006) assume that poor quality institutions decline the stimulus to invest, which results in an allocation of critical resources. As laws and rules are well settled, opportunism would decrease, so trust, administration of long-term and obligations improve (Arias & Caballero, 2006). As indicated in paragraph 2.3.1 a decline in transaction cost leads to a rise of more introductions of product developments within a firm (Ahlin & Bose, 2007).

In conclusion, institutional quality refers to regulative, normative and cognitive institutions, which seem to enhance product innovation when well-established. Institutional quality includes rule of law, regulatory quality, and government policies to control corruption that protects the interest of innovators. (Barasa et al., 2017). So, therefore, I hypothesis that:

H2: *A high quality formal institution has a positive effect on firm innovation by SMEs in emerging markets*

2.3.2. Formal institutions as a moderator on the effect of corruption on firm innovation

As mentioned in paragraph 2.3 do firms seek for gaining legitimacy in the institutional context where they operate in (Voinea & van Kranenburg, 2017). Therefore, we concluded that institutions have a positive direct effect on firm innovation. Nonetheless, if the institutional quality influence the direct effect of corruption on firm innovation is still ambiguous. Extant IB literature paid significant attention to this moderator effect in order to understand the dynamics.

The relationship between corruption and product innovation including the moderator institutional quality is a very complex issue (Anokhin & Schulze, 2009). However, Mungiu-Pippidi (2015) revealed that an organization's innovation behaviour is determined by the intensity of corruption within a country and argued that a larger control of bribery increases innovation potential. As a result, high institutional quality can improve corporate innovation operations (Pirtea et al., 2019). This conclusion is in line with the studies of Kaufman et al., (2010) and Imran et al., (2020). Furthermore, when an organization experiences a high regulative institutional context, innovators are more likely to develop an internal culture as well as practices, which ultimately dampen bribery to gain legitimate spillover (Kostova & Zaheer, 1999). They admit that if the institutional quality is poor, an organization can take advantage by using bribes to increase speed or overcome bureaucratic obstacles (Imran et al., 2020; Goedhuys et al., 2016). Emergent markets are associated with less efficient institutions, which are unable to regulate corruption within countries. As a result, firms are more likely to engage in bribery to take advantage of a public official to speed up lengthy procedures and thus bribery as corruption, seems more prevalent in emerging markets (Méon & Weill, 2010; Imran et al., 2020).

As a result, I argue that a better quality of institutions will mitigate the levels of corruption that are beneficial to product innovation. Munigiu-Pippidi (2015) revealed that the innovation behaviours of an organization are determined by the intensity of corruption within a country.

H3: *A high quality institution negatively moderates (weaken) the effect of corruption on firm innovation by SMEs in emerging markets.*

2.4 Internationalization

In recent years IB literature has significantly scoped their focus on business' internationalization process. This reflects the growing number of firms, who expand abroad. The internationalization of a firm is derived from the behavioural theory (Cyert & March, 1963; Aharoni, 1966). Internationalization is defined as ''engaging in international operations''. This subject may encounter foreign subsidiaries, an international joint venture, licensing agreements, international advertisement campaigns, exhibitions and other events or actions (Johanson & Vahlne, 1990).

SMEs are usually restricted to a small area and thus geographical expansion is broadly considered as a prominent factor for growth (Barringer & Greening, 1998). Expanding internationally enables SMEs to attain larger demand of customers, which may lead to more sale. Furthermore, geographical areas entail differences in market contexts, which means that extant knowledge and capability are not appropriate for doing business in new markets (Lu & Beamish, 2001). However, SMEs can obtain new knowledge that might lead to new relevant capabilities due to the fact that it expands internationally (Barkema & Vermeulen, 1998). The generation of new knowledge and capabilities provide SMEs to meet abroad requirement that helps to ultimately survive. In addition, learning is one of the major reasons to actual internationalize. SMEs can master new marketing and production knowledge in international markets. During the expansion, a firm will continuously learn, which could be a source of new knowledge. Based on this knowledge SMEs would be able to enhance innovations produced by a SME. Nevertheless, the capacity to learn from internationalization depends on the diversity it can access within a market (Zahra, Ucbasaran, & Newey 2009).

In the context of emerging markets, SMEs often lack resources and thus there are fewer resources available. Studies indicated that the expansion from emerging markets might be driven by the need for resources (Tsai & Eisingerich, 2010), because internationalization provides access to new resources (Luo, 2000). The entrepreneurial view indicates that non-internationalization and internationalization firms differ in the degree of resources. It seems that internationalization firms possess more unique resources, which SMEs firms can exploit (Luo, 2000). Other research agreed that resources between these firms differ in terms of social, financial, physical and human sources (Brush, Edelman & Manolova, 2002). The degree of resources within a SME positively affects the number of innovation capacity and ultimately firm growth and survival.

International standards are part of international governance, which functions as guideline and control for firms' behaviour to ensure collective welfare (Abbott & Snidal, 2001). When a firm decides to internationalize, firms will be subjected to these international standards. Such international standards are an efficient way to reduce the impact of insufficient domestic institutions (Goedhuys & Sleuwaegen, 2016), This improves people's view of legitimate businesses. (Cuervo-Cazurra, 2016). Having such qualifications allow businesses to gain access to financial resources from banks, which opens up opportunities to grow in domestic and foreign markets (Deng & Zhang, 2018).

2.4.1 The role of internationalization on firm innovation

As mentioned in paragraph 2.4, firms have multiple options to internationalize (Johanson & Vahlne, 1990). In emerging markets, SMEs increasingly expand internationally by using exports as a modality choice. Therefore, this thesis will just focus on the effect of export by SMEs (Aulakh et al., 2000). Basically, an organization has two options when exporting, such as directly and indirectly. Exporting directly refers to a shipment directly to customers abroad, while indirectly means that a firm is asking for help of an intermediary (Peng & York, 2001). The latter is mainly used to overcome barriers in international trade and to lower costs (Bernard, Grazzi & Tomasi, 2011). Therefore, exporting might be initial an adequate way to internationalize for small-medium enterprises (Young, Hamill, Wheeler, & Davies, 1989).

Earlier studies proved that firms differ in productivity when exporting or remain to the domestic market. The differences between non-exporting or exporting firms might be explained by product innovation. Damijan, Kostevc and Polanec (2010) studied this effect by examining an increase of product innovations and processes and argued that there is a significant effect. Product innovation seems to be positively influenced when a firm begins to export (Damijan et al., 2010). Kafouros, Buckley, Sharp and Wang (2008) also argue that the degree of internationalization improves SME's capacity to develop new innovation. In other words, it seems to enhance SMEs product innovation by experience, knowledge, creation and learning. To illustrate this, internationalization will increase SMEs variety in ideas, settings and events. This enables SMEs to gain from experience, which ultimately leads to knowledge structures. As a result, a firm will be sooner able to detect unique information and thus enables them to identify and produce product innovations. SMEs may obtain different knowledge that exists in these markets (Nelson, 1993), which results in dynamic routines that at the end leads to new innovations (Kogut & Zander, 1992). Golovko and Valentini (2011) contend that export markets can promote firms learning, and thus enhance innovation performance. Additionally, it may provide access to new geographical markets with more innovative and better goods, improving export success (Golovko & Valentini, 2011). This is in line with other studies that express, it encounters growth and innovation in multiple ways.

When a firm decides to exploit new markets by exporting, it has a bigger market (Melitz, 2003). Since the return to innovation enhances in the size of the market, entering a new market by exports makes innovation more interesting (Schnitzer & Gorodnichenko, 2010). Recent studies declare that SMEs have the capacity to learn from exporting, which result in new capabilities

and ultimately in an improvement in their growth opportunities (Bayarçelik, Taşel & Apak, 2014). However, the degree of gains of exporting depends on the productivity of firms because they would be assumed to gain more from exporting. After all, the incentive to invest in exporting operations is determined by the degree of investment. In other words, when an organization invests more in innovation is will be more likely to start with exporting (Schnitzer & Gorodnichenko, 2010).

By considering export, SMEs will broaden their market and thus knowledge, which result in innovation. The degree in which firms benefit from export operations is determined by their productivity. I therefore hypothesis that when a SMEs start from scratch with exporting it will positively influence the number of innovations produced.

H4: *Internationalization positively affects firm innovation by SMEs in emerging markets.*

2.4.2. Internationalization as a moderator on the effect of corruption on firm innovation

SMEs have a significant impact on the world economy (Omer, Van Burg, Peters & Visser, 2015). They improve the efficiency in using resources, job opportunities and economic development (Audretsch, 2004). However, SMEs continuously experience major constraints, which might lead to economic and firm failure. Brink, Cant & Ligthelm (2003) reported a failure percentage from 70 to 80 due to limitations imposed by the government. As a result of these restrictions, SMEs are unable to meet their full potential.

Organizations are not determined by these constraints because they have the choice to avoid or deal with these regulations (van Burg, Podoynitsyna, Beck & Lommelen, 2012). In order to achieve organizational growth and avert local bureaucracy, a SMEs can expand geographically (Barringer & Greening, 1998). While expanding geographically, a SME will improve its accessibility of resources, broader its potential customer base and acquire more opportunities to gain resources and competencies (Zahra, Ireland & Hitt, 2000). However, when expanding, SMEs experience new challenges. Scholars support the idea that when this is the case, a SMEs should start with exporting and thereafter search for unfamiliar opportunities for growth or to explore new markets (Zahra, Jennings & Kuratko, 1999; Johanson & Vahlne, 1990).

As previously mentioned, SMEs are engaged in corruption as a reaction to inexperience with unfavourable constraints and bureaucracy (Gaviria, 2002). Cronje (2003) provided evidence

that when SMEs experience difficulties associated with formal institutions and lower bargaining power, a SMEs cannot resist the attraction to use bribes in order to get things done. They identify bribes as the solution (Cronje, 2003). However, firms internationalize toward less restrictive environments and when they do, they start exporting because of the unfamiliarity. In this case, a SME will face less restrictive and bureaucratic obstacles (Omer et al., 2015) and therefore may be less prone to pay bribes.

Furthermore, SMEs will be subjected to a variety of institutional contexts, which have an effect on firms' reaction. In the context of developed countries, SMEs will be confronted with more demanding and reputable traditions compared to their home countries. In such situations, firms may be exposed to best practices, which managers may be more likely to engage by mimetic behaviour (Greenwood, Raynard, Kodeih, Micelotta & Lounsbury, 2011). In this case, firms will adopt best practices. Moreover, these international standards and certifications would mitigate the impact of insufficient domestic institutions (Imran et al., 2020) and increase their legitimacy (Cuervo-Cazurra, 2016). When domestic institutions are seen as major obstacles and unfavourable, international standards as well as certification would encourage SME to move abroad. As a result of mimetic practices and certification, SMEs will be seen as legitimate, which enhances the ability to obtain resources. Most importantly, international certification assists in the establishment of relationships with domestic and international players, enabling companies to capitalize on resources in order to produce product developments internationally (Sui & Baum, 2014). In addition, it has been discovered that international certifications will assist emerging markets by addressing institutional voids by lowering transaction costs and improving productivity (Goedhuys et al., 2016). Thus, it can be assumed that less bribery is needed to realize product innovations produced by a SME.

Therefore, I hypothesis that when a firm internationalizes it lowers the degree of corruption being used by SMEs in order to realize more product innovations within a firm.

H5: *Internationalization will negatively moderates (weaken) the effect of corruption on firm innovation by SMEs in emerging markets.*

2.5. Conceptual model

In figure 1, I will illustrate the relationships and directions of the core concepts: product innovation, corruption, institutional quality and internationalization. As a result, a conceptual model is made and visualized.
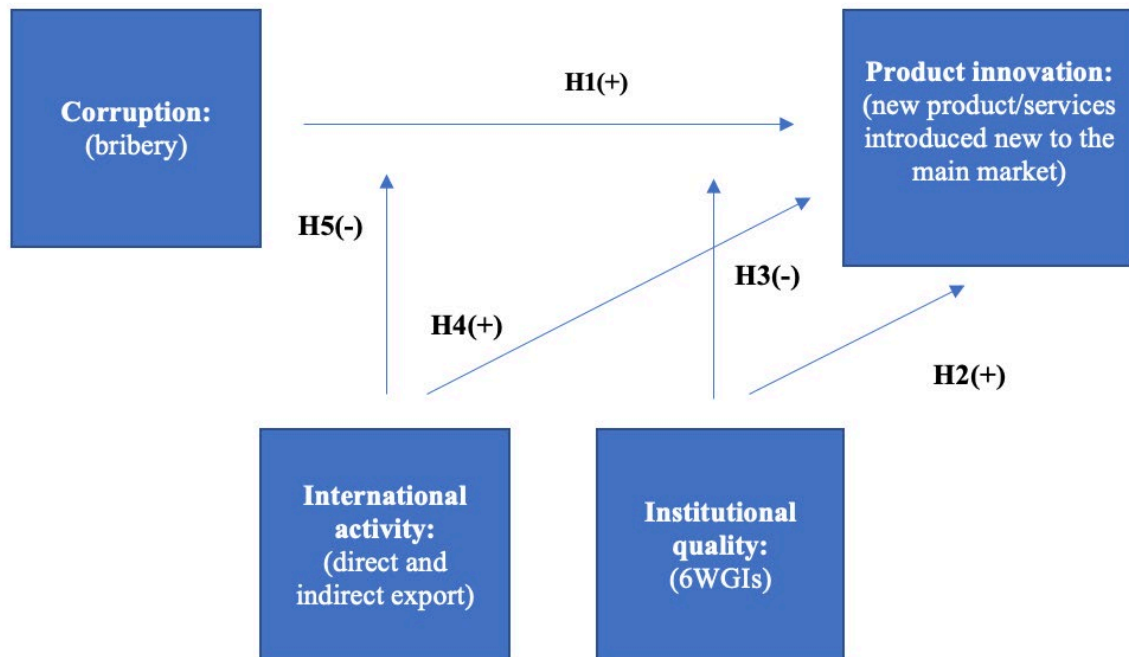

Figure 1: Conceptual model

Chapter 3 - Methodology

This chapter will discuss the methodology. Initially, the data collection will be further elaborated, whereas the sample will be discussed next. As follows, the variables will be discussed regarding the operationalization as well as their measurement. Finally, the most appropriate analytical tool will be elaborated on and the research ethics regarding this thesis.

3.1 Data collection and sample

The Enterprise Surveys Indicator descriptions of the World bank will be used to test adequately formulated hypotheses in chapter two. This database focuses on a huge number of indicators that can either help or hurt businesses that play a major role in whether or not a country succeeds in a business environment. The World Bank database provides information about 169,000 small, medium or large companies over 146 countries across the entire globe, which is gathered by qualitative and quantitative ways. Data within this database is divided into multiple topics such as infrastructure, trade, finance, regulations, taxes and business licensing, corruption, crime and informality, finance, innovation, labor and perceptions about obstacles to doing business (World Bank Group, 2017).

I will explicitly focus on small-medium enterprises, which are classified from 5 to 99 employees. This boundary from 5 to 99 employers is drawn due to the fact that these SMEs are at the highest risk of being involved with corruption (Wellalage et al., 2019) Wellalage et al., (2019) and Werner, Rabl, & Best (2019) both used this range for conducting their investigation, which thus implies that this range is appropriate. An additional scope for this thesis will rely on emerging markets worldwide. Emerging markets are considered as low income with rapid growth countries (Marquis & Raynard, 2015). The Morgan Stanley Capital International (MSCI) classified emerging markets based on a widely diversified index including capitalisation-weighted indices (MSCI, 2020). As a result, MSCI divided 27 emerging markets, which are illustrated in table 1. However, the FTSE Emerging Index providers investors incorporates also a wide range of indexes, such as the world's investable market capitalisation index (FTSE, 2021). Both indexes are commonly used by several scholars (Arnold & Quelch, 1998; Bekaert & Harvey, 2002; Blitz, & Huij, 2012), but when both indexes are compared, they differ in the number of emerging markets (FTSE, 2021; MSCI, 2020). Namely, Argentina, South Korea, Poland, Peru are not classified as emerging market by FTSE and FTSE included Romania in the list (FTSE, 2021; MSCI, 2020). MSCI incorporates more countries as emerging countries and therefore is decided to ignore the FTSE index.

Continent(s):	Emerging countries:
America	Argentina, Brazil, Chile, Colombia, Mexico, Peru
Europe, Middle East & Africa	Czech Republic, Egypt, Greece, Hungary, Kuwait, Poland, Qatar, Russia, Saudi Arabia, South Africa, Turkey, United Arab Emirates
Asia	China, India, Korea, Indonesia, Malaysia, Pakistan, Philippines, Taiwan, Thailand

Table 1: Emerging markets (MSCI, 2020)

3.2 Variables

In this paragraph, the variables presented in figure 1 will be explained in detail. Moreover, an elaboration will be given in which way these core variables will be measured and operationalized. In table 2 a final overview will be presented as clarification.

3.3.1 Dependent variable

3.3.1.1 Firm innovation

As previously mentioned, innovation is a prominent subject in the academic literature. However, scholars provide various numbers of definitions regarding innovation, which means that innovation can be measured in several ways. Atiase & Dzansi (2020) argues that product innovation is the most crucial for a firm's survival, growth and profitability, especially for organizations in emerging markets. Product innovations produced by an organization are according to Salavou (2004) an adequate proxy to measure firm innovation. Thus, the variable will be measured by item (h1) *the percent of SMEs that introduce a new product or service.* This question is examined by providing three answering possibilities to respondents, such as yes, no and do not know. In the Enterprise Survey of the World Bank is 'yes' indicated as 1, 'no' is marked as 2 and if respondents do not know when a new product or service is introduced, they answer 'do not know' indicated as -9 (World Bank, 2017). This described data will be derived from the World Bank Enterprise Survey database.

3.2.2 Independent variables

3.2.2.1 Corruption

As mentioned in chapter two, does corruption consist of several components, which can be measured by several proxies. Bribery remains the most common factor comparable to various aspects of corruption, which is used to get things done via permits, certification or licenses

(Uhlenbruck et al., 2006). Mainly, a large extent of academic literature did use bribes as a measurement for corruption within SMEs in emerging markets. Indicating that using bribes as a proxy, is an adequate way to operationalize corruption. So, to analyse the variable corruption carefully, proxy bribery will be used, whereas data from the world bank database will be taken. This data is indicated with the item (j7a & j7b) *''as the percent of firms expected to give gifts to public officials (to get things done) with regard to customs, taxes, licenses, regulations and services etc''* (World Bank, 2017, p26). Regarding this question, respondents had the freedom to openly provide a percentage of the total annual sales paid as informal payments to public officials. Other options were: 'no payments or gifts are paid', do not know and refusal (spontaneous). The open question 'in percentage' is indicated as j7b, 'no payments or gifts are paid' is marked as 0, when respondents do not know if informal payments have been paid is indicated as -9 and a refusal as -8.

3.2.2.2 Institutional quality

In chapter two is stated that this thesis will incorporate institutional quality on product innovation by taking into account rule of law, regulatory quality, and government policies to control corruption (Barasa et al., 2017; Lee & Law, 2017). Barasa et al., (2017) indicates that rule of law consists of the indicators percent of firms identifying the courts (h30), political instability (J30e), crime, theft and disorder (i30) are major constraints. These items can be considered as an ordinal scale given that each item is measured by a four-point Likert Scale ranging from (0) no obstacle, (1) minor obstacle, (2) moderate obstacle, (3) major obstacle and (4) very severe obstacle. When respondents do not have any idea of the answer, they can choose the answer 'do not know' indicated as -9. Finally, respondents can choose 'does not apply', which is indicated as -7.

Barasa et al., (2017) argues that operationalize regulatory quality can be operationalized by four indicators, such as the percent of firms who identify (j30a) tax rates, (j30b) tax administration, (j30c) licensing and permits and (g30a) access to land as major constraints. Each of these items is measured by a four-point Likert Scale ranging from (0) no obstacle, (1) minor obstacle, (2) moderate obstacle, (3) major obstacle and (4) very severe obstacle. When respondents do not have any idea of the answer, they can choose the answer 'do not know' indicated as -9. Finally, respondents can choose 'does not apply', which is indicated as -7. In sum, this question asked in the survey is of an ordinal measurement level.

According to Barasa et al., (2017) can control of corruption be measured by ''*the percent firms believing the court system is fair, impartial and uncorrupted (h7a)*'' as well as *the percent of firms identifying corruption as a major constrain* (j30f)''. These items are also measured by a Likert scale ranging from (0) no obstacle to (4) very severe obstacle.

As prior mentioned, does institutional quality encompasses nine items that are measured with Likert scales. To assess these items, factor analysis will be conducted, which will be used in order to reduce multiple items into a singular factor. This seems to be an adequate analytical technique tool to conduct, given that Asongu and Nwachukwu (2016) used the same technique in order to find the underlying structure. To use this factor afterwards in different statistical techniques, a summated scale will be conducted. This choice is based on the fact that it reduces the measurement error by using various items and that it has the ability to represent the multiple aspects of a concept in one measure (Hair, Black, Babin, & Anderson, 2014). Most importantly, these variables are easier to use for conducting a prediction-oriented research (Blazevic, 2020). By creating a summated scale, the variable can be used in the logistic regression analysis, described in paragraph 3.3.

3.2.2.3 Internationalization

As previously indicated, will this thesis just focus on exporting to various countries. To assess whether internationalization does affect the main effect of corruption and product innovation produced by SMEs in emerging, this variable will be operationalized. However, scholars argue that there are many ways to operationalize or measure internationalization. Exporting is usually the initial way to internationalize. In this case, SMEs start having collaboration with partners, where products will be exported. Thus, Kafouros et al., (2008) and Xie et al., (2016) did measure internationalization with the percent of foreign sales towards partners or different countries. Following these researchers, can exporting be measured by (d3c and d3b) ''*the percent of foreign sales towards partners or different countries*'' and therefore making this an adequate proxy to assess this variable (Kafouros et al., 2008; Xie et al., 2016). By asking this question, respondents were asked to provide a percentage of total national sales, indirect exports and direct export, which is indicated as d3c. the 'do not know' option is marked as -9.

Similar as discussed for the institutional quality variable, will a factor analysis also be conducted to develop one singular composite measure (Hair et al., 2014). This factor will be also transformed to summated scales due to the fact that this will be used for a predictive

research method, such as logistic regression analysis. Conducting a factor analysis is allowed, given that these variables are considered as scale measurement level (Hair et al., 2014)

3.2.3 Control variables

The first control variable which will be used in the analysis is indicated as 'firm size'. It can be argued that larger firms possess more knowledge, money and sales, which leads to more innovation among the company (Roger, 2004). On the other hand, some studies indicate that small-medium enterprises will be sooner able to recognize opportunities. This means in general that size in firms affects the dependent variable. Therefore, firm size in ''number of employees'' will be taken into account as control variable (Rogers, 2004). This data will also be derived from the world bank database, which can be gathered by the item (a6a) ''*sampling size*'' to assess differences between small, medium and large enterprises (World Bank, 2017). Rogers (2004), Barasa et al., (2017) and Robson, Haugh & Obeng (2009) also reveal that R&D budget of an organization has an effect on product innovation produced. Therefore, we include a second control variable in our analysis by taken item (h8) ''*the percent of firms that spend on R&D* (World Bank, 2017).

Besides, the type of *industry* will be included in the analysis based on the fact that the type of industry influences the extent of innovation within firms. Meaning that the numbers of product innovations produced by a SME can differ among industries in emerging markets (Allred & Swan 2005). The World Bank database encompasses various types of industries, which separate manufacturing, retail and other sectors which can be assessed by item (a0) (World Bank, 2017). Moreover, extant literature indicates that foreign ownership and domestic ownership differ in terms of realizing innovation (La Porta, Lopez- de- Silanes, & Shleifer, 2002). Roger (2004) and Falk (2008) argue that foreign ownership generates more innovation due to the fact that it has more financial resources, knowledge and technology. Therefore, foreign and domestic ownership will be taken as control variable. This can be analysed by item (b2b) *proportion of private domestic / foreign ownership in a firm* (%). Besides, does Barasa et al., (2017) reveal that managerial experience enhances innovation and will be therefore included as a control variable. This can be measured by item (b7) ''*Years of the top manager's experience working in the firm's sector*'' (World Bank, 2017)

Variables:	Definition:	Operationalization:	Hypothesis:
Dependent variable: Firm innovation	*The multi-stage process whereby organizations transform ideas into new-improved product, services or processes, in order to advance, compete and differentiate themselves successfully in their marketplace* (Baregheh et al., 2009, p1334)	''*Percent of firms that introduced a new product and service*'' (World Bank, 2017).	
Independent variables: Corruption	''*the misused of public power for private benefit in an illegal fashion*'' (Mauro, 1995, p25*).*	''*percent of firms expected to give gifts* (World Bank, 2017).	**H1 (+)**
Institutional quality	'*'the traditions and institutions by which authority in a country is exercised'* (Kraay et al., 2010, ′p222). *Exports*	*Firms who identify tax rates tax administration, licensing & permits and access to land as major constraint (Barasa et al., 2017), rule of law and control of corruption*	**H2 (+)** **H3 (-)**
Internationalization		''*The proportion of total sales that is exported directly as well as indirectly (World Bank, 2017).*	**H4 (+)** **H5 (-)**
Control variables: Firm size		*Small, medium & large firms*	
R&D		*Firms' spending R&D*	
Industry		*Manufacturing, services and other firms*	
Type of ownership		*proportion of private domestic or foreign ownership in a firm (%).*	
Managerial experience		*Years of the top managers' experience working in the firm sector's*	

Table 2: overview operationalization variables (World Bank, 2017)

3.3 Method(s) of analysis

In chapter two several hypotheses were formulated, which will be assessed by a logistic regression analysis. This statistical tool allows us to predict a binary dependent variable rather than investigating the metric dependent variable (Hair et al., 2014). This statistical tool is only allowed when the dependent variable has a nominal measurement level. The dependent variable *'introduced product innovations'* can be considered as a nominal measurement scale because it just consists of dichotomous answers. The independent variable is indicated as a nominal measurement scale as well. The moderators 'institutional quality consists of a categorical measurement level. (Hair et al., 2014). Finally, the internationalization variable is a metric variable which is also suitable. Thus, it can be concluded that the logistic regression analysis is an appropriate statistical tool to assess whether formulated hypotheses are significant or not (Hair et al., 2014).

In order to assess whether the independent variable is explained by the included dependent variables such as bribery, institutional quality and internationalization, the following equation will be used:

$$Logit_i = \ln\left(\frac{prob_{event}}{1 - prob_{event}}\right) = b_0 + b_1 X_1 + \cdots + b_n X_n$$

or

$$Odds_i = \left(\frac{prob_{event}}{1 - prob_{event}}\right) = e^{b_0 + b_1 X_1 + \cdots + b_n X_n}$$

Table 3: Equation of logistic regression analysis (Hair, 2014, p322)

When the variables of this thesis will be incorporated in the above equation, the formulated equation can be viewed as follows:

$$Product\ innovation\ (Y) = \frac{1}{1 + e^{\substack{-(b_0 + b_1 CORRUPTION_i + b_2 INSTITUTIONAL\ QUALITY_i + b_3 INTERNATIONALIZATION_i \\ + b_4 SiZE_i + b_5 RD_i + b_6 INDUSTY_i + b_7 OWNERSHIP_i + b_8 MANAGERIAL\ EXPERIENCE)}}}$$

Hair et al., (2014) suggest that a logistic regression analysis requires a larger sample size than 400. As described in paragraph 3.1, consists of the World Bank database of more than 400 samples. In sum, conducting a logistic (binary) regression analysis is an adequate statistical tool to assess different relationships within this thesis.

3.4 Research ethics

Data to conduct this thesis will be derived from the Enterprise Surveys Indicator of the World Bank database. This data is collected by private contractors of the World Bank, which means that extant data from the World Bank is not impacted by the researcher. To ensure the integrity and the confidentiality of the database, the World Bank imposes a Confidentiality Agreements, which users' have to comply to. It can therefore be concluded that no harm is done to the respondents. In addition, the World Bank database acknowledges that information is gathered in a responsible way and ethically.

While conducting this thesis, I will declare that the data as well as the result will not be manipulated. Data will be cleaned and therefore inaccurate or invalid data will be precluded from the results. This results in a clean data set, which needs to be stored safely and accessible for those who would like to check the conducted analysis. The clean data set will be stored in Surfdrive cloud storage, which ensures multiple backups including advanced access control (Radboud University, n.d.). In this way, the data will not be accessible for everyone, who might be willing to harm the provided data. Additionally, several passwords will be used in order to protect stored data. However, data can be sent to those who want to check the analysis regarding this thesis.

Chapter 4 - Results

This chapter will discuss further the executed analysis regarding this thesis. Firstly, the sample description and the missing values will be discussed in detail. Afterwards, the assumptions and the factor analysis itself. The same will be done for the logistic regression analysis, whereas assumptions will be discussed first and later the results. Corresponding to these results previously formulated hypotheses in chapter 2 will be assessed whether they can be confirmed or rejected. All the analyses are displayed in appendix A, B, C and D.

4.1 Sample description

As previously discussed, 27 countries were classified as emerging markets. Ramamurti (2012) argues that emerging markets adjust at a rapid pace. As a result, data from 2018, 2019 and 2020 were extracted from the World Bank database to have an as homogeneous sample as possible. This means that just eight countries were compounded in the database and that, for instance, Chile (2010) and India (2014) are not taken into consideration regarding this thesis. The entire World Bank database consists of 169.938 respondents. Nonetheless, after excluding the large enterprises and several countries, the database just encompassed 8153 small medium enterprises ranging from 5 to 99 employees among eight countries. Most of these small medium enterprises are located in Egypt, which counts for 32.1 percent of the entire sample. 58.3 percent of all small medium enterprises operate in the manufacturing sector and the remaining enterprises operate in the service or in other industries. An overview is shown in table 4.

Country	Number of SMEs
South Africa	785
Turkey	1252
Russian Federation	923
Poland	1065
Czech Republic	391
Hungary	669
Egypt	2618
Greece	450
Total:	8153

Table 4: Overview selected countries

4.1.1 Missing data

As in previous paragraph elaborated does the sample consist of 8153 small medium enterprises across different emerging market countries (table 4). However, this data consists of some missing data, which is more than 10 percent by the items h7a, h30, j30b and h8 (table 5). Field (2013) argues that this is not certainly a problem as long as they are ''missing completely at random''. However, data revealed to be missing not at random, which might affect the theoretical value of the results and therefore further deletion or imputation is necessary.

Variable	N	Missing	Percentage:
Product innovations	8116	37	.5
Bribery	7375	778	9.5
Obstacle; corruption	7377	776	9.5
Court fair, impartial and uncorrupted	7063	1090	13.4
Obstacle; courts	7210	943	11.6
Obstacle; crime, theft and disorder	7917	236	2.9
Obstacle; political instability	7755	398	4.9
Obstacle; tax rates	7985	168	2.1
Obstacle; tax administration	7678	340	4.2
Obstacle: business licensing and permits	7041	475	5.8
Obstacle: Customs and trade regulations	8018	1112	13.6
Sales: indirect exports	8018	135	1.7
Sales: direct exports	8017	136	1.7
R&D	524	7629	93.6
Owned by private foreign individuals	8059	94	1.2
Managerial experience	7996	157	1.9

Table 5: Description data

Field (2013) and Hair et al., (2014) propose several deletion possibilities such as deletion of rows (listwise), pairwise deletion, deletion columns. Nevertheless, deletion of data is just recommended by fewer missing data of ten percent and thus not adequate options for solving missing values (Field, 2013; Hair et al., 2014). Imputation would be a more sufficient solution to deal with missing data and, thus, multiple imputation is chosen. BMJ (2009) defines the multiple imputation method as ''*allow for the uncertainty about the missing data by creating several different plausible imputed data sets and appropriately combining results obtained from each of them''*. The multiple imputation is determined based on the fact that it employs the actual relationship between variables and that it uses a unique set of predictors for each variable with missing data. Lastly, this imputation method encompasses the replacement of missing data based on an observation's own values on other variables (Hair et al., 2014).

As indicated by BMJ (2009) does this imputation method leads to a new dataset, which needs to be elaborated first. At this point, the new dataset encompasses 8153 N with no missing values present in the data. This data would be adopted regarding the analysis of several relationships.

Finally, the bribery variable encompasses items j7a and j7b and were combined together to incorporate both items together. Respondents were allowed to answer just one variable and, therefore, this method is chosen to take both into account. This resulted in a recoded item: 0 = no bribery and 1 = uses bribery.

4.2 Principal component analysis

This section encounters a principal component analysis (PCA) to identify underlying structures for institutional quality and internationalization, whereas it at the same time reduces data within this study (Field, 2013). A principal component analysis is certainly the most appropriate technique to realize this because it mainly focuses on the data reduction and explaining the variance of cluster variables (Hair et al., 2014). However, similar to other analytical techniques some assumptions must be met before a PCA can be conducted. So, (1) KMO needs above .50, (2) Bartlett's test must be significant, (3) communalities larger than .20, (4) cross loaders bigger than .20 (5) Cronbach's alpha test needs to be at least above .70 (Hair et al., 2014). The entire analysis is disclosed in appendix A and B.

4.2.1 Assumptions PCA

The Kaiser-Meyer-Olkin (KMO) test displays a value of .892, whereas Bartlett's test represents a significant result. Meaning that each composite score loads on a particular factor (Field, 2013). Similar to both tests do all communalities meet the requirement of having a greater value of .20. In the context of rotation, is orthogonal rotation (varimax) used because this rotation should be used when variables do not correlate strongly with each other (Field, 2013). In other words, factors correlated less than .30. At this stage, Field (2013) assumes that orthogonal rotation must be used to effectively rotate factors. As demonstrated in appendix A, does the PCA not involve any cross loaders because they are bigger than .20 absolute.

4.2.1 Factor scores

Having reached an acceptable solution, factors can be taken into consideration (appendix A). As disclosed in the analysis, the first eight items load on factor one, whereas the item ''*fair court*'' loads on the second factor and both items from export on the third factor. However, all nine items for institutional quality were taken into account based on the theoretical substantiation of Barasa et al., (2017). Nonetheless, after running the reliability test of Cronbach's alpha, it was decided to eliminate item ''*fair court*'' to increase internal validity. Meaning that eight items were computed as a single variable for institutional quality (appendix B). Although the Cronbach's alpha of the export items were low, these were combined as one single variable 'internationalization'. This was decided based on the fact that current literature recognizes both items as a single variable (Kafouros et al., 2008; Xie et al., 2016).

4.3 Assumptions logistic regression analysis

As discussed in chapter three is the logistic regression analysis the most appropriate analytical technique to explore different relationships within this thesis. However, it is worth noting a couple of assumptions before carrying out a logistic regression technique (Field, 2013). So, (1) the dependent variable must be dichotomous scaled, (2) the sample size, (3) independence of the observations, (4) presence of multicollinearity and (5) the linearity of the independent variables and the log odds were assessed (Field, 2013; Hair et al., 2014). When these premises are met, a logistic regression analysis can be carried out.

4.3.1 Multicollinearity

As a larger extent of predictors will be incorporated in the logistic regression analysis, the chance that predictors heavily correlate increases. However, this should be avoided at all times. (Field, 2013). SPPS provides a few possibilities to assess multicollinearity. A first expression can be gathered by running a correlation matrix. At a correlation level of .80 and .90, multicollinearity might be involved. Table 6 demonstrates these correlations and indicates that no multicollinearity is present in the data based on the fact that the highest correlation .103 between internationalization and product & services innovations and the lowest -.005.

Table 6: correlations

Pooled:	Product & service innovations	Bribery	Institutional quality	Internationalization
Product & service innovations	1			
Bribery	.064**	1		
Institutional quality	-.005	.023*	1	
Internationalization	.103**	-.004	.066	1

** Correlation is significant at the 0.01 level (two-tailed)

* Correlation is significant at the 0.05 level (two-tailed).

Field (2013) argues that this is the less sufficient method to assess multicollinearity. Another option would be the variance inflation factor (VIF) and tolerance statistics, which exposes the relationship between multiple predictors. Field (2013) and Hair et al., (2014) both indicate that the VIF-score should be larger than 10 and the tolerance under .1. Appendix C shows that the lowest VIF score is 1.043 and tolerance of .150 among all variables included in the multiple regression model.

4.3.2 dependent variable

Hair et al., (2014) and Field (2013) both indicate that the dependent variable must incorporate a dichotomous scale. As demonstrated in chapter three, consist the dependent variable ''new product and services introduced over last three years'' of a dichotomous scale, which respondent could answer by choosing yes or no. So, it can be concluded that this assumption is met.

4.3.3 Sample size

One aspect that constitutes differences between the logistic regression analysis and other analytical techniques is the use of maximum likelihood (MLE) (Hair et al., 2014). As a result of the MLE, a bigger sample is required, such as 400 (Field, 2013). Since the sample consists of at least 8116 valid cases (table 5) and after the multiple imputation of 8153 cases, it can be concluded that this assumption is met.

4.3.4 Linearity of independent variable(s) and log odds

An additional logistic analysis is conducted including the log odd (appendix c). The Box-Tidwell test is used to assess this assumption and must be carried out by categorical variables (Hair et al., 2014), which is thus in this case the computed variable 'institutional quality'. Model five incorporates this Box-Tidwell test by containing the variable *'Insitutional_LN'* (appendix C). According to Field (2013) must this variable encompass an insignificant result. As shown in model five reveals the variable *'Insitutional_LN'* a p .131, whereas it can be concluded that this displays an insignificant result. In sum, this assumption is met.

4.4 Descriptive statistics

An initial impression can be gained by running a descriptive analysis, which incorporates the minimum and maximum score, mean, standard deviation, skewness and the kurtosis (table 7). At that point, it can be assessed whether some variables are skewed or have a too wide kurtosis. The entire overview is shown in table 7.

Table 7: Descriptives

	H1	**Bribery**	**Inst. quality**	**Internationalization (CUBEROOT)**	**Managerial experience**	**R&D**	**Industry**	**Foreign owned**
Sample	8153	8153	8153	8153	8153	8153	8153	8153
Mean	.11	.0271	1.2644	.5153	20.65	.43	1.71	.0367
Median	0	0	1.1250	.00	20	0	1	.00
Mode	0	0	0	.00	20	.00	1.00	0
STD	.314	.16240	.92848	1.05968	11.274	.496	.893	.1879
Skewness	2.481	5.710	.464	1.793	.584	.299	.594	4.963
Kurtosis	4.158	30.645	-.683	1.674	-.049	-1.907	-1.483	22.674
Minimum	0	0	0	.00	1	0	1	0
Maximum	1	1	4	3.68	65	1	3	1

The variable '*internationalization*' encompasses a ratio scale, which respondents could answer by giving a percentage in terms of their direct and indirect exports. The original variable internationalization has a skewness of 3.9929 and a kurtosis of 3.017, which exceeds the threshold of skewness +3 between -3 and kurtosis +3 between -3 (Field, 2013). As a consequence, this variable has been transformed by cube root and led to a new skewness of 1.793 and a kurtosis of 1.674. This falls in the range of the supposed range for skewness and kurtosis. The transformation to cube root is chosen because other transformations, such as log transformation, square, square root revealed a less sufficient result. Institutional quality incorporates a skewness of .460 and kurtosis -.688 and thus falls in the range. The next metric scale variable managerial experience encompasses a kurtosis .270 and skewness of -1.928 and this is again sufficient. Other variables such as items (h1) ''product and service innovations'', bribery, foreign-owned, research and development budget, sector consist of non-metric scales, whereas normal distribution is no issue (Field, 2013). Because Hair et al., (2014) indicate that the skewness and the kurtosis both do not make any sense for non-metric variables and therefore will be originally added in the data as shown in table 7. The entire overview of each variable is displayed in table 5.

4.5 The logistic regression analysis

The logistic regression analysis is structured on the principal of parison in the context that the model includes three possible predictors bribery, institutional quality and internationalization (Field, 2013). The first model encompasses the control variables, such as research and development, domestic & foreign ownership, managerial experience and industry. The second model incorporates the main effect of bribery on product and service innovations. Model three will be extended by adding up the moderators and the last model covers the interaction terms. For each model is an *omnibus tests of model coefficient* run to assess whether the overall model fits and how many variances are explained. As shown in table 8 and appendix D is each Omnibus tests of model coefficients significant, whereas the explained variance increases one by one. Underneath the model summary, is the Hosmer and Lemeshow test (HLT) shown, which determines if the model is appropriate. Table 8 demonstrates that every test is significant, meaning that every model fits sufficiently with the data (Field, 2013).

Model:	Hosmer and Lemeshow test – significance
1	.990
2	.950
3	.379
4	.250
5	.553

Table 8: Overall goodness and fit

Next, for assessing the significance of various outcomes between relationships, the probability value (p-value) is used. In this thesis, a p-value of less than .050 is considered significant. In terms of a single expected direction (positive or negative), the p-value indicated by SPSS is divided by two (Hair et al., 2014). In addition, the directionality of the relationship is assessed by the Direction of Exponentiated Coefficients (exp b). The exp (b) is chosen because ' *the original logistic coefficients are less useful in determining the magnitude of the relationship''* (Hair et al., 2014, p327). However, the exp (b) as b-coefficient in log-odds must be interpreted differently compared to the original b-coefficient, meaning that an odds ratio >1.0 expresses a positive effect, whereas an odds ratio <1.0 reveals a negative direction (Hair et al., 2014, p326).

The control variable 'sector' demonstrates a significant level of .005 with an exp (b) of .713 for retail services and for other services .001 with an exp (b) .724 compared to SMEs who operate in the manufacturing sector. This means that SMEs who operate in the manufacturing sector are the most innovative in the context of introducing new products, followed by the SMEs who

operate in the other services. SMEs in retail services seem to be the less innovative. The services were analysed separately by including dummies, because chapter 3 indicated that the number of innovations differ across various services and industries (Allred & Swan, 2005). Secondly, the budget of research and development found at all dummies the same significant level of .000 with an exp (b) 1.753, meaning that when SMEs increase its research and development budget, it will be more innovative in producing new products or services. South Africa revealed a significant level of .005 with exp (b) 1.828, while in other countries a significant level of .000 is found. SMEs in Czech Republic were revealed to be the most innovative and SMEs from Egypt produce the lowest innovations. Managerial experience represents a significant level of .001 with an exp (b) of 1.014, which thus means that when SMEs have more managerial experience, they produce more product and service innovations. For the last control variable 'ownership' is stated a significant level of .047 with an exp (b) 1.357. In other words, foreign ownership SMEs produce more product and service innovations than domestic or private SMEs.

The second model demonstrates that bribery has a significant level of .006 with an exp. (b) of 1.762 on product innovations produced by SMEs (appendix D). It can thus be concluded when SMEs apply bribery, SMEs will be 76.2% more innovative in terms of product or service innovations. Model three shows a significant level of P.039 exp (b) of .904 regarding institutional quality. Based on these outcomes, it can be said that a better institutional quality decreases the product innovation introduced by 9.4% of SMEs. Internationalization indicates a significant level of P <0.001 with an exp (b) of 1.190. In sum, when SMEs internationalize, the product and service innovations introduced will soar by 19% related to the exp (b) of 1.190.

Lastly, model four represents the interaction effects of institutional quality and internationalization. This model shows that two interaction effects are significant. One of these is the interaction effect of institutional quality on bribery which has a significant level of .0445 with an exp (b) of 1.550. This result assumes that the effect of bribery on firm innovation is strengthened by institutional quality, which is in this case counter-intuitive compared to formulated hypotheses in chapter 2. In other words, SMEs will create more product innovation via bribery when the institutional quality is high. The interaction effect of internationalization shows a significant level of .0475 with an exp (b) of .758. Strictly speaking, when SMEs internationalize, the original effect of bribery on product innovation attenuate. Thus, these innovations will be less affected by bribery when SMEs internationalize.

Table 9: Overview output logistic regression analysis

Dependent variable: H1	Model 1:		Model 2:		Model 3:		Model 4:	
Rsquare	.171		.174		.182		1.83	
Chi-square	733.215		744.274		778.757		782.978	
	Exp (B)	**Sig.**	**Exp (B)**	**Sig.**	**Exp (B)**	**Sig.**	**Exp (B)**	**Sig.**
Constant	.023	.000	.022	.000	.023	.000	.024	.000
Size	.823	.021*	.839	.027	.892	.153	.895	.169
Retail service	.713	.005*	.717	.006	.819	.107	.816	.104
Other service	.724	.001**	718	.000	.776	.008	.773	.007
Managerial experience	1.014	.000**	1.014	.000	1.013	.001	1.013	.001
Foreign owned	1.357	.094*	.091	.1.362	1.109	.764	1.101	.611
R&D-budget	1.753	.000**	1.770	.000	1.759	.000	1.756	.000
South Africa	1.828	.005**	1.861	.004	1.642	.023	1.625	.026
Turkey	2.127	.000**	2.168	.000	2.080	.000	2.083	.001
Russia	4.885	.000**	4.800	.000	4.669	.000	4.566	.000
Poland	7.213	.000**	7.322	.000	7.067	.000	7.059	.000
Czech Republic	14.330	.000**	13.382	.000	11.158	.000	11.305	.000
Hungary	6.524	.000**	6.579	.000	5.294	.000	5.243	.000
Greece	9.635	.000**	9.516	.000	9.027	.000	8.999	.000
Bribery			1.762	.006*	1.825	.004	1.166	.733
Institutional quality					.904	.039*	.892	.020
Internationalization					1.190	.000**	1.201	.000
Bribery by institutional quality							1.550	.089*
Bribery by internationalization							.758	.095*

** Significant at the 0.01 level

* Significant at the 0.05 level

In sum, the logistic regression analysis revealed five significant effects. However, the results for institutional quality were both counter-intuitive compared to the expected formulated hypotheses in chapter two. As a result, three out of five hypotheses can be accepted, whereas two are rejected. An overview is given in table 10 and the entire logistic regression analysis is disclosed in appendix D.

Hypotheses	*Exp (b)*	%	Sig.	Accepted / Rejected
Corruption: H1 – Bribery on firm innovation	1.762	+76.2	.003	√
Institutional quality H2 – Institutional quality on firm innovation H3 – Bribery X institutional quality on firm innovation	.904 1.550	-9.4 +55	.019 .044	χ χ
Internationalisation H4 – internationalization on firm innovation H5 – Bribery x internationalization on firm innovation	1.190 .758	+19 -24.2	<.001 .047	√ √

Table 10: Overview hypotheses testing

Chapter 5 - Discussion

This chapter will discuss the main, moderation and control effects in greater detail. In addition, outcomes will be related to extant inquiries for similarities and differences, whereas negative, positive and surprising effects will be elaborated comprehensively.

5.1 Main effects

The main effect(s) encompasses bribery, institutional quality and internationalization on SMEs firm innovation. Each relationship is described separately, including its degree of direction

In chapter two was demonstrated that corruption would positively impact SMEs' number of introduced product and service innovations in emerging markets. Bribery revealed to be positively influence SMEs' firm innovation. So, it can be concluded that when SMEs apply bribes, SMEs enhance the number of product and service innovations introduced in emerging markets. It is possible that SMEs who adopt bribery are better able to overcome bureaucratic obstacles compared to those who are behaving in an ethical manner while realizing firm innovation (Krammer, 2019; Hitchen et al., 2017; D-Este et al., 2012). Furthermore, bribery may provide easier access to restricted decision-making processes, whereas it less consumes resources, which can thus be used for firm innovation. This may mean that SMEs who use bribes (Chryssochoidis & Wong, 1998) could have more resources to actually realize firm innovation compared to who do not utilize bribes (Leff, 1964). In addition to other explanations, could it be the fact that SMEs use bribery as a shield for unfavourable changes imposed by institutions. In this way, SMEs will not be affected by political changes. Darendeli and Hill (2016) assume that this enhances SMEs' firm innovation.

As indicated by previous scholars, it was forecasted that high institutional quality would increase SMEs' number of introduced product and service innovations in emerging markets. They assumed that a well-established institution reduces the risk faced by SMEs and provides sufficient support for firm innovation (van Waarden, 2001; Wang et al., 2019; Lee & Law, 2017). Nevertheless, results indicated that institutional quality negatively relates to SMEs' firm innovation in emerging markets. So, this thesis interestingly demonstrates that a high-quality institution decreases the SMEs' number of introduced product and service innovations in emerging markets, which is counterintuitive compared to prior research. A justification for this negative effect of institutional quality on SMEs' firm innovation might be that institutions have a major impact on resources spent by a firm on innovation. Scholars indicate institutional

assistance as critical for directing resources to particular areas and redirecting them from failing to being successful (Edquist & Johnson, 1996). So, it can be seen as an essential factor for realizing product and service innovations in emerging markets (Verheul et al., 2002 El-Namaki, 1998; Baumol, 2002). Nonetheless, when SMEs operate in environments with high-quality institutions, they experience higher requirements for gaining actual support of institutions in terms of resources (Hsu et al., 2012). These resources are necessary due to the fact that SMEs have fewer resources available compared to larger firms (Hitchen et al., 2017) As a result, they will not be capable to realize product innovations due to the lack of resources by institutions. This discourages firm innovation of SMEs in emerging markets (Hsu et al., 2012)

As previous studies assumed, was forecasted that the internationalization of SMEs would enhance the number of product or service innovations introduced by SMEs. This postulated relationship can be accepted due to the fact that this thesis indicates that internationalization significantly and positively influences SMEs' firm innovation. This basically means that when SMEs internationalize their product and service innovations introduced increase. A well-known explanation for this improvement could be that SMEs gather new experience, knowledge while exporting internationally (Kogut & Zander, 1992). As a result, SMEs are capable of creating new knowledge structures, whereas it generates more ideas which eventually lead to more product innovations (Kafouros et al., 2008) A different perspective for the increase in innovations is that SMEs who internationalize broadens their market in size and resources. This outcome may lead to a bigger incentive and thus increase its motivation to realize innovations (Golovko & Valentini, 2011). A final statement is provided by Bayarcelik et al., (2014) who argue that the increase is derived from the new capabilities as a consequence of internationalization. These capabilities will lead to more product innovations produced by SMEs

5.2 Moderating effects

This paragraph incorporates the moderating effects of institutional quality and internationalization on the relationship of bribery on SMEs' firm innovation in emerging markets. Each moderator is described separately, whereas the positive, negative and surprising effects will be demonstrated further in detail.

As previously discussed in chapter two, was postulated that institutional quality attenuates (weakens) the effect of corruption on SMEs' number of introduced product and service

innovations. When a debilitated relation is present, an institution is able to improve corporate innovation operations, whereas institutions can effectively mitigate bribery practices used by - SMEs (Pirtea, et al., 2019). Nevertheless, this thesis has unexpectedly found a significant and positive effect of institutional quality as moderator on the main relationship between corruption and firm innovation. As said in paragraph 5.1, could it be the fact that when the institutional quality is high, firms must confirm to stricter imposed requirements for gaining actual support of institutions in terms of resources (Hsu et al., 2012; Mahendra et al., 2015). In the context of emerging markets, SMEs already lack resources compared to larger firms (Hitchen et al., 2017). In this case, may it be more difficult for SMEs to meet those requirements imposed by institutions, whereas SMEs do not obtain permits or other approvals. The imposed requirements could be identified as obstacle because SMEs are constantly forced to negotiate and manage the limitations by various institutions (Webb et al., 2014). Xie et al., (2018) argues that SMEs can bypass these obstacles by embedding in bribery. This might be an explanation why small medium enterprises are more engaged in corruptive activities to realize innovation, while facing an environment with high institutional quality.

In emerging markets SMEs increasingly expand international by undertaking exports (Aulakh et al., 2000). This international expansion was supposed to negatively mitigate (weakens) the effect between corruption and firm innovation. Internationalization would in this case mean that SMEs who expand internationally are less engaged in bribing activities to get product and service innovations done. Looking back to the thesis, a significant and negative effect was demonstrated among the emerging markets countries. A possible justification for this effect is that SMEs face less bureaucratic restrictions due to the fact that they could avert local bureaucracy by moving international (Burg et al., 2012). In this scenario, SMEs experience less bureaucratic restrictions and therefore would be less prone to pay bribes (Cronje, 2013). This is based on the fact that firms commonly apply corruption to overcome bureaucratic obstacles (Krammer, 2019; Cronje, 2003; Hitchen et al., 2017). An addition reason for the negative (weaken) effect might be that SMEs have to comply with international standards to gain certification (Imran et al., 2020). This encourages SMEs to establish strong relationships and obtain resources, which results in legitimacy. Given that certification and international standard lead to mimetic behaviour (Greenwood et al., 2011), a SME do not have to apply corruptive behaviour in order to get things done because it is already seen as legitimate (Sui & Baum, 2014). Therefore, SMEs might be less prone to use bribery to generate product innovations.

5.3 Control variables

This paragraph encompasses firm size, research & development, industry and type of ownership, which are taken into account as control variables. Each of these variables is elaborated in terms of significant, effect and justification.

Firm innovation seems to differ among various indicators of a SME in emerging markets. In that sense, it was assumed that larger firms engender more product and service innovations than smaller firms. This thesis compasses a significant and negative effect for smaller firms compared to larger firms. Roger (2004) and Robson et al., (2009) provide an explanation for this effect, as that larger firms possess more resources and knowledge. Furthermore, larger firms will be more capable of spotting opportunities, whereafter it faster realizes innovations. Secondly, this thesis forecasted that research and development would incorporate an effect of innovation produced by a SME. This thesis found a significant and positive effect of research and development on firm innovation. In other words, when SMEs consume research and develop, they will produce more product and service innovation in emerging markets. Barasa et al., (2017) assume that this might encompasses that research and development result in new resources and competencies, which ultimately lead to more innovations introduced by a SME.

Alongside firm size and research and development was indicated that across various industries the firm innovation differs, which is confirmed by this thesis (Allred & Swan 2005). A conceivable statement for this effect could be that the dynamics within an industry can differ. Meaning that the level of market opportunities for firm innovation differs among several industries (Persaud, Wang & Schillo, 2021). Foreign ownership was expected to have larger firm innovation than domestic ownership and is confirmed with this study. Roger (2004) and Falk (2008) demonstrate that foreign ownerships possess a more comprehensive package of resources, knowledge and technology, which might be a sufficient explanation for this outcome. Finally, managerial experience was assumed to significantly and positively relate to SMEs' firm innovation. Similar to other control variables, reveals this thesis a significant and positive effect on firm innovation. In this sense, when a manager within a SME gains more experience working in a SME, it would realize more firm innovation. Barasa et al., (2017) elaborates this effect comprehensively and argues that managers lean on skills and competencies. Both will be enhanced year by year, whereas experienced managers are better capable to spot opportunities faster (Barasa et al., 2017). In sum, firm innovation might increase significantly.

Chapter 6 – Conclusion

This chapter will look back on the research question developed in the initial stage of this thesis. As stated in chapter one, encompasses this thesis the following research question:

''What is the effect of corruption on SMEs' firm innovation in emerging markets, and to what extent is this effect influenced by institutional quality and internationalization''

Despite extant IB scholars have already revealed much about corruption at country-level, enough remains unclear about the effect of corruption at firm-level (Kabadurmus & Sylwester, 2020). At firm level, multiple studies are contradictory and, therefore, more research is needed (Nguyen, 2020). In an effort to do so, this thesis revealed that corruption can definitely enhance SMEs firm innovation in emerging markets. Most of these small medium enterprises pay bribes to overcome bureaucratic obstacles, which they identify as a sufficient non-market strategy. The direct effect of high-quality institutions seems to decrease firm innovation. In contrary to the main effect of institutional quality on firm innovation, reveals this thesis that institutional quality positively (strengthen) the relationship between corruption and firm innovation. Meaning that SMEs are more likely to engage in bribes when the institutional quality is high. Furthermore, this thesis found that internationalization directly incorporates a positive effect on firm innovation. However, the moderation effect of internationalization incorporates a negative effect. In essence, when SMEs are engaged in exporting, SMEs lower their bribery activities to generate new introduced product or service innovations.

6.1 Implications

Looking back at this study, it provided some intriguing results and insights with regard to analysed relationships (figure 1). These can function as theoretical and managerial implications for the future, which will be separately elaborated underneath.

6.1.1 Theoretical implications

This thesis revealed multiple theoretical implications. Corruption was demonstrated to increase the introduced product and service innovations in emerging markets. From this point, a broad variety of scholars just provided some contradictions in terms of the effect of corruption (Krammer, 2019; Nguyen, 2020). The thesis acknowledges that corruption can promote SMEs' firm innovation in emerging markets. Meaning that product and service innovations improve when SMEs apply bribes to get things done. In particular, this thesis has helped to gain an

understanding of the positive effects of corruption for introducing new product and service innovations by SMEs in emerging markets.

In addition to the results regarding corruption, this thesis provides surprising effects in relationship between institutional quality and firm innovation. It was indicated that institutional quality would positively affect firm innovation. However, a contradiction was found in the analysis, which assumes that high institutional quality decreases firm innovation. This is a significant contribution to the extant literature because most scholars acknowledge just a positive effect on firm innovation in emerging markets (Lee & Law, 2017; Kraay et al., 2010). A similar result was found on the moderation effect of institutional quality between the relationship corruption and firm innovation. Meaning that a positive effect was expected but the opposite was found, whereas corruption is more applied for realizing firm innovation when institutional quality is high. This thesis thus shed a light on a different perspective.

The final contribution is made by expanding the academic literature about the impact of corruption beyond borders. From this point, prior scholars were unable to fully highlight the link between the effect of corruption on innovation and a firm's internationalization in emerging markets. This thesis has revealed that SMEs who move abroad via exporting are less prone to use corruption to realize new product and service innovations. This thesis, thus, revealed that SMEs will less use corruption to stimulate product and service innovations when exporting.

6.1.2 Managerial Implications

This thesis encompasses also practical relevance for managers and policymakers operating in emerging markets. It was discussed that SMEs experience a lot of problems with bureaucratic obstacles imposed by institutions to get things done (Krammer, 2019; Nguyen, 2020). This thesis reveals that managers can avert these bureaucratic obstacles by applying bribes as a non-market strategy to enhance their firm innovation in emerging markets.

In addition, Maradana, Pradhan, Dash, Gaurav, Jayakumar & Chatterjee (2017) demonstrated that firm innovation is an essential indicator for economic growth. In this sense, it can be concluded that firm innovation is essential for governments as well as firms. At this point, governments impose strict requirements for providing support to firms, which cannot be met by SMEs (Hsu et al., 2012; Mahendra et al., 2015; Hitchen et al., 2017). This hampers firm innovation within SMEs. In this case, governments must lower the strict imposed requirement,

whereas SMEs will be better capable to comply with these requirements. As a result, SMEs will gain easier support from high-quality institutions and, hence, firm innovation will increase (Lee & Law, 2017; van Waarden, 2001; Verheul et al., 2002).

6.2. Limitations

As argued in chapter three should have been 27 emerging market countries incorporated in the analysis (table 4). However, the number of emerging markets were decreased due to the fact that a homogeneous sample needed to be developed. Meaning that left data was not available or too old. This resulted in a sample of just eight countries among the continents Africa, Europe, while neglecting Asia and South America. Reducing the number of emerging markets might decrease the power for generalization and representativity for the entire sample. In sum, outcomes regarding this thesis may differ for other emerging markets countries.

The prominent scholars North (1990) and Scott (1995) declared that the institutional environment contained normative, regulative and cognitive institutions. However, for measuring the institutional quality of prior mentioned institutions, Barasa et al., (2017) was used. This measurement contained eight items, which all incorporate the extent to which companies experience obstacles. In particular, these eight items of Barasa et al., (2017) are mainly focussing on the regulative institutions, ignoring the normative and cognitive institutions within emerging markets. Looking back to the provided World Bank data, the items were not appropriate for taking these into consideration. So, when researchers decide to investigate these institutions, they should collect and make use of a different database.

Finally, the items (h8) ''research and development'' contained a lot of missing values. In order to solve this statistical problem, multiple imputation was adopted where scores were calculated. Field (2013) and Hair et al., (2014) suggested that this was the most appropriate method but this entails some disadvantages. One of these consequences is that the results with respect to research and development can be misleading. In a sense that the effect is false (BMJ, 2009). This could not have been avoided given that the World Bank did not provide sufficient data to analyse the effect. Later research should utilize a different database, whereas fewer data with regard to research and development is missing. By doing this, the outcomes can be validated.

6.3 Future research

In the previous section, I discussed the limitations with respect to this thesis, which are taking as a starting point for new possible future research. To begin with, future research could shed a light on incorporating more emerging markets countries. Especially, the emerging markets from Asia and South America because they were neglected in this study (table 4). A reason for this suggestion is that business environments differ depending on their industries, conditions and institutions (Xu, 2010). As a result, firms experience different obstacles in obtaining permits, contracts or approvals (Dovis & Zaki, 2020). In Dovis and Zaki (2020) study is revealed that firms need more time in days to obtain such an approval or permits, especially in South Asian and South American emerging market countries. However, in North Asia firms experience fewer bureaucratic obstacles. It might thus be interesting to pay attention to re-examine the relationships stated in figure one to demonstrate if the positive effects of corruption exist.

The second suggestion for future research is derived from the measurement of institutional quality. Future research could focus more on the normative as well as cognitive institutions defined by North (1990) and Scott (1995). Daria, Ari and Sami (2013) argued that these normative and cognitive institutions affect SMEs' firm innovation differently compared to regulative institutions. They assume that firm innovation will be enhanced by normative and cognitive institutions, which is a different result in relation to the regulatory institutions within this thesis (Daria et al., 2013). In this case, future research should make use of distinctive data, given that the World Bank database is not appropriate for investigating these different institutions. This might shed some light on a change in effect with respect to firm innovation.

As indicated in paragraph 2.4.1, focussed this thesis just on the relationship of export activities undertaking by SMEs on firm innovation in emerging markets. However, Johanson and Vahlne (1990) argue that SMEs have more options to internationally expand. In this sense, could it be interesting to shed some light on other modality choices, for instance, licensing. This may provide some different perspectives about the direct and moderation effect of internationalization on corruption and firm innovation in emerging markets.

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Appendix A: Principal component analysis

Descriptive Statistics[a]

	Mean	Std. Deviation	Analysis N
j30f How Much of An Obstacle: Corruption	1.38	1.369	8153
h7a The Court System Is Fair, Impartial And Uncorrupted	2.78	.888	8153
h30 How Much of An Obstacle: Courts	.94	1.157	8153
i30 How Much of An Obstacle: Crime, Theft And Disorder?	.87	1.148	8153
j30e How Much of An Obstacle: Political Instability	1.65	1.435	8153
j30a How Much of An Obstacle: Tax Rates	1.86	1.391	8153
j30b How Much of An Obstacle: Tax Administrations	1.41	1.316	8153
j30c How Much of An Obstacle: Business Licensing And Permits	1.13	1.244	8153
d30b How Much of An Obstacle: Customs And Trade Regulations?	.89	1.088	8153
d3b % O Sales: Indirect Exports	2.58	10.670	8153
d3c % of Sales: Direct Exports	5.40	17.297	8153

a. Imputation_ Imputation Number = 10

Correlation Matrix[a]

		j30f How Much of An Obstacle: Corruption	h7a The Court System Is Fair, Impartial And Uncorrupted	h30 How Much of An Obstacle: Courts	i30 How Much of An Obstacle: Crime, Theft And Disorder?	j30e How Much of An Obstacle: Political Instability	j30a How Much of An Obstacle: Tax Rates	j30b How Much of An Obstacle: Tax Administrations	j30c How Much of An Obstacle: Business Licensing And Permits	d30b How Much of An Obstacle: Customs And Trade Regulations?	d3b % O Sales: Indirect Exports	d3c % of Sales: Direct Exports
Correlation	j30f How Much of An Obstacle: Corruption	1.000	.006	.542	.390	.548	.396	.475	.489	.381	-.002	-.056
	h7a The Court System Is Fair, Impartial And Uncorrupted	.006	1.000	-.050	.095	-.015	-.025	-.033	.045	.095	-.003	-.031
	h30 How Much of An Obstacle: Courts	.542	-.050	1.000	.465	.485	.499	.587	.638	.449	.044	-.016
	i30 How Much of An Obstacle: Crime, Theft And Disorder?	.390	.095	.465	1.000	.338	.290	.386	.444	.444	.025	-.024
	j30e How Much of An Obstacle: Political Instability	.548	-.015	.485	.338	1.000	.501	.489	.467	.345	.020	.007
	j30a How Much of An Obstacle: Tax Rates	.396	-.025	.499	.290	.501	1.000	.650	.522	.340	.047	.017
	j30b How Much of An Obstacle: Tax Administrations	.475	-.033	.587	.386	.489	.650	1.000	.593	.417	.048	.000
	j30c How Much of An Obstacle: Business Licensing And Permits	.489	.045	.638	.444	.467	.522	.593	1.000	.488	.046	-.013
	d30b How Much of An Obstacle: Customs And Trade Regulations?	.381	.095	.449	.444	.345	.340	.417	.488	1.000	.081	.064
	d3b % O Sales: Indirect Exports	-.002	-.003	.044	.025	.020	.047	.048	.046	.081	1.000	.034
	d3c % of Sales: Direct Exports	-.056	-.031	-.016	-.024	.007	.017	.000	-.013	.064	.034	1.000

a. Imputation_ Imputation Number = 10

KMO and Bartlett's Test[a]

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		.892
Bartlett's Test of Sphericity	Approx. Chi–Square	28021.883
	df	55
	Sig.	.000

a. Imputation_ Imputation Number = 10

Communalities[a]

	Initial	Extraction
j30f How Much of An Obstacle: Corruption	1.000	.547
h7a The Court System Is Fair, Impartial And Uncorrupted	1.000	.789
h30 How Much of An Obstacle: Courts	1.000	.657
i30 How Much of An Obstacle: Crime, Theft And Disorder?	1.000	.493
j30e How Much of An Obstacle: Political Instability	1.000	.531
j30a How Much of An Obstacle: Tax Rates	1.000	.569
j30b How Much of An Obstacle: Tax Administrations	1.000	.656
j30c How Much of An Obstacle: Business Licensing And Permits	1.000	.647
d30b How Much of An Obstacle: Customs And Trade Regulations?	1.000	.538
d3b % O Sales: Indirect Exports	1.000	.458
d3c % of Sales: Direct Exports	1.000	.562

Extraction Method: Principal Component Analysis.

a. Imputation_ Imputation Number = 10

Total Variance Explained[a]

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.298	39.068	39.068	4.298	39.068	39.068	4.256	38.688	38.688
2	1.090	9.913	48.981	1.090	9.913	48.981	1.125	10.225	48.913
3	1.059	9.625	58.606	1.059	9.625	58.606	1.066	9.693	58.606
4	.963	8.759	67.365						
5	.787	7.159	74.524						
6	.671	6.098	80.622						
7	.543	4.933	85.555						
8	.506	4.598	90.154						
9	.414	3.765	93.919						
10	.344	3.127	97.045						
11	.325	2.955	100.000						

Extraction Method: Principal Component Analysis.

a. Imputation_ Imputation Number = 10

Component Matrix[a,b]

	Component		
	1	2	3
j30f How Much of An Obstacle: Corruption	.721	.012	-.163
h7a The Court System Is Fair, Impartial And Uncorrupted	.020	.872	.169
h30 How Much of An Obstacle: Courts	.807	-.064	-.041
i30 How Much of An Obstacle: Crime, Theft And Disorder?	.625	.314	.055
j30e How Much of An Obstacle: Political Instability	.713	-.120	-.094
j30a How Much of An Obstacle: Tax Rates	.724	-.211	-.022
j30b How Much of An Obstacle: Tax Administrations	.796	-.148	-.025
j30c How Much of An Obstacle: Business Licensing And Permits	.803	.046	.013
d30b How Much of An Obstacle: Customs And Trade Regulations?	.648	.234	.251
d3b % O Sales: Indirect Exports	.068	-.063	.670
d3c % of Sales: Direct Exports	-.006	-.292	.690

Extraction Method: Principal Component Analysis.

a. Imputation_ Imputation Number = 10

b. 3 components extracted.

Rotated Component Matrix[a,b]

	Component		
	1	2	3
j30f How Much of An Obstacle: Corruption	.726	.050	-.131
h7a The Court System Is Fair, Impartial And Uncorrupted	-.072	.884	-.039
h30 How Much of An Obstacle: Courts	.811	.014	.009
i30 How Much of An Obstacle: Crime, Theft And Disorder?	.588	.383	.006
j30e How Much of An Obstacle: Political Instability	.725	-.062	-.033
j30a How Much of An Obstacle: Tax Rates	.740	-.133	.058
j30b How Much of An Obstacle: Tax Administrations	.806	-.065	.044
j30c How Much of An Obstacle: Business Licensing And Permits	.793	.133	.035
d30b How Much of An Obstacle: Customs And Trade Regulations?	.606	.353	.216
d3b % O Sales: Indirect Exports	.030	.099	.669
d3c % of Sales: Direct Exports	-.023	-.126	.738

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization. [a,b]

a. Imputation_ Imputation Number = 10

b. Rotation converged in 4 iterations.

Component Transformation Matrix[a]

Component	1	2	3
1	.993	.106	.042
2	-.093	.968	-.234
3	-.065	.228	.971

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization. [a]

a. Imputation_ Imputation Number = 10

Appendix B: Crombach's alpha

Reliability Statistics

Imputation_ Imputation Number	Cronbach's Alpha	N of Items
0 Original data	.865	9
1	.847	9
2	.847	9
3	.847	9
4	.847	9
5	.847	9
6	.847	9
7	.847	9
8	.846	9
9	.848	9
10	.848	9

10					
	j30f How Much of An Obstacle: Corruption	11.50	42.539	.625	.825
	h7a The Court System Is Fair, Impartial And Uncorrupted	10.09	54.537	.007	.873
	h30 How Much of An Obstacle: Courts	11.91	43.476	.700	.818
	i30 How Much of An Obstacle: Crime, Theft And Disorder?	12.00	46.489	.495	.839
	j30e How Much of An Obstacle: Political Instability	11.22	41.930	.616	.826
	j30a How Much of An Obstacle: Tax Rates	11.02	42.290	.620	.826
	j30b How Much of An Obstacle: Tax Administrations	11.45	41.837	.699	.817
	j30c How Much of An Obstacle: Business Licensing And Permits	11.73	42.486	.710	.816
	d30b How Much of An Obstacle: Customs And Trade Regulations?	11.94	46.063	.548	.834

Reliability Statistics

Imputation_ Imputation Number	Cronbach's Alpha	N of Items
0 Original data	.013	2
1	.023	2
2	.022	2
3	.022	2
4	.021	2
5	.022	2
6	.021	2
7	.023	2
8	.020	2
9	.022	2
10	.023	2

Item-Total Statistics

Imputation_ Imputation Number		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
0 Original data	d3b % O Sales: Indirect Exports	7.54	429.903	.007	.
	d3c % of Sales: Direct Exports	3.27	155.415	.007	.
1	d3b % O Sales: Indirect Exports	7.71	427.079	.013	.
	d3c % of Sales: Direct Exports	3.41	155.245	.013	.
2	d3b % O Sales: Indirect Exports	7.74	428.571	.013	.
	d3c % of Sales: Direct Exports	3.40	154.997	.013	.
3	d3b % O Sales: Indirect Exports	7.72	427.876	.013	.
	d3c % of Sales: Direct Exports	3.41	155.034	.013	.
4	d3b % O Sales: Indirect Exports	7.71	427.375	.012	.
	d3c % of Sales: Direct Exports	3.40	154.739	.012	.
5	d3b % O Sales: Indirect Exports	7.71	427.389	.013	.
	d3c % of Sales: Direct Exports	3.41	155.037	.013	.
6	d3b % O Sales: Indirect Exports	7.72	427.170	.012	.
	d3c % of Sales: Direct Exports	3.40	154.757	.012	.
7	d3b % O Sales: Indirect Exports	7.71	427.831	.013	.
	d3c % of Sales: Direct Exports	3.40	154.934	.013	.
8	d3b % O Sales: Indirect Exports	7.70	427.159	.011	.
	d3c % of Sales: Direct Exports	3.38	154.520	.011	.
9	d3b % O Sales: Indirect Exports	7.73	428.218	.013	.
	d3c % of Sales: Direct Exports	3.39	154.839	.013	.
10	d3b % O Sales: Indirect Exports	7.72	427.514	.013	.
	d3c % of Sales: Direct Exports	3.41	154.890	.013	.

Appendix C: Regression analysis

Model Summary

Imputation_ Imputation Number	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
0 Original data	1	.518[a]	.268	.259	.345
1	1	.311[b]	.097	.095	.299
2	1	.314[c]	.099	.097	.298
3	1	.308[b]	.095	.093	.298
4	1	.311[d]	.097	.095	.299
5	1	.314[b]	.099	.097	.299
6	1	.313[e]	.098	.096	.298
7	1	.306[b]	.094	.092	.299
8	1	.313[f]	.098	.096	.298
9	1	.313[b]	.098	.096	.298
10	1	.313[g]	.098	.096	.298

ANOVA[a]

Imputation_ Imputation Number	Model		Sum of Squares	df	Mean Square	F	Sig.
0 Original data	1	Regression	58.304	16	3.644	30.676	.000[b]
		Residual	159.176	1340	.119		
		Total	217.480	1356			
1	1	Regression	77.816	16	4.864	54.507	.000[c]
		Residual	725.949	8136	.089		
		Total	803.765	8152			
2	1	Regression	79.356	16	4.960	55.704	.000[d]
		Residual	724.409	8136	.089		
		Total	803.765	8152			
3	1	Regression	75.986	16	4.749	53.377	.000[e]
		Residual	723.885	8136	.089		
		Total	799.871	8152			
4	1	Regression	77.492	16	4.843	54.314	.000[e]
		Residual	725.494	8136	.089		
		Total	802.987	8152			
5	1	Regression	79.289	16	4.956	55.593	.000[c]
		Residual	725.254	8136	.089		
		Total	804.543	8152			
6	1	Regression	78.624	16	4.914	55.313	.000[f]
		Residual	722.805	8136	.089		
		Total	801.429	8152			
7	1	Regression	75.491	16	4.718	52.653	.000[c]
		Residual	729.052	8136	.090		
		Total	804.543	8152			
8	1	Regression	78.522	16	4.908	55.174	.000[g]
		Residual	723.686	8136	.089		
		Total	802.208	8152			
9	1	Regression	78.601	16	4.913	55.176	.000[e]
		Residual	724.386	8136	.089		
		Total	802.987	8152			
10	1	Regression	78.720	16	4.920	55.269	.000[h]
		Residual	724.267	8136	.089		
		Total	802.987	8152			

a. Dependent Variable: h1 New Products/Services Introduced Over Last 3 Yrs

b. Predictors: (Constant), INTERNATIONALIZATION, dPoland Dummy_Poland, Bribery, dRussia Dummy_Russia, dHungary Dummy_Hungary, IND_2 a0=Retail services, SIZE_2 a6a=Medium, foreignowned, dGreece Dummy_Greece, dTurkey Dummy_Turkey, h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?, b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?, dCzech Dummy_Czech, IND_3 a0=Other services, Institutionalquality, dZAF Dummy_ZAF

Coefficients[a]

Imputation_ Imputation Number	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		Fraction Missing Info.	Relative Increase Variance	Relative Efficiency
			B	Std. Error	Beta			Tolerance	VIF			
0 Original data	1	(Constant)	.117	.053		2.179	.030					
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.104	.021	.126	4.905	.000	.826	1.211			
		foreignowned	.049	.055	.022	.907	.365	.918	1.090			
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.001	.023	.890	.374	.807	1.239			
		IND_2 a0=Retail services	-.024	.028	-.023	-.863	.388	.753	1.329			
		IND_3 a0=Other services	-.013	.023	-.015	-.548	.584	.714	1.401			
		dZAF Dummy_ZAF	-.104	.048	-.130	-2.158	.031	.150	6.651			
		dTurkey Dummy_Turkey	.160	.056	.111	2.836	.005	.355	2.819			
		dRussia Dummy_Russia	.174	.057	.114	3.055	.002	.393	2.545			
		dPoland Dummy_Poland	.238	.064	.121	3.718	.000	.516	1.940			
		dCzech Dummy_Czech	.290	.056	.202	5.138	.000	.352	2.839			
		dHungary Dummy_Hungary	.373	.064	.197	5.835	.000	.477	2.095			
		dGreece Dummy_Greece	.347	.057	.237	6.085	.000	.359	2.784			
		SIZE_2 a6a=Medium	.029	.019	.036	1.508	.132	.936	1.068			
		Bribery	.120	.055	.053	2.184	.029	.919	1.088			
		Institutionalquality	-.036	.013	-.084	-2.825	.005	.618	1.618			
		INTERNATIONALIZATION	7.670E-5	.001	.002	.084	.933	.783	1.277			
1	1	(Constant)	-.005	.012		-.472	.637					
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.052	.007	.083	7.607	.000	.941	1.063			
		foreignowned	.026	.018	.016	1.472	.141	.952	1.050			
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.043	3.848	.000	.878	1.139			
		IND_2 a0=Retail services	-.030	.011	-.031	-2.702	.007	.862	1.160			
		IND_3 a0=Other services	-.025	.008	-.037	-3.238	.001	.871	1.148			
		dZAF Dummy_ZAF	.030	.013	.028	2.284	.022	.733	1.363			
		dTurkey Dummy_Turkey	.037	.011	.042	3.398	.001	.717	1.395			
		dRussia Dummy_Russia	.102	.012	.103	8.598	.000	.779	1.283			
		dPoland Dummy_Poland	.157	.011	.169	14.256	.000	.793	1.261			
		dCzech Dummy_Czech	.282	.017	.192	16.843	.000	.853	1.172			
		dHungary Dummy_Hungary	.137	.014	.119	10.039	.000	.784	1.275			
		dGreece Dummy_Greece	.215	.016	.156	13.572	.000	.836	1.196			
		SIZE_2 a6a=Medium	.015	.007	.023	2.097	.036	.941	1.063			
		Bribery	.071	.020	.037	3.448	.001	.958	1.043			
		Institutionalquality	-.008	.004	-.024	-2.028	.043	.763	1.310			
		INTERNATIONALIZATION	.001	.000	.040	3.523	.000	.868	1.152			
2	1	(Constant)	-.006	.011		-.487	.626					
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.061	.007	.095	8.813	.000	.948	1.054			
		foreignowned	.014	.018	.008	.779	.436	.953	1.049			
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.039	3.446	.001	.878	1.140			
		IND_2 a0=Retail services	-.027	.011	-.028	-2.459	.014	.861	1.161			
		IND_3 a0=Other services	-.026	.008	-.037	-3.309	.001	.872	1.147			
		dZAF Dummy_ZAF	.031	.013	.029	2.346	.019	.733	1.363			
		dTurkey Dummy_Turkey	.037	.011	.042	3.398	.001	.718	1.393			
		dRussia Dummy_Russia	.103	.012	.104	8.731	.000	.780	1.282			
		dPoland Dummy_Poland	.161	.011	.173	14.587	.000	.792	1.262			
		dCzech Dummy_Czech	.282	.017	.192	16.890	.000	.856	1.169			
		dHungary Dummy_Hungary	.134	.014	.117	9.851	.000	.786	1.273			
		dGreece Dummy_Greece	.215	.016	.157	13.621	.000	.837	1.195			
		SIZE_2 a6a=Medium	.014	.007	.021	1.941	.052	.942	1.062			
		Bribery	.070	.021	.037	3.432	.001	.959	1.043			
		Institutionalquality	-.009	.004	-.026	-2.139	.032	.762	1.312			
		INTERNATIONALIZATION	.001	.000	.043	3.787	.000	.871	1.148			

			B	Std. Error	Beta	t	Sig.	Tolerance	VIF
3	1	(Constant)	-.001	.011		-.129	.897		
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.047	.007	.074	6.808	.000	.933	1.071
		foreignowned	.020	.018	.012	1.125	.260	.952	1.050
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.043	3.809	.000	.878	1.140
		IND_2 a0=Retail services	-.029	.011	-.030	-2.665	.008	.863	1.159
		IND_3 a0=Other services	-.024	.008	-.035	-3.065	.002	.872	1.147
		dZAF Dummy_ZAF	.027	.013	.025	2.030	.042	.735	1.361
		dTurkey Dummy_Turkey	.032	.011	.037	3.010	.003	.721	1.387
		dRussia Dummy_Russia	.095	.012	.096	7.996	.000	.772	1.295
		dPoland Dummy_Poland	.156	.011	.168	14.196	.000	.791	1.264
		dCzech Dummy_Czech	.283	.017	.193	16.889	.000	.850	1.176
		dHungary Dummy_Hungary	.130	.014	.114	9.552	.000	.780	1.282
		dGreece Dummy_Greece	.215	.016	.156	13.568	.000	.836	1.196
		SIZE_2 a6a=Medium	.016	.007	.025	2.344	.019	.942	1.062
		Bribery	.054	.020	.029	2.681	.007	.958	1.044
		Institutionalquality	-.009	.004	-.027	-2.226	.026	.757	1.321
		INTERNATIONALIZATION	.001	.000	.042	3.716	.000	.871	1.149
4	1	(Constant)	-.004	.012		-.341	.733		
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.052	.007	.082	7.593	.000	.947	1.056
		foreignowned	.029	.018	.017	1.574	.116	.954	1.049
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.039	3.436	.001	.876	1.142
		IND_2 a0=Retail services	-.030	.011	-.031	-2.757	.006	.862	1.160
		IND_3 a0=Other services	-.026	.008	-.038	-3.351	.001	.871	1.149
		dZAF Dummy_ZAF	.031	.013	.029	2.351	.019	.732	1.367
		dTurkey Dummy_Turkey	.036	.011	.041	3.311	.001	.718	1.393
		dRussia Dummy_Russia	.102	.012	.102	8.584	.000	.779	1.284
		dPoland Dummy_Poland	.158	.011	.170	14.336	.000	.791	1.264
		dCzech Dummy_Czech	.286	.017	.195	17.100	.000	.855	1.170
		dHungary Dummy_Hungary	.139	.014	.121	10.199	.000	.786	1.272
		dGreece Dummy_Greece	.218	.016	.158	13.754	.000	.837	1.194
		SIZE_2 a6a=Medium	.015	.007	.024	2.163	.031	.941	1.063
		Bribery	.058	.020	.031	2.900	.004	.956	1.046
		Institutionalquality	-.008	.004	-.024	-1.960	.050	.759	1.317
		INTERNATIONALIZATION	.001	.000	.041	3.675	.000	.871	1.148
5	1	(Constant)	-.008	.011		-.666	.506		
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.059	.007	.092	8.534	.000	.946	1.057
		foreignowned	.024	.018	.015	1.349	.177	.951	1.052
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.042	3.712	.000	.879	1.138
		IND_2 a0=Retail services	-.028	.011	-.029	-2.537	.011	.861	1.161
		IND_3 a0=Other services	-.024	.008	-.035	-3.080	.002	.871	1.148
		dZAF Dummy_ZAF	.031	.013	.029	2.374	.018	.733	1.364
		dTurkey Dummy_Turkey	.035	.011	.040	3.255	.001	.720	1.388
		dRussia Dummy_Russia	.102	.012	.103	8.661	.000	.781	1.280
		dPoland Dummy_Poland	.161	.011	.173	14.633	.000	.792	1.262
		dCzech Dummy_Czech	.281	.017	.191	16.749	.000	.852	1.173
		dHungary Dummy_Hungary	.133	.014	.116	9.746	.000	.783	1.277
		dGreece Dummy_Greece	.212	.016	.154	13.380	.000	.835	1.197
		SIZE_2 a6a=Medium	.013	.007	.020	1.878	.060	.939	1.065
		Bribery	.074	.021	.039	3.598	.000	.958	1.044
		Institutionalquality	-.008	.004	-.024	-1.971	.049	.760	1.316
		INTERNATIONALIZATION	.001	.000	.041	3.661	.000	.872	1.146

			B	Std. Error	Beta	t	Sig.	Tolerance	VIF
6	1	(Constant)	-.005	.011		-.450	.653		
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.057	.007	.090	8.290	.000	.945	1.058
		foreignowned	.020	.018	.012	1.135	.256	.952	1.050
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.036	3.168	.002	.879	1.138
		IND_2 a0=Retail services	-.027	.011	-.029	-2.515	.012	.863	1.159
		IND_3 a0=Other services	-.024	.008	-.035	-3.082	.002	.872	1.146
		dZAF Dummy_ZAF	.030	.013	.028	2.311	.021	.733	1.364
		dTurkey Dummy_Turkey	.037	.011	.043	3.449	.001	.718	1.393
		dRussia Dummy_Russia	.096	.012	.097	8.088	.000	.776	1.288
		dPoland Dummy_Poland	.162	.011	.175	14.736	.000	.790	1.265
		dCzech Dummy_Czech	.281	.017	.192	16.842	.000	.855	1.169
		dHungary Dummy_Hungary	.137	.014	.120	10.098	.000	.786	1.272
		dGreece Dummy_Greece	.216	.016	.158	13.688	.000	.837	1.194
		SIZE_2 a6a=Medium	.016	.007	.025	2.311	.021	.942	1.062
		Bribery	.088	.020	.047	4.331	.000	.956	1.046
		Institutionalquality	-.008	.004	-.025	-2.061	.039	.762	1.312
		INTERNATIONALIZATION	.001	.000	.043	3.831	.000	.872	1.147
7	1	(Constant)	.001	.012		.072	.942		
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.035	.007	.056	5.132	.000	.946	1.058
		foreignowned	.023	.018	.014	1.287	.198	.953	1.049
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.042	3.748	.000	.877	1.140
		IND_2 a0=Retail services	-.029	.011	-.030	-2.659	.008	.861	1.162
		IND_3 a0=Other services	-.023	.008	-.034	-3.014	.003	.870	1.149
		dZAF Dummy_ZAF	.026	.013	.024	1.968	.049	.736	1.359
		dTurkey Dummy_Turkey	.031	.011	.036	2.895	.004	.722	1.384
		dRussia Dummy_Russia	.103	.012	.104	8.697	.000	.778	1.286
		dPoland Dummy_Poland	.160	.011	.172	14.460	.000	.792	1.263
		dCzech Dummy_Czech	.283	.017	.193	16.844	.000	.850	1.176
		dHungary Dummy_Hungary	.136	.014	.119	9.971	.000	.785	1.273
		dGreece Dummy_Greece	.213	.016	.155	13.370	.000	.832	1.202
		SIZE_2 a6a=Medium	.016	.007	.025	2.276	.023	.942	1.062
		Bribery	.080	.021	.042	3.868	.000	.955	1.047
		Institutionalquality	-.007	.004	-.022	-1.802	.072	.762	1.312
		INTERNATIONALIZATION	.001	.000	.043	3.768	.000	.871	1.148
8	1	(Constant)	-.005	.011		-.422	.673		
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.056	.007	.088	8.133	.000	.942	1.061
		foreignowned	.026	.018	.016	1.450	.147	.951	1.052
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.042	3.738	.000	.878	1.139
		IND_2 a0=Retail services	-.026	.011	-.027	-2.413	.016	.860	1.162
		IND_3 a0=Other services	-.024	.008	-.036	-3.153	.002	.872	1.147
		dZAF Dummy_ZAF	.028	.013	.026	2.111	.035	.736	1.358
		dTurkey Dummy_Turkey	.035	.011	.040	3.195	.001	.719	1.390
		dRussia Dummy_Russia	.100	.012	.101	8.470	.000	.780	1.282
		dPoland Dummy_Poland	.156	.011	.168	14.156	.000	.790	1.266
		dCzech Dummy_Czech	.277	.017	.188	16.432	.000	.843	1.186
		dHungary Dummy_Hungary	.137	.014	.120	10.061	.000	.786	1.272
		dGreece Dummy_Greece	.210	.016	.153	13.228	.000	.833	1.201
		SIZE_2 a6a=Medium	.015	.007	.024	2.176	.030	.941	1.062
		Bribery	.077	.020	.041	3.773	.000	.950	1.053
		Institutionalquality	-.008	.004	-.025	-2.047	.041	.758	1.319
		INTERNATIONALIZATION	.001	.000	.039	3.497	.000	.869	1.150

Model		Predictor	B	Std. Error	Beta	t	Sig.	Tolerance	VIF			
9	1	(Constant)	-.004	.012		-.337	.736					
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.053	.007	.083	7.695	.000	.947	1.056			
		foreignowned	.009	.018	.006	.515	.606	.953	1.049			
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.037	3.327	.001	.880	1.137			
		IND_2 a0=Retail services	-.027	.011	-.028	-2.478	.013	.861	1.161			
		IND_3 a0=Other services	-.024	.008	-.034	-3.058	.002	.871	1.148			
		dZAF Dummy_ZAF	.029	.013	.027	2.228	.026	.734	1.362			
		dTurkey Dummy_Turkey	.037	.011	.042	3.382	.001	.718	1.393			
		dRussia Dummy_Russia	.100	.012	.101	8.441	.000	.780	1.282			
		dPoland Dummy_Poland	.159	.011	.170	14.392	.000	.793	1.261			
		dCzech Dummy_Czech	.279	.017	.190	16.637	.000	.851	1.176			
		dHungary Dummy_Hungary	.136	.014	.119	10.027	.000	.786	1.272			
		dGreece Dummy_Greece	.214	.016	.155	13.496	.000	.836	1.196			
		SIZE_2 a6a=Medium	.016	.007	.025	2.319	.020	.942	1.061			
		Bribery	.098	.020	.052	4.849	.000	.954	1.049			
		Institutionalquality	-.009	.004	-.026	-2.190	.029	.758	1.319			
		INTERNATIONALIZATION	.001	.000	.045	4.000	.000	.872	1.147			
10	1	(Constant)	-.002	.011		-.165	.869					
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.056	.007	.088	8.140	.000	.947	1.056			
		foreignowned	.017	.018	.010	.960	.337	.955	1.047			
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000	.037	3.297	.001	.879	1.138			
		IND_2 a0=Retail services	-.030	.011	-.031	-2.768	.006	.863	1.159			
		IND_3 a0=Other services	-.025	.008	-.036	-3.163	.002	.872	1.147			
		dZAF Dummy_ZAF	.028	.013	.027	2.158	.031	.735	1.361			
		dTurkey Dummy_Turkey	.036	.011	.042	3.357	.001	.719	1.392			
		dRussia Dummy_Russia	.099	.012	.100	8.372	.000	.779	1.284			
		dPoland Dummy_Poland	.155	.011	.167	14.087	.000	.791	1.265			
		dCzech Dummy_Czech	.281	.017	.191	16.763	.000	.853	1.172			
		dHungary Dummy_Hungary	.134	.014	.117	9.844	.000	.784	1.276			
		dGreece Dummy_Greece	.215	.016	.156	13.565	.000	.836	1.196			
		SIZE_2 a6a=Medium	.016	.007	.025	2.307	.021	.942	1.061			
		Bribery	.083	.021	.043	3.982	.000	.959	1.043			
		Institutionalquality	-.010	.004	-.029	-2.407	.016	.758	1.320			
		INTERNATIONALIZATION	.001	.000	.045	4.027	.000	.875	1.143			
Pooled	1	(Constant)	-.004	.012		-.331	.740			.048	.050	.995
		h8 During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.053	.010		5.156	.000			.576	1.215	.946
		foreignowned	.021	.019		1.099	.272			.112	.124	.989
		b7 How Many Years of Experience Working In This Sector Does The Top Manager Have?	.001	.000		3.437	.001			.065	.068	.994
		IND_2 a0=Retail services	-.028	.011		-2.572	.010			.018	.019	.998
		IND_3 a0=Other services	-.024	.008		-3.129	.002			.014	.014	.999
		dZAF Dummy_ZAF	.029	.013		2.191	.028			.022	.023	.998
		dTurkey Dummy_Turkey	.035	.011		3.206	.001			.036	.037	.996
		dRussia Dummy_Russia	.100	.012		8.193	.000			.064	.067	.994
		dPoland Dummy_Poland	.159	.011		14.027	.000			.050	.052	.995
		dCzech Dummy_Czech	.282	.017		16.577	.000			.026	.027	.997
		dHungary Dummy_Hungary	.135	.014		9.761	.000			.036	.037	.996
		dGreece Dummy_Greece	.214	.016		13.373	.000			.022	.023	.998
		SIZE_2 a6a=Medium	.015	.007		2.150	.032			.029	.029	.997
		Bribery	.075	.025		3.050	.003			.331	.463	.968
		Institutionalquality	-.009	.004		-2.052	.040			.030	.031	.997
		INTERNATIONALIZATION	.001	.000		3.690	.000			.031	.032	.997

a. Dependent Variable: h1 New Products/Services Introduced Over Last 3 Yrs

			B	S.E.		Sig.	Exp(B)					
Pooled	Step 1[a]	During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.558	.117		.000	1.747	1.376	2.217	.589	1.277	.944
		foreignowned	.094	.189		.618	1.099	.758	1.592	.094	.102	.991
		How Many Years of Experience Working In This Sector Does The Top Manager Have?	.012	.004		.001	1.012	1.005	1.020	.079	.084	.992
		a0=Retail services	−.206	.125		.099	.814	.637	1.039	.020	.020	.998
		a0=Other services	−.263	.096		.006	.769	.637	.927	.017	.017	.998
		Dummy_ZAF	.538	.220		.014	1.712	1.113	2.633	.014	.014	.999
		Dummy_Turkey	.737	.166		.000	2.089	1.510	2.891	.019	.019	.998
		Dummy_Russia	1.523	.156		.000	4.585	3.375	6.229	.038	.039	.996
		Dummy_Poland	1.956	.141		.000	7.073	5.361	9.332	.035	.036	.996
		Dummy_Czech	2.421	.164		.000	11.260	8.163	15.533	.022	.022	.998
		Dummy_Hungary	1.700	.162		.000	5.474	3.982	7.526	.020	.020	.998
		Dummy_Greece	2.199	.166		.000	9.020	6.511	12.495	.022	.022	.998
		a6a=Small	−.111	.081		.169	.895	.764	1.048	.038	.039	.996
		Bribery	.096	.459		.835	1.100	.446	2.713	.158	.182	.984
		Institutionalquality	−.433	.217		.046	.649	.424	.993	.070	.075	.993
		CR_Internationalization	.183	.034		.000	1.201	1.124	1.284	.024	.025	.998
		Bribery by Institutionalquality	.465	.261		.076	1.592	.951	2.663	.184	.217	.982
		Bribery by CR_Internationalization	−.275	.166		.099	.760	.549	1.053	.112	.123	.989
		institutionalquality_LN	.724	.479		.131	2.063	.806	5.276	.068	.072	.993
		Constant	−3.873	.197		.000	.021	.014	.031	.078	.083	.992

a. Variable(s) entered on step 1: institutionalquality_LN.

Appendix D: The Logistic regression analysis

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

Imputation_ Imputation Number			Chi-square	df	Sig.
0 Original data	Step 1	Step	370.997	13	.000
		Block	370.997	13	.000
		Model	370.997	13	.000
1	Step 1	Step	730.269	13	.000
		Block	730.269	13	.000
		Model	730.269	13	.000
2	Step 1	Step	747.069	13	.000
		Block	747.069	13	.000
		Model	747.069	13	.000
3	Step 1	Step	715.901	13	.000
		Block	715.901	13	.000
		Model	715.901	13	.000
4	Step 1	Step	730.617	13	.000
		Block	730.617	13	.000
		Model	730.617	13	.000
5	Step 1	Step	745.318	13	.000
		Block	745.318	13	.000
		Model	745.318	13	.000
6	Step 1	Step	733.181	13	.000
		Block	733.181	13	.000
		Model	733.181	13	.000
7	Step 1	Step	701.920	13	.000
		Block	701.920	13	.000
		Model	701.920	13	.000
8	Step 1	Step	736.877	13	.000
		Block	736.877	13	.000
		Model	736.877	13	.000
9	Step 1	Step	726.473	13	.000
		Block	726.473	13	.000
		Model	726.473	13	.000
10	Step 1	Step	733.215	13	.000
		Block	733.215	13	.000
		Model	733.215	13	.000

Model Summary

Imputation_ Imputation Number	Step	−2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
0 Original data	1	988.757[a]	.239	.378
1	1	4949.927[b]	.086	.171
2	1	4933.127[c]	.088	.174
3	1	4943.446[d]	.084	.168
4	1	4945.414[e]	.086	.171
5	1	4939.040[f]	.087	.174
6	1	4934.513[g]	.086	.172
7	1	4982.438[h]	.082	.164
8	1	4934.987[i]	.086	.172
9	1	4949.558[j]	.085	.170
10	1	4942.816[k]	.086	.171

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 0 Original data.

b. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 1.

c. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 2.

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 3.

e. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 4.

f. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 5.

g. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 6.

h. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 7.

i. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 8.

j. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 9.

k. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 10.

Hosmer and Lemeshow Test

Imputation_ Imputation Number	Step	Chi-square	df	Sig.
0 Original data	1	8.160	8	.418
1	1	4.560	8	.803
2	1	3.179	8	.923
3	1	3.314	8	.913
4	1	7.633	8	.470
5	1	3.685	8	.884
6	1	2.782	8	.947
7	1	4.820	8	.777
8	1	3.534	8	.897
9	1	4.211	8	.838
10	1	1.624	8	.990

			B	S.E.		Sig.	Exp(B)					
Pooled	Step 1[a]	During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.561	.112		.000	1.753	1.393	2.204	.567	1.171	.946
		foreignowned	.305	.182		.094	1.357	.949	1.939	.083	.089	.992
		How Many Years of Experience Working In This Sector Does The Top Manager Have?	.014	.004		.000	1.014	1.007	1.021	.065	.068	.994
		a0=Retail services	-.339	.122		.005	.713	.562	.904	.017	.018	.998
		a0=Other services	-.323	.094		.001	.724	.602	.870	.021	.021	.998
		Dummy_ZAF	.603	.214		.005	1.828	1.201	2.782	.015	.015	.998
		Dummy_Turkey	.755	.162		.000	2.127	1.548	2.923	.018	.018	.998
		Dummy_Russia	1.586	.155		.000	4.885	3.604	6.622	.037	.038	.996
		Dummy_Poland	1.976	.140		.000	7.213	5.483	9.489	.036	.037	.996
		Dummy_Czech	2.662	.158		.000	14.330	10.511	19.537	.016	.016	.998
		Dummy_Hungary	1.876	.153		.000	6.524	4.832	8.809	.026	.026	.997
		Dummy_Greece	2.265	.160		.000	9.635	7.040	13.186	.025	.026	.997
		a6a=Small	-.184	.079		.021	.832	.712	.972	.047	.049	.995
		Constant	-3.777	.165		.000	.023	.017	.032	.096	.104	.991

a. Variable(s) entered on step 1: During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?, foreignowned, How Many Years of Experience Working In This Sector Does The Top Manager Have?, a0=Retail services, a0=Other services, Dummy_ZAF, Dummy_Turkey, Dummy_Russia, Dummy_Poland, Dummy_Czech, Dummy_Hungary, Dummy_Greece, a6a=Small.

Block 2: Method = Enter

Omnibus Tests of Model Coefficients

Imputation_ Imputation Number			Chi-square	df	Sig.
0 Original data	Step 1	Step	2.407	1	.121
		Block	2.407	1	.121
		Model	373.404	14	.000
1	Step 1	Step	8.330	1	.004
		Block	8.330	1	.004
		Model	738.598	14	.000
2	Step 1	Step	8.229	1	.004
		Block	8.229	1	.004
		Model	755.299	14	.000
3	Step 1	Step	4.672	1	.031
		Block	4.672	1	.031
		Model	720.574	14	.000
4	Step 1	Step	5.663	1	.017
		Block	5.663	1	.017
		Model	736.280	14	.000
5	Step 1	Step	8.313	1	.004
		Block	8.313	1	.004
		Model	753.632	14	.000
6	Step 1	Step	12.576	1	.000
		Block	12.576	1	.000
		Model	745.757	14	.000
7	Step 1	Step	9.951	1	.002
		Block	9.951	1	.002
		Model	711.871	14	.000
8	Step 1	Step	9.873	1	.002
		Block	9.873	1	.002
		Model	746.750	14	.000
9	Step 1	Step	15.140	1	.000
		Block	15.140	1	.000
		Model	741.613	14	.000
10	Step 1	Step	11.059	1	.001
		Block	11.059	1	.001
		Model	744.274	14	.000

Model Summary

Imputation_ Imputation Number	Step	−2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
0 Original data	1	986.350[a]	.241	.380
1	1	4941.598[b]	.087	.173
2	1	4924.897[c]	.088	.176
3	1	4938.773[d]	.085	.169
4	1	4939.751[e]	.086	.172
5	1	4930.727[f]	.088	.176
6	1	4921.937[g]	.087	.174
7	1	4972.487[h]	.084	.167
8	1	4925.114[i]	.088	.175
9	1	4934.418[j]	.087	.173
10	1	4931.757[k]	.087	.174

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 0 Original data.

b. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 1.

c. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 2.

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 3.

e. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 4.

f. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 5.

g. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 6.

h. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 7.

i. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 8.

j. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 9.

k. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 10.

Hosmer and Lemeshow Test

Imputation_ Imputation Number	Step	Chi-square	df	Sig.
0 Original data	1	4.474	8	.812
1	1	7.038	8	.533
2	1	3.103	8	.928
3	1	4.025	8	.855
4	1	6.424	8	.600
5	1	1.907	8	.984
6	1	3.175	8	.923
7	1	7.747	8	.459
8	1	2.336	8	.969
9	1	5.432	8	.711
10	1	2.729	8	.950

			B	S.E.		Sig.	Exp(B)					
Pooled	Step 1[a]	During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.571	.112		.000	1.770	1.408	2.224	.561	1.146	.947
		foreignowned	.309	.183		.091	1.362	.951	1.950	.091	.098	.991
		How Many Years of Experience Working In This Sector Does The Top Manager Have?	.014	.004		.000	1.014	1.007	1.021	.071	.075	.993
		a0=Retail services	-.333	.122		.006	.717	.565	.910	.020	.020	.998
		a0=Other services	-.331	.094		.000	.718	.597	.863	.019	.020	.998
		Dummy_ZAF	.621	.214		.004	1.861	1.222	2.833	.016	.016	.998
		Dummy_Turkey	.774	.163		.000	2.168	1.577	2.982	.020	.021	.998
		Dummy_Russia	1.569	.155		.000	4.800	3.539	6.510	.039	.040	.996
		Dummy_Poland	1.991	.140		.000	7.322	5.562	9.639	.038	.039	.996
		Dummy_Czech	2.594	.160		.000	13.382	9.771	18.328	.023	.023	.998
		Dummy_Hungary	1.884	.153		.000	6.579	4.871	8.888	.027	.028	.997
		Dummy_Greece	2.253	.161		.000	9.516	6.948	13.035	.027	.028	.997
		a6a=Small	-.176	.079		.027	.839	.718	.980	.045	.047	.996
		Bribery	.566	.206		.006	1.762	1.174	2.643	.227	.281	.978
		Constant	-3.806	.165		.000	.022	.016	.031	.091	.098	.991

a. Variable(s) entered on step 1: Bribery.

Block 3: Method = Enter

Omnibus Tests of Model Coefficients

Imputation_ Imputation Number			Chi-square	df	Sig.
0 Original data	Step 1	Step	3.630	2	.163
		Block	3.630	2	.163
		Model	377.034	16	.000
1	Step 1	Step	27.930	2	.000
		Block	27.930	2	.000
		Model	766.529	16	.000
2	Step 1	Step	30.685	2	.000
		Block	30.685	2	.000
		Model	785.984	16	.000
3	Step 1	Step	30.234	2	.000
		Block	30.234	2	.000
		Model	750.807	16	.000
4	Step 1	Step	28.890	2	.000
		Block	28.890	2	.000
		Model	765.170	16	.000
5	Step 1	Step	30.054	2	.000
		Block	30.054	2	.000
		Model	783.686	16	.000
6	Step 1	Step	30.208	2	.000
		Block	30.208	2	.000
		Model	775.965	16	.000
7	Step 1	Step	28.887	2	.000
		Block	28.887	2	.000
		Model	740.759	16	.000
8	Step 1	Step	28.233	2	.000
		Block	28.233	2	.000
		Model	774.982	16	.000
9	Step 1	Step	33.192	2	.000
		Block	33.192	2	.000
		Model	774.805	16	.000
10	Step 1	Step	34.482	2	.000
		Block	34.482	2	.000
		Model	778.757	16	.000

Model Summary

Imputation_ Imputation Number	Step	−2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
0 Original data	1	982.720[a]	.243	.383
1	1	4913.667[b]	.090	.179
2	1	4894.212[c]	.092	.183
3	1	4908.540[d]	.088	.176
4	1	4910.861[e]	.090	.179
5	1	4900.672[f]	.092	.183
6	1	4891.729[g]	.091	.181
7	1	4943.600[h]	.087	.173
8	1	4896.882[i]	.091	.181
9	1	4901.226[j]	.091	.181
10	1	4897.275[k]	.091	.182

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 0 Original data.

b. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 1.

c. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 2.

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 3.

e. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 4.

f. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 5.

g. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 6.

h. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 7.

i. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 8.

j. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 9.

k. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 10.

Hosmer and Lemeshow Test

Imputation_ Imputation Number	Step	Chi-square	df	Sig.
0 Original data	1	4.055	8	.852
1	1	8.333	8	.402
2	1	9.746	8	.283
3	1	9.774	8	.281
4	1	8.987	8	.343
5	1	6.642	8	.576
6	1	7.351	8	.499
7	1	11.731	8	.164
8	1	8.723	8	.366
9	1	9.357	8	.313
10	1	8.576	8	.379

			B	S.E.		Sig.	Exp(B)					
Pooled	Step 1[a]	During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.565	.116		.000	1.759	1.387	2.232	.588	1.273	.944
		foreignowned	.103	.190		.586	1.109	.764	1.609	.103	.112	.990
		How Many Years of Experience Working In This Sector Does The Top Manager Have?	.013	.004		.001	1.013	1.006	1.020	.075	.079	.993
		a0=Retail services	-.200	.124		.107	.819	.642	1.044	.017	.017	.998
		a0=Other services	-.254	.095		.008	.776	.643	.935	.019	.020	.998
		Dummy_ZAF	.496	.217		.023	1.642	1.072	2.514	.016	.016	.998
		Dummy_Turkey	.733	.166		.000	2.080	1.503	2.880	.019	.019	.998
		Dummy_Russia	1.539	.156		.000	4.660	3.434	6.324	.038	.039	.996
		Dummy_Poland	1.955	.141		.000	7.067	5.357	9.322	.035	.036	.997
		Dummy_Czech	2.412	.164		.000	11.158	8.089	15.391	.023	.024	.998
		Dummy_Hungary	1.667	.161		.000	5.294	3.864	7.254	.029	.029	.997
		Dummy_Greece	2.200	.166		.000	9.027	6.518	12.502	.023	.024	.998
		a6a=Small	-.115	.080		.153	.892	.762	1.044	.037	.038	.996
		Bribery	.602	.209		.004	1.825	1.209	2.755	.240	.300	.977
		Institutionalquality	-.100	.049		.039	.904	.822	.995	.035	.036	.997
		CR_Internationalization	.174	.034		.000	1.190	1.114	1.272	.025	.025	.998
		Constant	-3.762	.177		.000	.023	.016	.033	.080	.086	.992

a. Variable(s) entered on step 1: Institutionalquality, CR_Internationalization.

Block 4: Method = Enter

Omnibus Tests of Model Coefficients

Imputation_ Imputation Number			Chi-square	df	Sig.
0 Original data	Step 1	Step	2.298	2	.317
		Block	2.298	2	.317
		Model	379.332	18	.000
1	Step 1	Step	4.883	2	.087
		Block	4.883	2	.087
		Model	771.411	18	.000
2	Step 1	Step	6.849	2	.033
		Block	6.849	2	.033
		Model	792.833	18	.000
3	Step 1	Step	3.404	2	.182
		Block	3.404	2	.182
		Model	754.211	18	.000
4	Step 1	Step	5.746	2	.057
		Block	5.746	2	.057
		Model	770.916	18	.000
5	Step 1	Step	4.057	2	.132
		Block	4.057	2	.132
		Model	787.743	18	.000
6	Step 1	Step	8.283	2	.016
		Block	8.283	2	.016
		Model	784.248	18	.000
7	Step 1	Step	9.751	2	.008
		Block	9.751	2	.008
		Model	750.510	18	.000
8	Step 1	Step	6.961	2	.031
		Block	6.961	2	.031
		Model	781.943	18	.000
9	Step 1	Step	6.304	2	.043
		Block	6.304	2	.043
		Model	781.109	18	.000
10	Step 1	Step	4.221	2	.121
		Block	4.221	2	.121
		Model	782.978	18	.000

Model Summary

Imputation_ Imputation Number	Step	−2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
0 Original data	1	980.422[a]	.244	.385
1	1	4908.785[b]	.090	.180
2	1	4887.363[c]	.093	.185
3	1	4905.136[d]	.088	.177
4	1	4905.116[e]	.090	.180
5	1	4896.615[f]	.092	.183
6	1	4883.446[g]	.092	.183
7	1	4933.849[h]	.088	.175
8	1	4889.921[i]	.091	.182
9	1	4894.922[j]	.091	.182
10	1	4893.053[k]	.092	.183

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 0 Original data.

b. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 1.

c. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 2.

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 3.

e. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 4.

f. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 5.

g. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 6.

h. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 7.

i. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 8.

j. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 9.

k. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001 for split file Imputation_ Imputation Number = 10.

Hosmer and Lemeshow Test

Imputation_ Imputation Number	Step	Chi-square	df	Sig.
0 Original data	1	1.819	8	.986
1	1	10.498	8	.232
2	1	11.918	8	.155
3	1	11.705	8	.165
4	1	10.766	8	.215
5	1	6.027	8	.644
6	1	6.005	8	.647
7	1	12.967	8	.113
8	1	6.378	8	.605
9	1	7.333	8	.501
10	1	10.220	8	.250

			B	S.E.		Sig.	Exp(B)					
Pooled	Step 1[a]	During Last Fiscal Year, Establishment Spent On R&D (Excl Market Research)?	.563	.116		.000	1.756	1.386	2.226	.584	1.253	.945
		foreignowned	.096	.189		.611	1.101	.760	1.594	.092	.100	.991
		How Many Years of Experience Working In This Sector Does The Top Manager Have?	.013	.004		.001	1.013	1.005	1.020	.080	.085	.992
		a0=Retail services	-.203	.125		.104	.816	.639	1.042	.019	.020	.998
		a0=Other services	-.257	.095		.007	.773	.641	.932	.019	.019	.998
		Dummy_ZAF	.486	.218		.026	1.625	1.060	2.491	.017	.017	.998
		Dummy_Turkey	.734	.166		.000	2.083	1.504	2.883	.019	.020	.998
		Dummy_Russia	1.519	.156		.000	4.566	3.361	6.202	.038	.039	.996
		Dummy_Poland	1.954	.141		.000	7.059	5.350	9.315	.036	.037	.996
		Dummy_Czech	2.425	.164		.000	11.305	8.196	15.594	.022	.023	.998
		Dummy_Hungary	1.657	.161		.000	5.243	3.828	7.182	.025	.026	.997
		Dummy_Greece	2.197	.166		.000	8.999	6.494	12.470	.022	.023	.998
		a6a=Small	-.111	.081		.169	.895	.764	1.048	.039	.040	.996
		Bribery	.154	.451		.733	1.166	.481	2.830	.155	.177	.985
		Institutionalquality	-.114	.049		.020	.892	.810	.982	.027	.028	.997
		CR_Internationalization	.183	.034		.000	1.201	1.123	1.284	.024	.025	.998
		Bribery by Institutionalquality	.438	.257		.089	1.550	.935	2.570	.178	.208	.983
		Bribery by CR_Internationalization	-.277	.166		.095	.758	.547	1.050	.111	.122	.989
		Constant	-3.746	.178		.000	.024	.017	.033	.086	.093	.991

a. Variable(s) entered on step 1: Bribery * Institutionalquality , Bribery * CR_Internationalization .